



May
June
1992

Volume 3
Number 5

The *First* Apple IIgs[®] Magazine + Disk Publication!

System

6

Featuring

Articles To Help You Get The Most Out Of System 6

Programs To Help You Take Advantage Of The Power Of System 6

Source Code To Help You Write Your Own System 6 Programs

Plus

Reviews Of

Express • Formulate

The Pegasus Internal Hard Drive

Second Chance • ShoeBox

And

The Secrets Of Writing Phantasm[™] Screen Blankers!

Writer's Block

By Steven W. Disbrow

Thanks Joe!

First of all, let me announce that Joe's InterNet e-mail address is no longer operational. However, you can still send mail to us via InterNet by sending it to either Joe or myself at Joe's new BBS, *pro-gonzo*. To send mail to joe, address it to gonzo@pro-gonzo.cts.com and to send mail to me, address it to diz@pro-gonzo.cts.com. Note that this is Joe's very own personal bulletin board. Other than the fact he is letting us use it as a way to talk to those of you on the net, it is not associated with *GS+* Magazine in any way. If you want to give it a call, the number is (615) 875-6570 and it is up 24 hours a day.

I know how expensive these things can be to operate, so I just want to thank Joe for letting us use it for net mail. Thanks Joe.

1-800 Woes

I have received lots of calls and letters from subscribers outside the country telling me that our 1-800 number does not work outside the United States. Actually, I didn't realize that you could even have a 1-800 number that worked outside the States! Unfortunately, I don't think we can afford to change our 1-800 service to include calls from the rest of the world. We just don't get enough subscriptions from outside the States to justify it.

Speaking of our 1-800 number, it's been very good for us, but I have begun to notice a growing number of folks are using it for technical support, or just to shoot the breeze, or to ask when the next magazine is coming out. Again, I must stress that our 1-800 number is for *orders only!*

I *am* considering opening up the 1-800 number for technical support for our software, but, most of the technical support calls we get are for products from *other* companies! In some cases this is understandable—most of the calls are from people that don't want to call *Æ's* 1-900 number. Now, I really don't mind answering questions from subscribers, but it is about to get to the point where Joe and I spend half the day answering technical questions about other people's products. So, if you have a technical question for another company's product, *please* ask someone in your user group first, and then (if you have a modem) ask online, and then, if nothing else has worked, give us a call and we will see if we can help you. And, when you call, *please* don't use the 1-800 number.

Last Issue?

Is this your last issue of *GS+* Magazine? How can you tell? These are questions that have worried a lot of people over the last few months. Basically, folks have been looking at their mailing labels and seeing the words, "Last Issue." So, they panic and send us off a check or call up (on the 1-you-know-what number) to see what happened to their subscription. Unfortunately, the words, "Last Issue" are only half of the story. Right after those words is a volume and issue number that tells you what your last issue of *GS+* Magazine is. In other words, if this were your last issue, your mailing label would read, "Last Issue: V3.N5". This means that Volume 3, Number 5 of *GS+* Magazine is your last issue.

However, this has confused a *lot* of people, so, starting with this issue, your mailing label will say, "Expires: Vx.Ny" instead of "Last Issue: Vx.Ny". Hopefully, this will prevent any future confusion.

Mmmm, Good!

In my report on last year's KansasFest activities (*GS+* V2.N6), I reported that, although the show itself was great, the food served at the NOMDA convention center left something to be desired. (The food at the Avilla college was pretty good though.) So, in an effort to prevent us from taking them to task this year (and, I suppose, to be able to blame *me* if everyone complains), the folks at Resource Central asked us to help them plan this year's menu. The choices we were given included Oriental food, Italian, Mexican, lots of other things with beans in them, and good old hamburgers.

Being programmers at heart, we ignored the list and suggested pizza and White Castle hamburgers. Unfortunately, we were told that the caterer had already been chosen, and we had to stick with the choices we were given. So, we picked hamburgers and advised that they try to cut some sort of deal with a local pizza parlor for conference attendees. At this point, I don't know what the final choices were, or if there will be special pizza coupons, but if you contact Resource Central and ask them where the closest pizza place is, they might get the message.

And, in a further attempt to make me put my money where my mouth is, I was recruited to come up with some entertainment for this year's conference. At this point, the plan is to have a celebrity roast of Mr. Roger Wagner on Thursday

evening, and a comedy skit during lunch on Friday. Please join us for these events. I think you'll have a good time.

Tax Time!

Well, it's not tax time *now*, but it will be soon. As you probably know, there are not any real IIGS-specific tax programs available. So, what I want to know is, would you like to see reviews of 8-bit tax programs in *GS+* Magazine? At this point, we have only reviewed one other 8-bit program, InWords, and we only did that because so many of you wrote in asking us to do it. If a lot of you want to see reviews of 8-bit tax programs, I have a reviewer who is ready to start on the project. Let me know. (If you are a IIGS developer, how about doing a IIGS-specific tax program?)

Tax This? I Hope Not!

Just days ago, the Supreme Court upheld a decision that will give Congress the power to decide if sales tax should be imposed on mail-order sales. Needless to say, that would include magazine subscriptions. Frankly, if such a law were imposed, and we had to start collecting sales tax on all of our United States subscriptions (we already collect sales tax on Tennessee subscriptions), I don't think we could survive. We simply don't have the people or time to keep up with all the paperwork that would be required.

So, if you think this is a bad thing, *please* write your Congress-person and tell them so! I'm going to write mine as soon as this magazine is at the printer.

System 6 Trials, Part 2

Nope. I'm not going to talk about this again. No way. I've got enough stress without having to field more angry calls from Apple personnel. However, I would like to thank Elle (I hope that's how she spells it) at Apple DTS for going above and beyond the call of duty to FedEx us a copy of the System 6 Golden Master CD ROM after it turned up missing in our April Developer Mailing. Thank you Elle.

And I also want to thank Matt Deatherage for going out on a limb (his left leg I think) for us and clearing up the problems we were having with DTS, and for getting us the technical information we needed in time to write all of the neat software that you will find on this issue's disk. Matt is a great help to us here at *GS+* Magazine, and he deserves all the praise you can heap upon him. (Can I stop now Matt? My lips are sore.) *GS+*

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GS+

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EGOed - Text Editing
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We use a Macintosh LC as a file server because we have to.

Letters

Dear GS+,

I wonder if I should ask you for help in this area, but what the heck . . .

. . . my GS color monitor (Apple brand) is dead. I need a line-output transformer (fly-back line transformer) replacement. Can't get one here, neither Apple plant in Singapore would sell one loose.

Any info would be most appreciated.

Tan Chong Pian
Sabah Shell Petroleum Co. Ltd.
Locked Bag No. 04
87009 FT Labuan
Malaysia

Sorry, but I haven't a clue where to look for one here. Since they do build these things in Singapore (or is it Taiwan?), I would think that you are in the best part of the world for something like this. So, how about it? Does anyone out there know where Tan can get one of these transformers?

Diz

Dear GS+,

Please send the magazine earlier! I received my [March-April 1992] issue on the last day of the date on the magazine, April 30th! By the time I get it, it would be ancient news, especially when it is bimonthly. I would prefer to receive it in the middle of the first month.

Thomas Lay
Irvine, CA

Well Thomas, when you consider that we didn't mail out the March-April 1992 issue until April 18th, I'd say it got to you pretty quickly! The problem is that we publish between the months shown on the cover. Accordingly, we sent the March-April issue to the printer on April 3rd. The best way to think of it is this: our March-April 1992 issue covered what happened in the IIGS market in February, March and early April of 1992. Other publishers may send out a March-April issue in late February or early March, but the contents were probably written three months earlier! Some of our articles are written literally hours before the printer rips the pages out my hands. However, I admit that our odd dating and publishing system does confuse some people. That's the main reason we usually refer to issues of GS+ Magazine

by volume and issue number. Perhaps we should just drop the month references altogether . . . What do you the rest of you think?

Diz

Dear GS+,

. . . I would like to say that "Working With The Toolbox" is my favorite feature in GS+. I hope that Joe covers the Print Manager and QuickDraw someday, as I am still in the dark about using these managers.

I am very impressed with the quality of GS+ programs. Your company is doing a fantastic job!

Charles C. Bartley
Lake Havasu City, AZ

Thanks Charles! Actually, Joe did cover QuickDraw II in GS+ V3.N1. Check it out.

Diz

Dear GS+,

. . . If you have space on the disk, how about including some TrueType fonts for use with Pointless?

Just about everybody
Planet Earth

No.

Sorry to be so blunt, but our job really isn't to supply TrueType fonts. While I realize that lots of people have Pointless and are desperate to get these fonts, I don't think it's enough people to justify taking up space on our disk—unless the font was an integral part of an article in the magazine. (Like the LaserWriter fonts we provided along with our "LaserWriting" articles a few years back.) Besides, Joe and I would rather spend our time writing programs and articles than cataloging fonts. However, since it is my job to make sure all of you are getting the most out of your computers, I would be interested in publishing articles on where to get TrueType fonts (downloading them, getting them from Macintosh font vendors, etc.) and reviews of TrueType font collections. Is anyone interested in writing these things?

Diz

Dear GS+,

. . . [Please] start a column purely for beginners—make it about 2 pages long and cycle it about every 2 years. The accessories are great—but most people people want some fairly basic items. I believe they want basic productivity software, some informational software, some games, and some good educational software for their kids. I have several friends who have IIGS computers who hardly touch them because the don't understand the basics or have used the computer in very limited ways.

Keep plugging hard disk drives. I does make the IIGS infinitely more "useable." The subliminal suggestions in the "First Impressions Of System 6" article were great. Apple ought to sell the IIGS with a hard disk from the start.

David Newman
Greensboro, NC

A beginner's series is something that I really want to do in future issues of GS+ Magazine. We have had a lot of letters saying that most of the material in GS+ Magazine is over people's heads and we've tried to ease up on that by moving most of the technical content to the GS+ Disk where you don't have to look at it unless you really want to. However, I think we could still do better. But also, for every letter we get from a beginner, we get two or three more from experienced users that think we are presenting low-level junk. It's a tough balance to strike, but we are trying.

Diz

Dear Steve:

. . . How about making an application version of EGOed? It could be very similar to the NDA version except it would have the menu bar at the top of the screen and would allow for multiple windows. EGOed is one of the better text editors I've seen but it's only available as an NDA—it would be very nice if it was also available as a full-fledged application. . .

Jeff Hartkopf
Louisville, CO

Actually, Joe started work on a stand-alone word processor a little over a year ago. However, EGOed really does everything that we need here at the office,

so it was set aside so he could work on other projects. Personally, I prefer having my text editor in an NDA. But, I have been getting quite a few requests for an application version of EGOed, and I was considering doing one until I got hold of the documentation for System 6 and got a whole new string of ideas for EGOed enhancements. I won't rule out an application version of EGOed, but, as I said in last issue's "Writer's Block," I would really like to see some other company make a good IIGS word processor first.

Diz

Dear GS+ Editor:

Thank you for the in-depth review of Pointless that appeared in the March-April issue. It would be unfortunate if your readers use this review as a basis for deciding whether they should purchase Pointless because the review contained out-of-date facts and misleading information.

To set the record straight, we'd like your readers to know that all of the bugs described in the review were fixed in the second release of the software (v1.0.1) that began shipping in early March, several weeks before this review appeared. Most users received this newer version of Pointless, and those who have the earlier version are receiving a free update. Specifically, the following problems were corrected in the new version:

- Pointless will now generate the requested font in all cases—previously problems occurred if a stylized version of the font (such as bold or italic) was generated before the plain style.
- A change was made that eliminates the problem of the AppleWorks GS communications module dropping incoming characters.
- The installer script now copies the Chicago font.
- The "Active" check box no longer appears in the help screen.

The review also misleads the reader by indicating that "Pointless can literally add minutes to the time it takes to open [a document]." This may be true to some extent if you're using numerous fonts and font sizes in a single document. However, in a typical document most people use only a few fonts, which Pointless generates in just a few seconds. Most DTP professionals will tell you that if [you] have more than 4 or 5 typefaces in a

document it will look poorly designed and will distract the reader from the document's content. Beside, many GS users have some type of accelerator that minimizes any delays experienced when generating a lot of fonts.

In closing, Pointless is a significant new system extension that greatly enhances the appearance of type on the screen and in printed documents—this isn't just our opinion, but the opinion of industry-peers who recently awarded Pointless for "Best Innovation" at the Apple II Achievement Awards. Your readers deserve to have accurate and up-to-date information.

We hope that you will print a follow-up that covers the corrections that have been made in the new version. It would be a shame if your readers miss out from using a valuable program that greatly enhances the capabilities of their system.

I've enclosed Pointless v1.0.1 for your reference.

Rob Renstrom
WestCode Software, Inc.
San Diego, CA

Well, it's not every day that an Apple II legend writes me a complaint letter! (Although quasi-legend, Matt Deatherage sends me about one a week.) Seriously though, you have some good points, let me respond to them one by one.

Updates: I have bought three copies of Pointless and registered two of them (one is still unopened). I have yet to receive any notice of an upgrade except for this letter.

Bug fixes: While I was preparing my review, I did call your technical support and I talked to a very helpful person (John was his name, I think) who told me that all of the bugs I mentioned (except for the problem with saving bit-map fonts) were fixed and would be included in v1.0.1 that had just begun shipping. I was told that I would receive a copy of the upgrade within a week or so (plenty of time to beat my publishing deadline). I never received the upgrade until your letter arrived. I freely admit that the review should have included a notice that v1.0.1 was supposed to be shipping and contained fixes for most of the bugs I found. This was an inexcusable oversight on my part. Beyond that, however, our policy is to review software that we actually have in our hands, not promised upgrades.

Time to generate fonts: I do have an accelerator and I was using only four

typefaces on my pages: Bookman, Times, Helvetica and Courier. However, I was using several styles of each of these fonts (bold Bookman, bold-italic Times, italic Times, and bold Helvetica.) That's a total of up to eight different TrueType fonts that Pointless might have to generate for a document, if I hadn't already generated bit-maps for some of them. The documents we do here at GS+ Magazine are a bit complex, but I have to stand by my comments about Pointless's speed. Also, I was a bit surprised to see you fall back on the old "lots of people have accelerators" excuse.

Accurate information: You are right, our readers deserve the most accurate and up-to-date information. And we are trying our best to give it to them. Speaking of accurate information, when I received your letter, I tried to call you at the number on your letterhead to talk to you about your concerns. Unfortunately, the number had been disconnected (I tried it several times, on several different days), so I had to print this reply instead.

In closing, I have received no complaints from users of Pointless (or anyone else) telling me that I was either inaccurate or unfair in my review. (In fact, there are those that thought I was too glowing in my praise.) Furthermore, I have received several letters from individuals that have bought Pointless after reading the review. The only people that I can think of that might not have bought Pointless because of my review are users with LaserWriters (this might change after they read my "TrueType On A LaserWriter" article in this issue), and users without accelerators.

Diz

If you have a question, comment, or criticism about GS+ Magazine, we want to hear it! Due to space limitations, we cannot answer every letter here in GS+ Magazine. If you want a personal reply, please enclose a self-addressed, stamped envelope with your letter. Please address all letters to:

GS+ Letters
P. O. Box 15366
Chattanooga, TN 37415-0366 GS+

TrueType On A LaserWriter

By Steven W. Disbrow

Even though *some* folks couldn't tell from my review, I think Pointless from WestCode Software, Inc. is really great. However, since I couldn't get it to work with my Apple LaserWriter IINT, I was having a hard time justifying its use. Actually, it's not the fault of Pointless, it's just that the LaserWriter Driver won't take advantage of what Pointless can do.

So, reluctantly, I was forced to consider removing Pointless from my already crowded System folder. Before I could do that however, I received an e-mail from contributing editor Mark Raney telling me that he had been able to trick the LaserWriter into printing out some fairly decent renditions of his TrueType fonts. I was intrigued and asked him to send me some printouts so I could see for myself. A week or so later, I opened the envelope from Mark and my jaw hit the floor. The printouts were *beautiful!* I couldn't figure out how he did it, so I asked him.

Basically, he was tricking the LaserWriter Driver into supplying the LaserWriter with a huge (150 points) bit-mapped version of a particular TrueType font, and then using a smaller point size (between 10 and 50 points) of the same font for the body text of his document. The LaserWriter would then take the large bit-map and scale it down to make the smaller point size. Since the large bit-map had so much detail, the scaled-down version looked really great!

The problem, at least on the example sheets Mark sent me, was that you had to put some text in the large point size before the text in the smaller point size. In other words, your document would have to be set up so that the 150 point text gets sent to the printer before *any* of the text at the smaller point sizes! It's easy to see how this could mess up, among other things, page numbering in an ordinary word processor or text editor.

Fortunately, *page layout* programs like GraphicWriter III, Publish It!, and AppleWorks GS, offer several ways around this problem. For instance, you can have text boxes hidden off of the page. More powerful word processors offer a similar solution, in the form of headers, footers, and title pages; but, overall, page layout programs offer the best tools for solving this problem.

For Example . . .

Take a look at Figure 1 on this page. The font used in this figure is the Chicago font that is provided with Pointless. It is not built into the LaserWriter like the other fonts on this page are, but it looks pretty darn good doesn't it?

So, how did I do it? Well, on the left and right master pages of the GraphicWriter III document containing this page, I have a text box containing a 96 point Chicago-font space character. Since this text box is on both master pages, the bit-map for 96 point Chicago is sent to the LaserWriter *before* the text on this page. The LaserWriter then uses this bit-map to produce the 10 point version of Chicago that you see in the figure. That's all there is to it!

Other Considerations

Well, OK, there are a few other things to be considered. However, they are mostly to help streamline the process. For instance, if you are the observant type, you will notice that Mark was using a 150 point font and I am only using a 96 point font. Why? Because that's the largest point size that GraphicWriter III can work with. If I had used a larger font, GraphicWriter III may have crashed. You will need to find out the largest point size that your page layout or word processor supports too. (The Pointless manual has a list of maximum point sizes for some of the more popular word processors and page layout programs.)

So, let's look at what you need to do, step by step, to use your TrueType fonts with the Apple LaserWriter Driver and your Apple LaserWriter or other PostScript laser printer.

Step 1

Determine the maximum point size that the page layout or word processing program can handle and use Pointless to generate a bit-map for that size in your **Fonts** folder.

This is important because large fonts take Pointless a while to generate. Doing this up-front will save lots of time. You will probably want to generate bit-maps for some of the smaller point sizes of each font to save even more time. Also, be sure to include *all* of the font's characters in the bit-maps that you save (by using the "Configure" button in the Pointless window).

Note that you *really* need a hard disk to make this work. Large bit-mapped fonts eat up lots of disk space very quickly!

After you generate all of the point sizes you need, restart your IIGS to make them available to the system.

Step 2

Start up your page layout program (for simplicity's sake, I'm going to refer only to page layout programs, GraphicWriter III in particular, from here on), start up a new document and go to the left-hand master page.

Step 3

Create a new text box and press the space bar a few times to enter some spaces into the box. Now, use Select All to select all of the text in the box. From the Font menu, pick the font you want to use and the largest point size available (in GraphicWriter, you may have to add the font and large point size to the Font menu via the Choose Font item). For example, for this page, I selected the Chicago font at a point size of 96 points.

Step 4

If you have other TrueType fonts that you want to use in the document, repeat step three for each of these fonts. Don't forget to save the file!

Step 5

Select all of the text boxes on the page, copy them and then paste them onto the right-hand master page. Save the file again, just to be careful!

Figure 1

This is an example of Chicago 10 pt
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 0123456789- = \ [] { }
 ! " # \$ % & ' () * + , - . : ;
 < > ? @ [\] ^ _ ` { | } ~
 œ Σ ® ¤ ¥ ¨ ø π à ß ð ð © Δ ° ~... æ Ω ≈ ç √ ∫ μ ≤ ≥ +
 € „ % Æ Ê Ë Ì Ï Ñ Ò Ó Ô Ù Ú Û Ü
 Õ Ö × Ø Ù Ú Û Ü Ý Þ

Step 6

Create the rest of your document the way you normally would, using any of the TrueType fonts that you placed on the master pages. When you are creating your articles, remember to keep the point sizes between one-fourth and one-third the size of the size you used on the master pages. In other words, if you put an 80 point font on the master page, you shouldn't use anything larger than 20 or 22 points on the other pages.

Now *that's* really all there is to it!

Pro's & Cons

For the most part, this is a really easy way for IIGS owners with LaserWriters to finally take advantage of Pointless and the vast catalog of TrueType fonts. However, as with most "hacked-out" solutions, there are a few drawbacks:

First and foremost, this method is only useful with page layout or word processing programs that allow large point sizes and have some way to hide a block of text.

Second, your large point size text *must* come at the beginning of your document and be sent to the LaserWriter before any smaller point-sized text. Without the ability to hide blocks of text, this can be a real pain.

Third, the large point size font must accompany each document you print, each time you print it.

Fourth, since the large point size needs to be at least four times larger than your other

Product Information	
AppleWorks GS v1.1 Retail price: \$299 Typical mail-order price: \$199 Claris Corporation 5201 Patrick Henry Dr. P. O. Box 58168 Santa Clara, CA 95052-8168 (408) 727-8227	Pointless Programmed by Alan L. Bird Retail price: \$69 Typical mail-order price: \$49 WestCode Software, Inc. 15050 Avenue of Science, Suite 112 San Diego, CA 92128 (619) 679-9200 Information & Support
GraphicWriter III v1.1 Programmed by Gary Crandall Retail price: \$149 Typical mail-order price: \$89.95 Seven Hills Software, Inc. 2310 Oxford Rd. Tallahassee, FL 32304-3930 (904) 575-0566 Orders and Information	Publish-It! 4 Retail price: \$149 Typical mail-order price: \$90 Timeworks, Inc. 625 Academy Dr. Northbrook, IL 60062 (708) 559-1300

point sizes to get a really good appearance on paper, you are restricted to fairly small point sizes in the body of your text.

Fifth, printing complex documents with lots of fonts and point sizes can be very slow on a LaserWriter. (Although it's still much faster than an ImageWriter!) As you might expect, this method can add considerably to printing time.

Finally, as mentioned before, large fonts take up lots of disk space.

In Conclusion

If you are a LaserWriter owner that had pretty much given up on Pointless, using this little trick is a fairly easy way to get

on the TrueType bandwagon. If you need a bit more background information on how all of this actually works, be sure to check out the articles: "How Fonts Work," and "How Printing Works" (both by Matt Deatherage) in *GS+* V3.N2 and V3.N3 respectively. If, after reading all of that, you are still a bit confused, don't worry. On this issue's *GS+* Disk, you will find a GraphicWriter III v1.1 document and an AppleWorks GS v1.1 page layout document giving you concrete examples of how to print out a block of text in the Chicago font on your LaserWriter. After you play with those, adapting the technique to your own needs should be simple!
GS+

How To Get System 6

Everyone should have a copy of System 6. Fortunately, we have a license to distribute it to our magazine-and-disk subscribers as a part of their subscription. Unfortunately, we can't afford to mail all five of the disks that System 6 takes up to every magazine-and-disk subscriber. However, we still want to make it easy for you to get System 6. So, if you are a subscriber to *GS+* Magazine with the companion *GS+* Disk (sorry, but we can not distribute System 6 to our magazine-only subscribers), send us the following items and we will send you System 6:

1) Five (5) *blank and formatted*, 3.5-inch diskettes. We are asking for "blank and formatted" disks because formatting takes time that we don't have, and its a great way to tell if a disk is good before you

send it to us. *If you send us a bad disk, we aren't going to replace it.*

2) A *self-addressed* return disk mailer with enough postage on it to mail the five disks back to you. *If you don't provide a postage-paid, self-addressed return mailer, your disks will be considered "gifts" and will be used for backups.*

3) That's all. Don't send any money. We don't want any money for this.

How Else Can You Get System 6?

If you are a magazine-only subscriber, here are some other ways to get System 6.

Your Apple dealer. Bug them until they get it in for you. The retail price is \$39, but that includes manuals. The part

number is #A0077LL/A. For the name of your local Apple dealer, call (800) 538-9696.

Your user group. Bug them until they get it in. Take your own disks and they shouldn't charge you anything for it. If you need to know where your local user group is, call the Apple User Group Connection at (800) 538-9696 x500.

Resource Central. You won't have to bug them, they have it in stock. Call them at (913) 469-6502 and order item number DA-006. They want \$24 for it.

And, of course, if you have a modem, you can download it from your favorite online service. The total download time is about 5 hours.
GS+

Using Archiver

by Josef W. Wankerl

You really need a hard drive to get the most out of System 6. And to get the most out of your hard drive, you need to keep backups of essential data. Fortunately, System 6 comes with a backup utility, Archiver. Archiver allows you to back up and restore an entire volume, or selected files from a volume. Since System 6 doesn't come with any actual user documentation, we thought a little tutorial on how to actually use Archiver might be useful. If the response to this article is good, we will do other articles on other parts of the System 6 in future issues of *GS+* Magazine. But enough small talk, let's dive right in and see what Archiver can do!

Three Choices

When you first start up Archiver, you will be presented with a small window containing three radio buttons. These buttons are labeled "Back up entire volume," "Back up files," and "Restore backup." You click on one of these buttons and then press return to tell Archiver what you want to do. So, moving down the list of choices, let's look at each one.

Back Up Entire Volume

When performing a volume backup, Archiver will copy every single block of the source volume to a *backup set*. (A backup set is a file or set of disks that will hold the backed up files or volume.) Optionally, you can set a preference so Archiver will only copy used blocks, but this preference only applies to HFS and ProDOS volumes. While I'm on the subject of different file systems, I should note that, unfortunately, volume backups can not be made from an AppleShare volume. Also, you could probably use Archiver to back up your old DOS 3.3 or Apple Pascal disks (if you have those FSTs installed) but, since these FSTs are read only, you probably wouldn't be able to restore it. To make up for this, Archiver lets you compress your volume backups so that they take up less space on the backup set than on the original volume. This is very handy if you are backing up a large volume.

After you select the "Back up entire volume," you will now be taken to the "Volume Backup" window. The Volume Backup window lets you select which volume to back up (you proceed to the next device by clicking on the "Volume" button) and where the backup is to be stored. Normally, volume backups are made to devices, not files; however,

Archiver will let you choose either a file or a device to hold the backup set. You will most likely want to back up to a removable device such as a 3.5-inch drive since you can store the backup on multiple disks. However, if you have enough disk space, you may wish to write the backup out to a file on your hard drive.

To select a *device* to back up to (i.e. a 3.5-inch drive), make sure that the "Device" radio button is selected, then use the "Device" button to move through your online devices until the device you want to back up to appears. If the device is a removable device, you can click on the "Identify" button to show you the name of the volume in the device.

To select a *file* to back up to, click on the "File" radio button, and then click on the "File..." button. This will bring up a Standard File dialog which will let you specify the name of the backup file you will make.

Once you have selected the volume to back up and the destination to back up to (either a device or a file) then you can proceed to back up the volume by clicking on the "Back Up..." button.

After you click the "Back Up..." button, the "Entire Volume Backup" window appears and asks you to enter a comment for the backup. Once you enter the backup comment, you click on the "Begin" button to actually start the back up process. From there on out you just sit back and let Archiver do its job. You will be asked to enter the next piece of removable media if you're backing up to a removable device and the current disk is full.

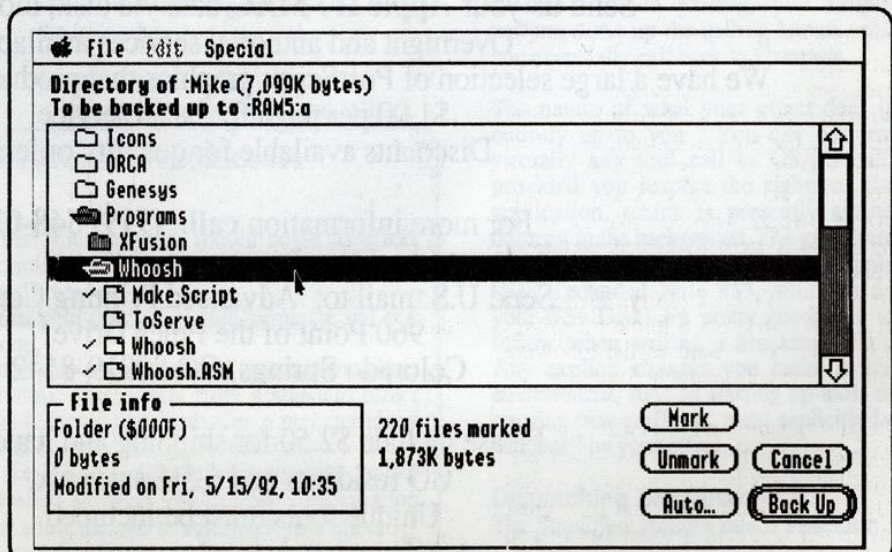
Back Up Files

When performing a file backup, Archiver will back up only the files that you select from the source volume. File backups can be made from any volume, including an AppleShare volume. Unfortunately, file backups can *not* be compressed like volume backups can.

After you select the "Back up files" radio button, you will be taken to the "Selected Files Backup" window. There is no difference between the Selected Files Backup window and the Volume Backup window except that the "Back Up..." button is now named "Files..." Once you have selected the volume to back up from and the destination to back up to (either a device or a file) you can proceed to select the files you want to back up by clicking on the "Files..." button.

When you click the "Files..." button, you are presented with a dialog asking you if you want to use a saved file list. A saved file list is just that—a saved list of files that you want to back up. If you have a saved file list you want to use, you can load it in and it will tell Archiver exactly which files you want to back up. If you don't have a saved file list, a window appears which lets you select the files you want to back up. Initially, any files that haven't been previously backed up are selected. You can mark additional files and folders for back up by first selecting the file or folder from the list and clicking on the "Mark" button.

An alternate method of marking files is to click on the "Auto..." button. When you click on this button you will be presented with a dialog allowing you to specify



criteria to mark or unmark files. You can select files based on the file name (file name starts with, ends with, or contains certain characters), file type, creation date, modification date, or a combination of these criteria. Once you have all the files and folders you want to back up marked, you click on the "Back Up..." button to proceed to back up the files. If you wish to save the marked files in a saved file list, choose the "Save file list" menu item from the "File" menu. This is helpful if you constantly back up the same set of files.

After you click the "Back Up..." button, the "Selected Files Backup" window appears (which looks exactly like the "Entire Volume Backup" window) and asks you to enter a comment for the backup. Once you enter the backup comment, you click on the "Begin" button to actually start the back up process. From there on out you just sit back and let Archiver do its job. You will be asked to enter the next piece of removable media if you're backing up to a removable device and the current disk is full.

Restore Backup

After you get your files saved in a backup set, you need some way to restore them if the unspeakable should happen to your original files. To restore a backup, you simply select the "Restore backup" radio button from Archiver's initial dialog and then click on the "OK" button. You will then be shown the "Restore" window. The Restore window lets you select which backup set to restore from and where the backup is to be restored to.

If you have made a backup to a device, you need to click on the "Device" radio button and then click on the "Device" button to advance to the device you will be restoring the backup from. If you have made a backup to a file, you need to click on the "File" radio button and then click on the "File..." button to bring up a Standard File dialog which will let you choose which backup file you want to restore from.

Once you have selected the backup set to restore from, you need to tell Archiver where to restore the backup to. If the backup was a volume backup, a "Volume" button appears letting you cycle through your online volumes until you have chosen the volume you wish to restore to. Be careful! Restoring a volume backup will erase the target volume!

If the backup was a file backup, a "Folder..." button appears which will display a Standard File dialog allowing you to choose a folder to restore the files to. You can not restore a file backup to the root directory of a volume, but files can be easily moved out of the restore folder to the root directory (using the Finder) once the backup is restored.

Once you've chosen the backup set to restore from and the destination to restore to, you click the "Restore..." button, if the backup set is a volume backup, to begin the restore process. If the backup set is a file backup, click the "Files..." button to select the files you wish to restore from the backup set.

If the backup set is a volume backup, after you click the "Restore..." button, another "Restore" window appears. You click on the "Begin" button to actually start the restore process. From there on out you just sit back and let Archiver do its job. You will be prompted to enter the next piece of removable media, if you've backed up to a removable device and the current disk has been completely restored from.

If the backup set is a file backup, after you click the "Files..." button, a window appears which lets you select the files you want to restore. This window operates exactly the same way as the window that lets you select files to back up. Once you have all the files and folders you want to restore marked, you click on the "Restore" button to proceed to restore the files. After you click on the "Restore" button, the "Restore" window appears. You click on the "Begin" button to actually start the restore process. From there on out you just sit back and let Archiver do its job. You will be prompted to enter the next piece of removable media, if you've backed up to a removable device and the current disk has been completely restored from.

Easy Enough!

That's basically all there is to using Archiver! Remember though, simply *having* a backup program is not enough to protect your data! You have to *use* it, and use it *regularly*. Apple has done us all a favor by providing Archiver with System 6, but the only way to benefit from it is to actually use it. **GS+**

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Writing Phantasm Screen Blankers

By D. Proni

In late 1991, QLabs began shipping Signature GS—a collection of fun, utilitarian Control Panels for the Apple IIGS (see review in *GS+ V3.N3*). The objective of Signature GS was to allow users to customize their IIGS according to their own personalities and preferences... hence to place their own “signatures” on the machines they loved to use. Since then, Signature GS has been greeted with much enthusiasm and success, proving that Apple IIGS software *can* be both popular and profitable.

One of the modules in Signature GS is called *Phantasm*, an extensible screen saver that lets you choose from a variety of different blanking effects, as well as change the parameters of each effect. It's no secret that Phantasm was inspired by After Dark on the Macintosh, but it was created more to prove that this type of software could be done on a IIGS rather than to be a money maker.

One of the best features of Phantasm is the ability to install additional blanking effects, providing more variety for the user as well as allowing creative programmers to write their own. However, QLabs did not release specifications on how to write additional blanking effects! Many people have complained about this apparent oversight, stating that it was the biggest drawback of the entire package. While there were good reasons to keep these specs a secret, the time is now right to let the cat out of the bag! The purpose of this article (and the sample source code on your *GS+ Disk*) is to introduce you to the inner workings of Phantasm and show you how to write your own Phantasm blankers. So, let's go write some effects!

How Does It Work?

When Phantasm determines the system needs to go to sleep, it loads your effect into memory and calls the first instruction

of your code with a JSL. The system is in the following state at this point:

- Full native mode with 16 bit registers.
- Databank register and stack pointer undefined.
- User ID of your effect in the Accumulator.
- *ActionCode* and *workspace pointer* parameters passed on the stack.

Furthermore, Phantasm has performed the following prior to calling your code:

- The screen border is set to black.
- The menu bar is hidden.
- The current resolution, color tables, and all scan line control bytes (SCBs) are saved.
- A grafPort the size of the entire screen is created and made current.

When your code gets control, it should immediately dispatch an appropriate function based on the *ActionCode* parameter. The *ActionCode* tells your effect exactly what Phantasm wants it to do. (I'll discuss the *workspace pointer* in a moment.)

When you are done handling an *ActionCode*, you return to Phantasm via a simple RTL. It is important that the 6 bytes of parameters on the stack be cleaned up before exiting. If you code your effect in a high-level language, you need not worry about these details, as the compiler generates code that does this automatically.

When Phantasm regains control, it does the following:

- Restores the original resolution, color tables, and SCBs.

- Disposes of the grafPort it created for your effect.
- Restores the original border color.
- Shows the menu bar.
- Forces the desktop to be redrawn, restoring the original application's display.

Dispatching ActionCodes

When your effect is called, an *ActionCode* is passed as parameter. There are four *ActionCodes* currently defined. These are shown in Figure 1.

The first thing your code should do when it gets control is set the databank register to point to your global data. This can be done with a PHK, PLB sequence in assembly or with the databank or setbank directives in C and Pascal respectively. Your code should then dispatch one of four functions based on the *ActionCode* that is passed to it by Phantasm.

Dispatching PlayEffect

When the *PlayEffect* *ActionCode* is received, your code should first set a global halt variable (it is called “haltFlag” in the example source code) to FALSE and then dispatch the functions that actually perform the blanking effect. You should then iterate through a main loop, continuously updating your effect on the screen. During each iteration of the loop, you should make at least one call to *SystemTask*. This is critical since failing to do so will keep your effect active perpetually. Your loop should terminate when it detects the global halt variable in the TRUE state (it doesn't have to worry how it became TRUE). When exiting, you simply perform JSLS up the calling branch until you eventually exit back to Phantasm.

The nature of what your effect does is entirely up to you. You can perform virtually any tool call or GS/OS call, provided you respect the rights of the application, which is presently sitting dormant in the background. The guidelines for New Desk Accessories (see Apple IIGS Technical Note #53, which is on your *GS+ Disk*) are pretty good ones to follow when writing a blanking effect. Any explicit changes you make to the environment, such as starting up tools or creating new grafPorts, must explicitly be “undone” by your effect.

Dispatching StopEffect

The *StopEffect* *ActionCode* is Phantasm's

Figure 1 - Currently Defined Phantasm ActionCodes

ActionCode	Name	Action
1	<i>PlayEffect</i>	Indicates that your program should begin its effect loop, performing whatever visual effect you want until a <i>StopEffect</i> is received.
2	<i>StopEffect</i>	Indicates that your program should terminate and exit its effect loop.
3	<i>DemoEffect</i>	Indicates that your program should enter a demo effect loop (optional). This differs from a standard effect loop in that it should terminate after a predetermined amount of time, regardless of user activity.
4	<i>Configure</i>	Optional, this gives your program complete control over the system allowing you to open configuration dialogs that allow the user to customize your effect.

way of telling your effect to stop what it is doing. When this code is received, you should set your global halt variable to TRUE and then exit normally. The *PlayEffect* (or *DemoEffect*) handler should be checking this variable constantly and will eventually notice the change signaling that it is time to quit.

Dispatching *DemoEffect*

The *DemoEffect* ActionCode indicates that your code should perform a quick demo of what it is capable of. How you treat the presentation of your demo is entirely up to you, but you should limit it to about 30 seconds. Basically, your code will perform the same actions as your *PlayEffect* handler, calling *SystemTask* and checking your global halt flag. The only difference is that after a fixed number of iterations, your *DemoEffect* handler should exit as if the global halt variable were set to TRUE.

Dispatching *Configure*

The *Configure* ActionCode indicates that your effect should open a configuration dialog that presents the user with several

modifiable attributes that affect the way your effect is displayed. Handling the *Configure* ActionCode is entirely optional, although it is highly recommended that you provide the user with a means to alter your effect.

When presenting the user with a configuration dialog, the system is completely yours and you don't have to worry about handling *PlayEffect*, *StopEffect*, or *DemoEffect* codes. However, keep the previously mentioned guidelines for NDAs in mind when writing this code. Also keep in mind that you can be in either 320 or 640 mode when called, so you will have to display your windows appropriately.

Saving Configurations

Phantasm provides an automatic mechanism for storing configuration data for your effect. Recall that when your effect is first called, it receives a pointer to a workspace buffer. This buffer is a 64-byte block of memory that Phantasm provides for your effect's, and *only* your effect's use. After your effect exits, the

contents of this buffer are saved in Phantasm's resource fork, preserving them until your effect is called again.

When your effect is initially called, the workspace buffer is pre-initialized with zeros. You can rely on this fact to determine if the workspace contains valid attributes. You can use the first byte of the workspace, for instance, as a flag to determine if you need to initialize your attributes to default values or use the values stored in the workspace. What you do with this workspace is entirely up to you!

The workspace buffer has been allocated by the Memory Manager and can be resized if you wish. You can obtain its handle via a *FindHandle* call, then use *SetHandleSize* to set your workspace to any size you need. Once you resize your workspace, its new size is permanently recorded until you change it again. You can use this technique to size the workspace to absolutely anything you want. You could even store an entire 32K SHR image if you so choose.

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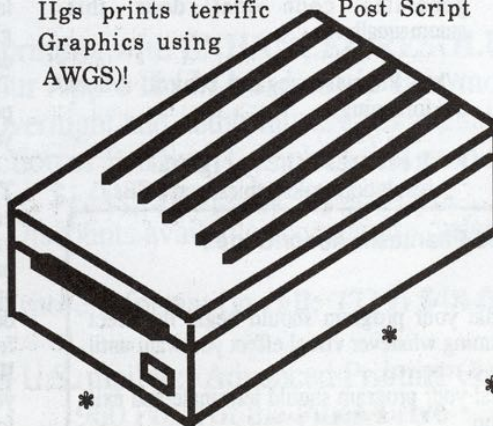
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Putting It All Together

Now that you understand how effects work, it's time to write your own. As you've probably figured out, you can use virtually any language that generates native code. This includes Assembly, C, or Pascal. Remember that Phantasm calls the first instruction of your program so this *must* be the entry point. If you are using ORCA/C or ORCA/Pascal, the entry point usually consists of some environment initialization followed by a call to your "main" function. You don't want this! You want the very first function of your program to be the first one to get control. To circumvent this additional setup code you will have to either delete the **.ROOT** object file before you link or use the "no`root`" directive. Included with the source code on your *GS+* Disk is a sample build script to show how to delete the **.ROOT** file, and your ORCA manual will have information on the `noroot` directive.

After you link your program, you will have an EXE file that can be installed into Phantasm. Simply invoke the Phantasm Control Panel and click the "Install..." button. This opens a standard file dialog that allows you to choose what file you wish to add as an effect. You need to be a little bit careful with this since there is no way to differentiate (by file type) between the effect you just compiled and any other EXE files that you have lying around! Just make sure that the file you select is indeed the effect that you've just compiled and linked.

Miscellaneous Points

Now that the basics are out of the way, here are some points to keep in mind:

- Setup and restore your graphic environments. When Phantasm calls your effect, it gives you an environment that is adequate to draw in. The "Scramble" and "Slimy Slugs" effects that come with

Phantasm use this default environment. If you want to do something more exotic, such as change resolutions and use custom color tables (as "Magic Molecules" does), you must create a new `grafPort` to draw in. The sample program that comes with this article shows how to set up a new environment.

- Make sure the appropriate tools are started up. There are some tools that are obviously going to be started up since the primary application was a desktop application (Phantasm won't interrupt non-desktop applications). However, some tools such as SANE may not be started up if your effect needs them. This is something for high-level programmers to watch out for. While you may be used to declaring and using float and real variables, the compiler was starting up SANE automatically for you. And guess where it was doing that... inside the **.ROOT** file that gets deleted before you link your effect! The rule here is that if you use floating point numbers, you must start up SANE (but only if the application hasn't done so).
- Call `SystemTask` frequently. It is your only means of escape! If your main loop takes 10 seconds to execute, then you will have to call `SystemTask` inside of the loop frequently.

If you are performing some ultra-smooth animations, you may notice that `SystemTask` calls cause your animation to "pulse." This is because, although quick, `SystemTask` has a noticeable amount of overhead that can affect your animation. In such cases, you may want to forego calling `SystemTask` altogether and check for user activity yourself. You can do this far quicker than Phantasm can via `SystemTask`.

Product Information

Signature GS
Programmed by D. Proni

Retail price: \$29.95

QLabs
20200 East Mile Road
St. Clair Shores, MI 48080
Orders: (800) 443-6697

The disadvantage of bypassing the `SystemTask` mechanism is that Phantasm will detect user events in ways that your code might not. So unless absolutely necessary, you should always use the `SystemTask` method of detecting user activity.

Now What?

Now that the protocol for writing Phantasm blanking effects has been made public, what should you do next? Well, it's time to put on your imagination caps and go write some out-of-this-world effects! The seven effects provided with the basic Signature GS package just barely touch the surface of what can be done. Intricate animations (and even sound effects) can be put together that would make even the most die-hard Mac and PC users envious. To get you started, you will find on your *GS+* Disk a simple Phantasm blanker along with its complete C source code. By studying this code, and this article, you should find it easy to start on your own blanking effect. (See "How To Use Your *GS+* Disk" for more information on this source code.)

Writing a Phantasm blanking effect is fun, simple and probably one of the most rewarding programming experiences you can encounter on the IIGS. With QLABS actively committed to supporting this product and providing future updates and revisions, "homegrown" blanking effects are sure to become a fad that doesn't go away... **GS+**

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Shuffle v2.0

by Josef W. Wankerl

It's Apple's windowing system that makes the Apple IIGS a powerful, but easy-to-use, computer. Sometimes, however, it can be a bit frustrating when one window is hidden behind another. Having to take your hands off of the keyboard to use the mouse to switch windows can be a royal pain, not to mention a waste of time. Shuffle v2.0 takes care of this problem.

Installing Shuffle

To install Shuffle, refer to "How To Use Your GS+ Disk" elsewhere in this issue. Shuffle v2.0 will work under both System Software v5.0.4 and v6.0, but you won't see the nifty boot icon animation if you are using System v5.0.4.

Using Shuffle

Shuffle is a permanent initialization file which lets you cycle through the windows on your screen with the press of a few keys. Shuffle v2.0 can also display a list of all the windows on the screen and allow you to choose one to bring to the front. In other words, with Shuffle v2.0 installed, all of your IIGS desktop software will have the equivalent of a built-in Windows menu!

To see Shuffle in action, first install it, then go to the Finder (Shuffle works with all desktop software, we are just using the Finder as an example), and open up a couple of windows on the desktop. Then, press and hold the Command (also known as Open-Apple), option, and shift keys at the same time. It may take a moment for the computer to recognize the keys, so be sure to hold all of the keys down until you see the next window on the screen come to the front. If you continue to hold the keys down, Shuffle will begin to cycle

through all of the windows that you have open. When the window you want to work with becomes active, release the keys. That's all there is to it. If you want to get fancy, you can use the caps lock key to control the direction of the window shuffling. If the caps lock key is up, the front window is sent to the back. If the caps lock key is down, the back window is brought to the front.

Shuffle v2.0 also has the ability to display a list of all the windows on the screen. For this list to be available, there must be at least three windows on the screen. If less than three windows are open, Shuffle will shuffle the windows on the screen instead bringing up the window selection list. To get the list of windows, you must press and hold the Command, option, shift, and control keys at the same time. Be careful with this sequence! If you press Command, option, and shift before you press control, Shuffle will think you want to "shuffle" the windows on the screen instead of bringing up the selection list. Just remember to be sure that the control key is one of the first three keys you press in this sequence. Once the selection list appears, simply select the desired window from the list by either double-clicking on it or selecting it and clicking on the Okay button or by using the up and down arrow keys and pressing the return key. The selected window will then be brought to the front.

It is important to note that if the front window is an alert window, or other immovable dialog window, Shuffle will not shuffle any windows or show you the window list. You will have to dismiss the dialog window first.

Shuffling Source Code

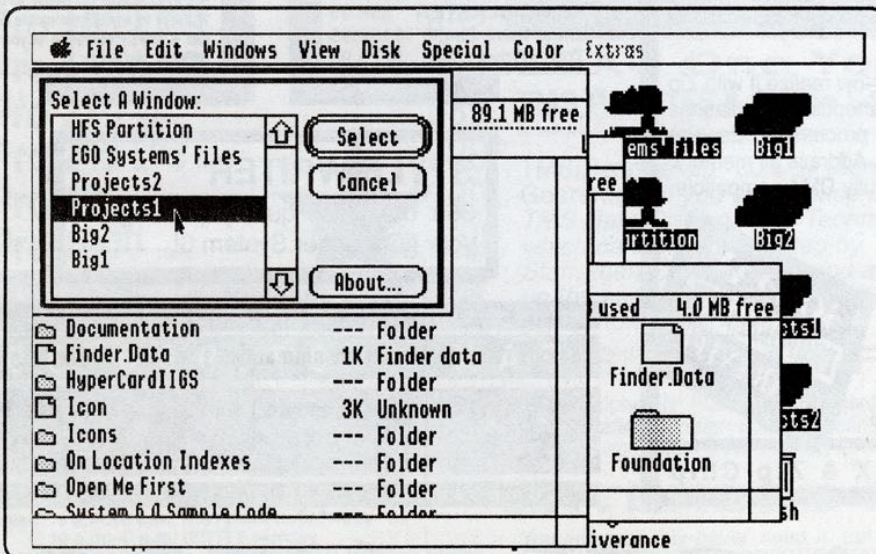
Shuffle v2.0 started out simply as a way for me to test the new ShowBootInfo call under System Software v6.0. I already had the Shuffle code (from Shuffle v1.0 in GS+ V2.N1), and I just added the ShowBootInfo call. I wanted to release the code to show everyone else how to do it, but re-releasing Shuffle without any functional changes was a bit silly. So the idea finally came around to provide a list of windows to select from. Shuffle v2.0 was born.

6.0? Or Not 6.0?

To check for System Software v6.0, Shuffle makes the QDVersion call to find out the version of QuickDraw II. If the version is less than 3.7 then the new System 6 calls are unavailable. Once it has been determined that Shuffle is running under System 6, the ShowBootInfo call is made to display the boot icon. ShowBootInfo takes two pointers for its parameters. The first pointer is to a version string to display on the text screen. (If you press a key when your IIGS first starts up, you will go to a text screen showing progress information instead of the normal "Welcome to the IIGS" graphics screen.) If you don't want your program to display a string on this screen, pass a NIL for this parameter.

The second pointer is to an icon to display on the familiar graphics boot screen. If bit 31 of this pointer is set, the icon will be drawn on top of the previously drawn icon. This is useful if you want to animate an icon, in the case of Shuffle, or if you want to draw a big "X" over an icon, in the case of a system extension not installing itself. Shuffle animates its boot icon by calling ShowBootInfo for each different frame of animation.

In between each ShowBootInfo call, some time must elapse in order for humans to recognize the new frame. To take up time, the System 6 WaitUntil call is issued. The WaitUntil call takes an "anchor point" (a reference from when the last WaitUntil call was made if WaitUntil must be called a lot of times in a row in order to sequence an overall time) and the time required to wait. WaitUntil returns a new anchor point to use in the next sequential WaitUntil call. Shuffle always uses zero as the anchor point since there is not an overall time required for the animation to take place—just an overall time to wait between frames.



Finally, after all animation is done (or if System Software v6.0 is unavailable) the AddToRunQ call is made to install the "listening" procedure that shuffle uses to check for keystrokes, as described in the "Shuffle" article in *GS+ V2.N1*.

Shuffling Windows

Once the modifier keys for a shuffle sequence have been detected, Shuffle checks to make sure that it is possible to shuffle a window. The correct setup to shuffle a window is that there are two or more windows on the screen and the front window is not an alert window. If the front window is not an alert window then Shuffle knows it's safe to switch the order of the windows on the desktop. The caps lock modifier key is checked, and if the key is up, Shuffle issues the SendBehind call to place the front window behind all the other windows. If

the caps lock key is down, Shuffle traverses the list of windows until it finds the bottommost window, then the SendBehind call is issued to place the bottommost window in front of all the other windows.

Selecting Windows

Once the modifier keys to bring up the window list have been detected, Shuffle checks to make sure that it is possible to shuffle a window. If the front window is not an alert window then Shuffle counts the number of visible windows on the screen that have titles. If there are less than three visible windows with titles, control is transferred to the normal shuffle procedure. If there are three or more visible windows with titles, the List Manager is started (if it wasn't already), memory for the list member record is obtained, and the member record

containing the list of visible window titles is built. Next the current grafPort is saved, the selection window is created, the grafPort is set to the new window, and the first item in the list control is selected. An event loop is then entered to handle the events for the window. If the select button is clicked on, the selected window is brought to the front using the BringToFront call. Finally, the selection window is closed, and the old grafPort is restored.

Although this program seems small and simple, it is one of the most useful utilities I've used. It makes the Finder and AppleWorks GS (among others) much more manageable! As usual, if you find a problem with this program, fill out the problem form supplied on your *GS+* Disk and let us know about it. **GS+**

Cool Cursor v1.0.1

by Josef W. Wankerl

Cursors, Icons, And Bugs—Oh My!

A new version of the Cool Cursor Control Panel (affectionately called C.C.C.P. and originally published in *GS+ V3.N3*), a wait cursor animator, is on your *GS+* Disk. Version 1.0.1 has changed the icon you see when your system boots (and the icon you see in the Control Panels NDA) to be prettier, and a bug has been fixed.

If all you want to do is to install the latest C.C.C.P., why bother reading any more? Slap in your backup *GS+* Disk, run the Installer, and choose either "Cool Cursor" to install the entire C.C.C.P. system, or choose "Cool Cursor Update" to only install the new version of C.C.C.P. without installing any cursors. If you're running on a floppy-based system (which is not recommended for C.C.C.P.) then you will most likely want to use the "Small Cool Cursor" installer script which doesn't install every cursor, just some of the best ones.

Icons

Well let's get the easy stuff out of the way first. The new C.C.C.P. icon comes courtesy of Jeff Hartkopf of Louisville, Colorado. His original design had a different background color and included the arrow cursor instead of the Groovy Spinner. I took the liberty of changing things around so the icon could be animated at boot time. Animation of the icon is done the same way as described in "Shuffle v2.0".

Bugs

As some of you know, there was a very odd bug in C.C.C.P. v1.0 that prevented the

wait cursors from animating on some systems. This version of C.C.C.P. should fix that. Having said that, let me first thank all of you who bothered to fill out a problem form and send it in. We can't find these bugs without your help, and filling out and sending in the problem form is the best way to help us. Secondly, let me thank all of you who beta-tested the new version. Hmm . . . those two lists look remarkably similar. Well anyhow, here's what was going on: The QuickDraw II Auxiliary StartUp and ShutDown code was incrementing and decrementing the "started" flag instead of actually setting it. This meant that the started flag could be in a state other than 0 or 1 depending on whether the ShutDown procedure was called more often than the StartUp code, or vice versa. The new StartUp and ShutDown patches explicitly set this flag to 0 or 1.

CCCP Templates

I needed a way to view the variable block of C.C.C.P. to make sure everything was going the way it should. So, to aid in this, I created a template file which can be used from either GSbug or Nifty List (with the Templates external module—present in Nifty List v3.3 and later). In order to find where the variable block starts, I used Nifty List's "-m" command to show me all the messages in the message center. Then I used the ";h" command to take a look at the C.C.C.P. message. The four bytes after the end of the message name is a pointer to the variable block. So then all I needed to do was type xxxxxx\temp "cccp" to display the variable block from Nifty List. From GSbug, I would type _cccp xxxxxx. Of course, substitute the three-

byte pointer for xxxxxx (the fourth byte will always be zero).

Different Rectangles

Another minor change to C.C.C.P. is the way the reboot control is displayed. The reboot control displays a message to reboot if C.C.C.P. was not installed (because the C.C.C.P. message was not found in the message center). Previously, the control panel window remained the same size when the control was created. C.C.C.P. v1.0.1 uses the rectangle message to resize the control panel window if the Toolbox patch code was not installed in order to display the reboot control. (The rectangle message is sent before the create message.) If the patch code has *not* been installed, the rectangle is changed to accommodate the reboot control, otherwise it is left alone.

Although this version fixed the problems for people who sent in problem forms, it might not have fixed everything. I know for a fact that more people complained about C.C.C.P. not working than we have problem forms for. So, if you have a problem with this version of C.C.C.P., send in a problem form to let me know! **GS+**

What Is Cool Cursor?

Cool Cursor is a Control Panel, that allows you to replace the "watch cursor" with an animation. To use Cool Cursor, you *must* install it on a System Software v5.0.4 (or later) startup disk with at least 35K of free space. For more information on installing and using Cool Cursor, see "How To Use Your *GS+* Disk" in this issue and the file *CCCP.Docs* on your *GS+* Disk.

System 6 is great, but those annoying "whooshes" really get on my nerves. So I decided to do something about it. Whoosh is a Control Panel that intercepts all calls to the new WhooshRect call and ignores them. Also, instead of simply ignoring the WhooshRect calls, Whoosh can make sure that all the WhooshRect calls are silent (i.e. the whooshing sounds are not played). Or, if you like, you can have the whooshing sounds, but not the rectangles.

To use Whoosh, use the Installer to install Whoosh on your System 6 boot disk (Whoosh will *not* work without System 6 or later!), reboot, and choose Whoosh from the Control Panels NDA. The Whoosh window will appear and you can toggle the whooshing rectangles and sounds with the two check boxes. What could be simpler?

Perhaps Writing The Code?

Well, almost. A lot of the Whoosh code is ripped off from Cool Cursor. Whoosh simply installs a Toolbox patch to QuickDraw II Auxiliary to get control whenever the WhooshRect call is made. If both whooshing and sounds are active, control gets passed straight through to the normal WhooshRect routine. If whooshing is active, but sounds are inactive, the "no sounds" bit is set in the WhooshRect stack parameters, then control gets passed straight through to the normal WhooshRect routine. If whooshing is inactive, but sounds are active, the "whooshing direction" bit is checked to see which direction the whoosh is going (big to small or small to big) and the appropriate SysBeep2 call is made to play the sound. The normal WhooshRect routine is never called in this case. Finally, if both whooshing and sounds are inactive,

control returns to the caller without any action taking place.

Removing Parameters

If the whooshing rectangles are turned off, the normal WhooshRect routine is never called. In this case, the parameters for the WhooshRect call must be stripped off the stack. Luckily there are routines built into the system that tool sets can use to do this dirty work. These routines are called ToStrip and ToBusyStrip, and they are documented in Technical Note #73 as well as in the System 6 Toolbox ERS. (This technical note is on your GS+ Disk.) Basically, you load the x register with the error code to return, load the y register with the number of bytes to strip off the stack, and then jump to the routine you want. The routines will remove y number of bytes from the stack after the bottom six bytes. This is done because when a tool set function gets control, there are two long return addresses on the stack (six bytes) and they need to be preserved. The parameters come immediately after the return addresses. The difference between these routines is that ToBusyStrip decrements the system busy flag before removing the bytes from the stack, and ToStrip does not.

Booting

When Whoosh receives the boot message, the first thing that happens is the whooshing rectangle animation you see on the boot screen. The simple whooshing animation sequence at boot time is animated as described in the "Shuffle v2.0" article elsewhere in this issue. Next, the patch code for QuickDraw II Auxiliary is loaded.

With System 6.0, loading the code is much easier than before. First, the standard code

resource converter is logged in by using the GetCodeResConverter and ResourceConverter calls, then the code is loaded with a LoadResource call, the resource is detached so the Resource Manager no longer owns it, and finally the memory ID of the patch code is changed so it will not disappear when the boot message is through.

Prior to System 6 you had to load in the patch code (without using the standard code resource converter) and then call InitialLoad2 to assign the new memory ID. With System 6, you can just use the new SetHandleID call to change the memory ID. Once the patch code is loaded, a message is posted to the message center to let the Whoosh Control Panel know where the patch code is. Finally, the whooshing and sounds flags are set according to the the check boxes, and QuickDraw II Auxiliary is patched. For more information on patching a tool set, see the "Cool Cursor" article in GS+ V3.N3.

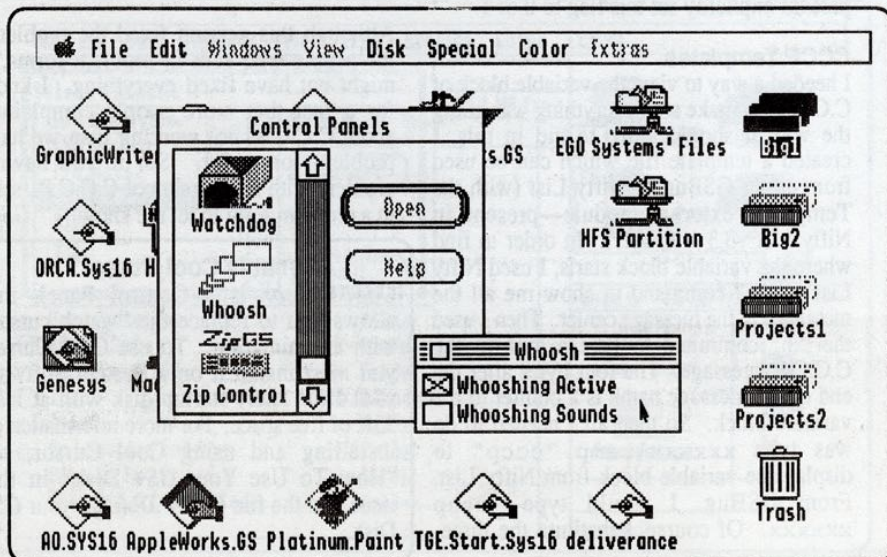
Creating

When Whoosh receives the create message, the first thing it does is to check to see if the patch code has been installed. If the patch code has been installed then there will be a message in the message center. Using the new GetMessageHandle call, Whoosh can easily determine if the message is there or not without going through the hassle of making two calls (one to MessageByName and then one to MessageCenter). If the message is not present, the reboot control is created and the create code is done. (The reboot control is a simple static text control that informs the user that they must reboot the system in order to use Whoosh.) If the message is present, the pointer to the patch code is taken from the message and the normal controls are created.

Different Rectangles

Whoosh makes use of the rectangle message to change the size of the Control Panel window in order to display the reboot control. The rectangle message is sent before the create message. If the patch code has not been installed, the rectangle size is changed to accommodate the reboot control, otherwise the rectangle is left alone.

Whoosh may seem trivial, but it does give some good examples of System 6 calls that you will probably make frequent use of if you decide to program a Control Panel under System 6. If you find a problem, let me know about it by using the problem form on your GS+ Disk. GS+



Rebuild Desktop

by Josef W. Wankerl

One of the keenest new features in the System 6 Finder is the rBundle resource structure which ties applications to their data files. What this means is that you no longer have to edit your icon files to point to their application. (Your old Finder icons will still work fine though.) The Finder figures out where the application is automatically and keeps the information in a desktop database, even if you move the application to a different folder!

How does the Finder do this? Well, in Finder v6.0 there is a *desktop database file* for each disk. This is an invisible file which is called, oddly enough, "Desktop", and it is kept in the disk's **Icons** folder. This file contains copies of the rBundles for the applications on that disk. However, an applications rBundle isn't normally added to a disk's **Desktop** file unless you actually launch the application with the Finder. So, while all of your applications may have rBundles, the Finder won't know about them until you launch each application! *Rebuild Desktop* is a Finder Extension that will scan any devices you have selected and build the **Desktop** file for the Finder without forcing you to tediously launch every application that has a rBundle resource.

Installing Rebuild Desktop

To install the Rebuild Desktop Finder Extension, refer to "How To Use Your GS+ Disk" elsewhere in this issue. Rebuild Desktop can only be used with System 6, however if you install it on a System Software v5.0.4 disk, nothing bad will happen.

Using Rebuild Desktop

Rebuild Desktop installs a menu item, "Rebuild Desktop Database," in the Finder's "Extras" menu. The menu item will be disabled unless you have selected a device on the desktop. To rebuild the database from files on the selected devices, simply choose "Rebuild Desktop Database" from the "Extras" menu, then sit back and wait while the database is rebuilt. To get the changes to show up, you will have to restart the Finder (i.e. launch a program and then quit back to the Finder).

That's absolutely everything you need to know to use Rebuild Desktop! If you want to know how it works, or how to write Finder Extensions, read on!

Programming Finder Extensions

Rebuild Desktop was written entirely in

ORCA/C. Finder Extensions are written in exactly the same way as an initialization file is written in that you must exit the Extension with a RTL instruction. With the latest version of ORCA/C (and ORCA/Pascal) there is an option that tells the compiler to generate a RTL exit instead of a GS/OS Quit call. In order to write a Finder Extension, you probably want to get your hands on the Finder v6.0 Engineering Reference Specification (ERS), which describes all of the requests that the Finder knows about. Trying to program a Finder Extension without this information would be impossible at best. (For information on obtaining this and other ERSes, see "What's New" in this issue.)

Starting Up And Shutting Down

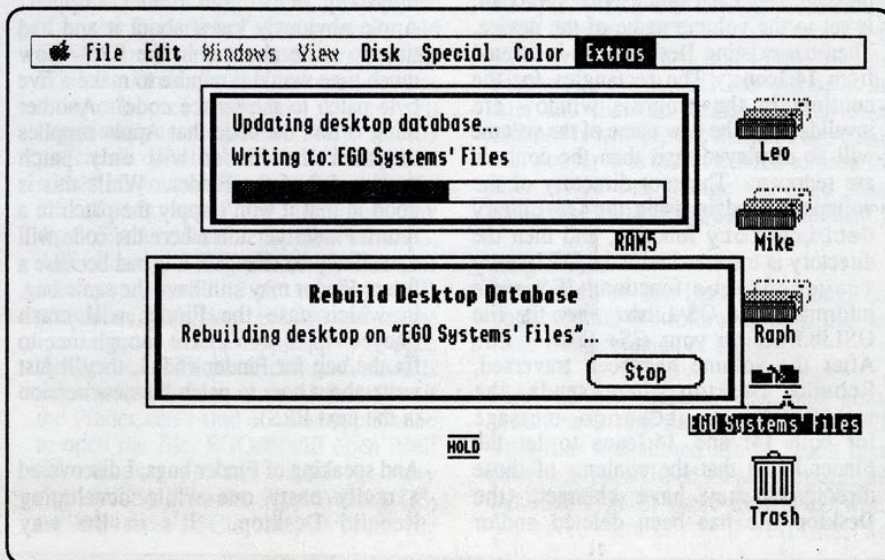
Finder Extensions normally reside in the ***:System:FinderExtras** folder. The Finder loads all Finder Extensions from the **FinderExtras** folder and calls it just as the system would do for an initialization file at system startup time. To start communicating with the Finder, the main function must install a request procedure using the **AcceptRequests** call. In fact, that's basically all the main function for Rebuild Desktop does! From there on out, all communication with the Finder takes place by either receiving a request from the Finder (the Finder sends a **finderSaysXXX** request) or by sending a request to the Finder (a Finder Extension sends a **tellFinderXXX** request). After the Finder calls the main function of all the Finder Extensions, it broadcasts a **finderSaysHello** request (using **SendRequest**). At this time, it is the job of the Finder Extension to perform any necessary startup

procedures, such as adding menu items to the "Extras" menu and patching the Finder as described in the "Bugs! Bugs! Bugs!" section below. Not all Finder Extensions will reside in the **FinderExtras** folder. Some Finder Extensions may have already been installed (they have a request procedure logged in) by a desk accessory (such as EGOed), a Control Panel, or an initialization file. The **finderSaysHello** request lets these already installed Finder Extensions know that the Finder is present and starting up.

When the Finder is quitting, it broadcasts a **finderSaysGoodbye** request, at which time the Finder Extension should remove any menu items it added to the "Extras" menu and perform any necessary shutdown procedures. Finally the Finder unloads all the Finder Extensions that were loaded from the **FinderExtras** folder by first sending a **srqGoAway** request to the Extension and then performing a **UserShutDown** call on it. When the Finder Extension receives the **srqGoAway** request, it must dispose of any memory it has allocated and prepare itself to be disposed of by the **UserShutDown** call.

Extra Enabling

Rebuild Desktop enables and disables its menu item in the "Extras" menu based on what kind of icons are selected. Every time a new group of icons become selected (or deselected) the Finder broadcasts a **finderSaysSelectionChanged** message. When Rebuild Desktop receives this message it sends a **tellFinderGetSelectedIcons** to find out exactly which icons are selected



(this call will cause the Finder to crash unless it is patched, as described in the "Bugs! Bugs! Bugs!" section below). If the selected icons are on the desktop then Rebuild Desktop needs to check to make sure that a device icon is selected. If the selected icons are not on the desktop then the "Rebuild Desktop Database" menu item is disabled. For each selected icon on the desktop, Rebuild Desktop checks to see if it is a device (its file type is greater than \$0100 and its name is not "Trash") and if it's a device, the "Rebuild Desktop Database" menu item should be enabled. If all of the selected icons on the desktop do not contain at least one device then the "Rebuild Desktop Database" menu item is disabled. If a selected icon is a device, and the device is online, unlocked, and readable, then the number of the device is added to a list of valid devices that are selected. Duplicates are not added to the list since a disk icon for a 5.25-inch drive could be selected as well as the 5.25-inch device icon.

Rebuilding The Desktop Database

When a menu item from the "Extras" menu is selected, the Finder broadcasts a `finderSaysExtrasChosen` request. When Rebuild Desktop receives that message, it checks to see if the item selected was the "Rebuild Desktop Database" menu item, and if so, begins to update the desktop database. If not, Rebuild Desktop refuses to accept the request and the next Finder Extension gets a chance to see if it's an "Extras" menu item that it knows about. If the "Rebuild Desktop Database" menu item was chosen, Rebuild Desktop sets the cursor to the watch cursor, creates a new dialog window to display which volume is being updated, and then begins to traverse the directory structure of each volume that was added to the list of valid devices built from the `tellFinderGetSelectedIcons` message. For each valid device, prefix **14:** is set to the volume name of the device. Then the existing **Desktop** file is deleted from **14:Icons**. The rectangles for the controls in the progress window are invalidated so the new name of the volume will be displayed, and then the controls are redrawn. The root directory of the volume is read in using the OS Library `GetDirectory` function, and then the directory is traversed with the OS Library `TraverseNames` function. [For more information on OS Library, see the file **OSLib.Docs** on your **GS+** Disk. - Ed.] After the volume has been traversed, Rebuild Desktop then sends the `tellFinderAboutChange` message for both **14:** and **14:Icons** to let the Finder know that the contents of those directories may have changed (the **Desktop** file has been deleted and/or

added to **14:Icons**, and the **Icons** folder may have been added to **14:** if it was not already present and a **Desktop** file was created by the Finder). Prefix **14:** is then set to the next valid selected device's volume name and the desktop database is updated for it. When all valid devices have been updated, prefix **14:** is restored to its previous value (and prefix **8:** is restored to its previous value—OS Library uses prefix **8:** to traverse directory structures), the dialog window is closed, the cursor is changed back to the pointer cursor, and an alert window is displayed to tell the user that the databases have been updated, but the changes won't take effect until the Finder is restarted.

Traversing

Rebuild Desktop traverses the directory structure of the volumes by using the OS Library `TraverseNames` call. For each file on the volume, the `TraverseRoutine` function is called. The `TraverseRoutine` function checks to see if the file type of the file is an application, and if so, sends a `tellFinderAddBundle` request to the Finder to make the Finder update the **14:Icons:Desktop** file, adding the `rBundle` of the application (if one is present) to the **14:Icons:Desktop** file. No matter what kind of file is being traversed, the `DoModalWindow` call is made to see if the user has selected the "Stop" button, and if so, the traversal is stopped.

Bugs! Bugs! Bugs!

Something that really irks me about the Finder v6.0 ERS is that it blatantly says that Finder v6.0 has a bug, and then it goes on to describe how to apply a patch at `finderSaysHello` time so that the Finder won't crash when certain `tellFinderXXX` messages are sent. Well, why couldn't this bug have been fixed, or at least the patch applied internally before the Finder shipped? Apple obviously knew about it and had time to write about it in the ERS—how much time would it require to make a five byte patch to the source code? Another thing is that the code that Apple supplies to patch the Finder will only patch version 6.0 of the Finder. While this is good in that it won't apply the patch in a future Finder version where the code will most likely be changed, it is bad because a future Finder may still have the same bug, in which case the Finder will crash (maybe Apple won't have enough time to fix the bug for Finder v6.0.1, they'll just write about how to patch the new version in the next ERS).

And speaking of Finder bugs, I discovered a really nasty one while developing Rebuild Desktop. It's in the way

`tellFinderAddBundle` is handled. This request has three parameters: the pathname of the application that has an `rBundle` resource, the pathname of the desktop database file to add the `rBundle` to, and the `rBundle` ID (in the application's resource fork) to add to the desktop database. If the ID passed is zero, the Finder is supposed to take the first `rBundle` resource that it finds in the application's resource fork and add it to the specified desktop database file. However, when I sent the Finder the `tellFinderAddBundle` request with an ID of zero, it was calling `GetIndResource` with an index of \$00000000 when it should have been using \$00000001. This caused the Finder to consistently return an error of \$1E0A—index is out of range or no resource found. I asked Apple II DTS about the problem, and they confirmed that it was a bug. The workaround for this bug is for Rebuild Desktop to call `GetIndResource` with the correct index of \$00000001 to find out what the ID of the first `rBundle` resource in the application is, and then pass that ID to the Finder via the `tellFinderAddBundle` request.

And wouldn't you know it, Rebuild Desktop doesn't always rebuild the desktop, *even with* the code to circumvent the Finder's buggy `GetIndResource` call. I haven't been able to track this one down yet, though. I know it's a Finder bug because I can break on my `tellFinderAddBundle` request call (using `GSBug`) and watch the Finder simply not add the `rBundle`! Sometimes, the Finder won't even add the `rBundle` when you open the application! Go figure.

Now, We Admit . . .

Rebuild Desktop isn't really very useful right now, as there aren't many applications that have `rBundle` resources, and the Finder itself seems to be a bit buggy in this area. However, as more applications with `rBundles` become available, and once the bugs are out of the Finder, having the ability to quickly rebuild your desktop should become very valuable to you. As usual, if you find a problem with this program (excluding the aforementioned Finder bugs), fill out the problem form supplied on your **GS+** Disk and let us know about it. **GS+**

Well, with the introduction of System 6, I have been forced to make a tough decision about future versions of EGOed. (New readers should check out the "What Is EGOed?" sidebar for more information on EGOed.) Namely, should I make them *require* System 6 (and therefore a hard drive and at least 2MB of RAM)? Or should I continue to support systems running with System Software v5.0.4? Like everything else we do around here, this decision was influenced by two factors: what have we been hearing from our readers, and what do we need to help get the magazine done?

Readers have been telling me that they want more and more features in EGOed: page breaks, page numbers, a spelling checker, etc. And the feedback forms we have been getting have been telling me that a very large number of you have a hard disk and at least 2MB of RAM. That information alone was enough to make me think that I should begin requiring System 6 for EGOed. As for what we need to help get the magazine done, System 6 has been giving me a whole new list of ideas for EGOed enhancements that will make our editing chores easier. So, actually, it didn't really take me that long to make my decision: EGOed v1.6 and later will *require* System 6. If you try to use EGOed v1.6 with anything earlier than System 6, you will be told that you need to use System 6, and EGOed will refuse to run. If you don't have System 6, you can still use EGOed v1.41 and earlier (there never was an EGOed v1.5), but you are going to be missing out on some *really* great stuff!

Speaking Of Which . . .

Let's take a look at what kind of great stuff is in EGOed v1.6. A lot of the new EGOed features are intended to be used with the new Finder v6.0. So, I'm going to assume for the rest of this article that

What Is EGOed?

EGOed is a New Desk Accessory (NDA) text editor. When you install EGOed on your startup disk, you can use it to edit and print ASCII Text, Teach, AppleWorks Classic and AppleWorks GS word processor files from inside any desktop program that properly supports NDAs. To use EGOed v1.6, you *must* install it on a IIGS System Software v6.0 (or later) startup disk with at least 55K of free space. For more information on installing and using EGOed, see "How To Use Your GS+ Disk."

you will be using EGOed from inside the Finder.

After installing EGOed v1.6 (see "How To Use Your GS+ Disk" for more information on installing EGOed), and restarting your computer, select EGOed from the Apple menu. (You may notice that the version number of EGOed is no longer shown in the Apple menu. Version information can now be found by selecting the EGOed icon on disk and using the Finder's "Icon Info" menu item.)

When the EGOed window opens, you may notice that the size and shape of the window is different from what it used to be. This is because EGOed v1.6 checks to see if the Finder is the current application, and, if it is, uses a window position that gives you easy access to your disks on the right-hand side of the desktop and fairly-easy access to any icons you might have at the bottom of the desktop. If you aren't in the Finder, EGOed will use its old, familiar window position.

The next thing you will notice is that the "Prefs" menu is gone from the EGOed menu bar. Not to worry, at the bottom of the EGOed Edit menu, you will find a new item, "Preferences...". Selecting this item will present you with a new Preferences dialog that you can use to set all of your EGOed preferences. Since this menu item is so far down the menu, it has a key equivalent of Command-E that you can use to quickly pull up the Preferences dialog. Every control in the Preferences dialog has a key equivalent to make it easier to use. For a complete list of these key equivalents, see Figure 1.

There are two categories of preferences: "General Preferences" (these are the old EGOed preferences), and "Preferences While In Finder." This last category has only one preference for you to set: "Applications Get Files First." This preference controls whether or not EGOed should let your applications (AppleWorks GS, Teach, etc.) try to open any AppleWorks Classic, AppleWorks GS, APW Source, ASCII Text, or Teach files that you double-click on. If this preference is checked, EGOed will let the Finder try to find an application to open these types of files. If this preference is *not* checked (which is the default), or if the Finder can't find another application to open the file, EGOed will open itself (if necessary) and load in any AppleWorks Classic, AppleWorks GS, APW Source, ASCII Text, or Teach file

that you double-click on! (Note that pressing down the *caps lock* key while double-clicking on a file will reverse the setting of this preference. Why did I use the caps lock key for this? Because all of the other good modifier keys already have jobs inside the Finder!)

Say What!?

Yes, you read that last paragraph right! You can have EGOed v1.6 open AppleWorks Classic, AppleWorks GS, APW Source, ASCII Text, or Teach files from the Finder simply by double-clicking on them! If you double-click on a file and EGOed is already open, any file in the EGOed window will be cleared (you can cancel this if you like) and the file you double-clicked on will be opened. Basically, this is just like using the Open item in the EGOed menu. But that's not all . . .

If you hold down the *control* key, instead of opening the file that you double-click on, EGOed will *import* it (just as if you had selected the Import item from the EGOed File menu). While you can only open one file at a time, you can select and import as many files as EGOed can hold in memory! And, these files can all of different types if you wish! (As long as they are all either AppleWorks Classic, AppleWorks GS, APW Source, ASCII Text, or Teach files.) However, due to a problem with the way the Finder tells EGOed about the files you have selected, you *must hold down the control key until the last file has been imported!* If you don't, EGOed will revert to "open mode" after you let up the control key.

In addition to opening files, you can select an AppleWorks Classic, AppleWorks GS, APW Source, ASCII Text, or Teach file in a Finder window and select Print from the Finder File menu. EGOed will open the file, and then go straight to the Print dialog. It will use the default Page Setup that you have saved in EGOed to print the file. (You can change the page setup using the EGOed Page Setup menu item.)

Bug Fixes

Now, if all of that isn't cool enough for you, consider the following bugs that are fixed in this version of EGOed:

First of all, EGOed has had some problems in the past saving out ASCII Text files that started life as Teach files. Previously, EGOed was leaving the auxiliary type of these files alone when you saved them as ASCII Text files. So,

when you opened up a Teach file, and then saved it as ASCII Text, you ended up with an ASCII Text file with an auxiliary file type of \$5445. Most IIGS applications ignore the auxiliary type of ASCII Text files, but it makes a big difference to Macintosh applications that are trying to access those files from an HFS disk or across a network! To fix this, EGOed now sets the auxiliary type to zero whenever you save a file as ASCII Text.

Second, if you have ever tried to open a Teach file that has damaged style information (perhaps someone sent you a Teach file via modem and they neglected to archive it with GS-ShrinkIt), you may have noticed that older versions of EGOed would choke on such a file. EGOed v1.6 can recognize damaged style information in a Teach file and will display a dialog telling you that the style information is bad and that it won't be used. This is much easier to deal with than a reboot!

What? Still Not Enough?

OK. I've been saving this one for last. Ever since the original EGOed appeared in GS+ V1.N2, I have received more requests for one certain feature than for any other.

Figure 1 - Preferences Dialog Key Equivalents

Preference	Keystroke
Automatic Word Wrap	Command-A
Preserve Paths	Command-P
Smart Cut/Paste	Command-S
Warnings	Command-W
Zoomed On Open	Command-Z
Default Font . . .	Command-Y
Applications Get Files First	Command-1

A Spelling checker? No. Headers and Footers? No. It's, it's . . .

An I-Beam cursor for editing! (And there was much rejoicing!)

So There You Go

Without a doubt, this is the most useful version of EGOed yet. Just wait till you start zipping around your hard drive, reading old files that you have no idea what they are, with just a few clicks! It's heaven! (I've already freed up about 2MB on my hard disk doing this!)

As usual, if you want to know *how* all of this neat stuff is done, be sure to read the file *EGOed.1.6.Tech*, which is on your

GS+ Disk in the *EGOed* folder. It will tell you about communicating with the Finder from an NDA, how an NDA can open itself and a whole bunch of other stuff that you should find helpful as you program for System 6. If you only want to use EGOed, you need to read the file *EGOed.Docs* which is also on your *GS+* Disk in the *EGOed* folder.

So, that's all for now. I've got a list of enhancements for upcoming versions of EGOed that should make everybody happy. But that doesn't mean I don't want to hear *your* ideas! Let me know what you think of this version of EGOed and what you want to see in future versions. *GS+*

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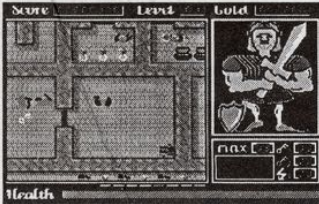
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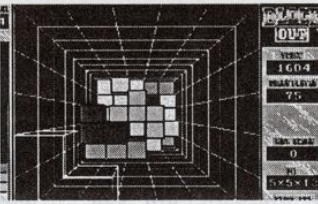
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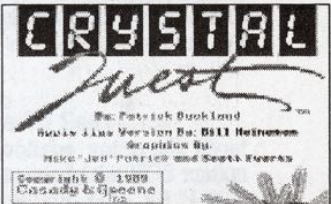
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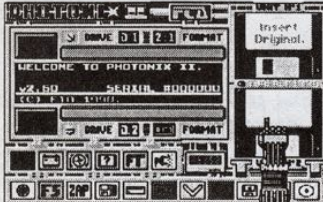
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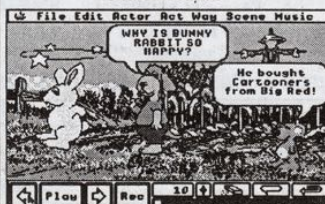
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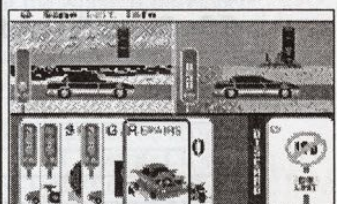
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Let's Get Visual

Ever since the fabled Turbo-Res video board for the IIGS was shelved by its developer, there have been rumors (and rumors of rumors) about new video enhancements for the IIGS. The last really *big* rumor of this type was about the board that New Concepts was supposedly working on. As far as I know, it has yet to materialize. However, an industry source (yes, we do have a few of those left), has told me that a new IIGS video board will be making its debut at the upcoming Apple Central EXPO. This source would not reveal any details about the board, except to say that it was very real and would be shipping soon after the show.

EtherNet . . . Gesundheit!

Speaking of products that never made it to market, you may remember that at last year's KansasFest, Apple said that it was working on an EtherNet network adapter card for the IIe and IIGS. That card has yet to appear (perhaps they put the project on hold in order to get System 6 out by December . . . er, I meant February, um, March that is), but according to yet another inside source, the EtherNet card is due to begin beta testing very soon. Perhaps Apple will have some to sell at the EXPO.

Discover This!

If you have not heard by now, Apple has closed several deals that will allow its computers to be sold through outlets that are more "mainstream" than your local Apple Dealer. As of now, you can walk into a CompUSA, or a Sears Computer Center and put down your money and walk away with the low-end Macintosh of your choice. Surprise! They don't carry Apple IIs. Of course, if enough of us walk in and *ask* about the Apple II, the sales people might ask their buyers and then the buyers might ask Apple and then Apple might laugh at them. (My editor suggested that I make this one a "Blatant Lie" by telling you that they *do* carry Apple IIs. Of course, *he* wouldn't have to answer all of the angry phone calls or write next issue's retraction, would he?)

WonderWare!

Believe it or not, Claris Inc. is about to release an update to AppleWorks GS! They sent us a beta copy of AppleWorks GS v2.0 (code named "WonderWare") and I have to say, it's *unbelievable!* As opposed to the measly 6 modules in AppleWorks GS v1.1, WonderWare has 10 different modules. Our copy had modules

for 3-D spreadsheet, relational database, word processing, graphics, telecommunications, page layout, electronic mail, presentation graphics (i.e. slide shows), an outliner, and project management. While this sounds great (and it is) there may be a problem . . . our beta copy would only run under System Software v4.0 or earlier.

"It Can't Be Done"

More than anything else, the words, "It Can't Be Done" have characterized the products from a certain west coast IIGS software company. When they started their last project, they were told that there was *no point* to even trying. But, *true* to *type*, they pressed on. That product later won an Apple II Achievement Award. Now we hear that they are working on yet another piece of software that can't possibly be done on the IIGS: *MultiFinder*.

My Gosh! It Worked!

Last issue, our extremely high-strung publisher moaned about the lack of good, and inexpensive, software for the IIGS. Apparently, he just didn't wait long enough. In the time since that editorial went out, I've been sent a bunch of rumors about new IIGS software in development.

At least two companies are working on a "Disk Doubler" type utility that automatically compresses and extracts files on your disks. Another company is working on an e-mail program for Mac and/or IIGS networks. And yet another company plans to bring out a new eight channel stereo digitizer card. Look for beta versions of these products to be on display at the Apple Central EXPO.

Sorry, but I can't tell you about the guy that's working on a dBASE clone, or the company that's working on the generic FAX Modem drivers that will let you use *any* FAX modem with your IIGS.

You Must Remember This

Remember the old "Mac-on-a-card" project that the Scottish company Cir-Tech was supposedly working on? Well, rumor has it that a certain high-*quality* Apple II mail order company recently contacted Cir-Tech in an effort to take over development of the card. However, the deal fell through due to the apparent bugginess of the card.

In somewhat related news, it's rumored that Apple has recently started, and killed, a project to create a IIGS emulator card for the Mac LC (or LC II or whatever the new

model is this month). However, the project stalled when they ran into trouble trying to duplicate the sound system in the IIGS. At this point, the project is on hold indefinitely.

Get The Raid!

If you develop software, you've probably had the nightmarish experience of users finding bugs in your software. Bugs that you *have* to fix. Well, the next time you have a bug or two to fix, consider the rumors surrounding System 6. Apparently, there are well over 150 documented bugs in Finder v6.0 and other parts of System 6! Fortunately, none of them are very dangerous to your data or otherwise bad enough to require an immediate fix.

Stuff We'd Like To See

Well, since the *publisher* got to talk about what *he* wanted to see in the IIGS market ("Writer's Block" in GS+ V3.N4), I thought I should tell you what everyone else around here wants to see:

IIGS-specific software for America Online.
A full- or two-page monitor.
A page layout program that can handle Encapsulated PostScript files.
A re-release of Rastan!

This Just In . . .

Just before we went to press, we got our May 1992 Developer mailing from Apple. Looking at the latest issue of *develop* on the new developers CD-ROM (which is called, "The Byte Stuff," by the way), I learned that *develop* will no longer feature an Apple II Question and Answer section. Future Apple II questions will be printed in *A2-Central*. I haven't shown this to the boss yet, he'd probably just hit the roof and write another "why bother with being developers when the mailings have almost *no* Apple II content?" editorial. I'll just have to remind him that we've been told that if we continue to say bad things about the Apple II developers program, things might just get worse. That should keep him from writing anything stoopid.

Got a rumor, wish or blatant lie about the IIGS? Send it in! If I use it, I'll either give you a GS+ T-Shirt or extend your subscription for an issue. (If you want the T-Shirt, be sure to tell me your size!) Send those libelous letters to:

GS+ Rumors
P. O. Box 15366
Chattanooga, TN 37415-0366

GS+

How To Use Your GS+ Disk

The first thing you need to do is **make a backup copy of your GS+ Disk with the Finder!!!** Next, put the original in a safe place. If you are having a problem making a backup copy, give us a call at (615) 843-3988. If your disk is damaged, let us know and we'll get a new one to you as soon as possible.

Installing The Software

To install the software on this issue's GS+ Disk, start up your computer using System Software v5.0.4 or later. (Note that several of the programs on this issue's disk *require* System 6! For more information, refer to the article for each individual program.) Next, place your backup copy of the GS+ Disk in a drive. (You *did* make a backup didn't you?) Now run the Installer program that is on your GS+ Disk. (From the Finder, you would double-click on the Installer icon.) *It is extremely important that you use the Installer that is on your GS+ Disk! Do not use any other copy of the Installer!* When the Installer window appears, select the item you want to install from the left-hand window, and the disk you want to install it on in the right-hand window. Then click on the Install button. For more information on how to use the Installer, refer to your IIGS owner's manual.

Before you attempt to use your GS+ Disk, please read the **a.Read.Me** file for any last minute corrections or information.

The following is a detailed example of how to install EGOed. The other programs on your GS+ Disk are installed in a similar manner.

- Start up your IIGS with System Software v6.0 or later—the version of EGOed that is on this GS+ Disk *requires* System 6! (Your GS+ Disk is *not* a startup disk, so don't try starting your computer with it.)
- Insert your backup copy of the GS+ Disk into a drive and run the Installer program that is on your backup GS+ Disk. It is *very, very* important that you run the Installer that is on your backup GS+ Disk and *not* some other copy of the Installer.
- When the Installer finishes loading, click on the Disk button on the right hand side of the Installer window until your startup disk appears. (If you only have one 3.5-inch disk drive, you will have to remove the backup GS+ Disk

from the drive and replace it with your startup disk. You should also refer to the "Making Room" section below for hints on how to free up room on your boot disk.)

- On the left-hand side of the Installer window, you will see a list of the items on the backup GS+ Disk. One of the items in this list should be "EGOed." (If EGOed is *not* in this list, quit the Installer and begin again. Be sure that you are running the copy of the Installer that is on your backup GS+ Disk!) Once you see the EGOed item, click the mouse on it so that it becomes highlighted.
- Click the mouse on the Install button in the middle of the Installer window. The Installer will then install EGOed on your startup disk. If you only have one 3.5-inch disk drive, you may have to switch disks several times. Simply insert each disk as the Installer asks for it.
- When the Installer has finished, click on the Quit button in the middle of the Installer window. This should cause your IIGS to restart.
- When your IIGS finishes restarting, pull down the Apple menu and select EGOed (note that you have to be in a desktop program like the Finder to have access to the Apple menu).
- When EGOed finishes loading, select Open from the EGOed File menu and then insert your backup GS+ Disk into a drive. You should then see a list of the files and folders on the GS+ Disk.
- Open the EGOed folder on your backup GS+ Disk and then open the file **EGOed.Docs**. This file contains complete documentation on how to use EGOed. Please take a few minutes to read this documentation.

Making Room

If you do not have a hard drive, you will probably have to remove some files from your startup disk to make room for the New Desk Accessories, Control Panel Devices, and other system files that come on the GS+ Disk. Towards that end, we have prepared the following list of "expendable" files that you can "safely" remove from your System Software v5.0.4, or System Software v6.0 startup disk to free up some space. (We've put quotes around "expendable" and "safely" because

almost *all* of the files in the IIGS System Software have some sort of use! The files we are presenting here are the ones that are the "least" useful for a specified hardware setup.)

Be sure that you *never* delete *any* files from your original System Software boot disk! Always work on a backup copy!

System Software v5.0.4

The standard System Software v5.0.4 **:System.Disk:** has 12K available on it. The following items can be deleted from the root directory of the disk: **Tutorial** (11K), and **AppleTalk** (0K).

After this, things get a bit tricky. Other files that you can safely delete depend on your *hardware setup*. If you have a ROM 01 IIGS, you may delete the file ***:System:System.Setup:TS3** (15K). If you have a ROM 03 IIGS, you may delete the following file: ***:System:System.Setup:TS2** (41K).

If you do *not* have a modem, you may delete the following files: ***:System:CDevs:Modem** (6K), and ***:System:Drivers:Modem** (3K).

If you do *not* have a printer, you may delete the following files: ***:System:CDevs:Printer** (6K), ***:System:Drivers:Printer** (3K), ***:System:Drivers:Printer.Setup** (1K) and ***:System:Drivers:ImageWriter** (26K). If you have a printer other than the ImageWriter, you can still delete the ***:System:Drivers:ImageWriter** file (unless your printer is an ImageWriter compatible).

If you do *not* have a 5.25-inch drive, you may delete the following file: ***:System:Drivers:AppleDisk5.25** (7K).

Removing some or all of these files should give you ample room (up to 90K on a ROM 01 IIGS and up to 116K on a ROM 03 IIGS) on your startup disk to install EGOed or any of the other system utilities on your GS+ Disk.

System Software v6.0

If you use the System 6 **:Install** disk to create a minimal, 800K, System 6 boot disk, that disk will have 26K of free space on it when the installation is finished.

It must be noted that *all* of the files on this disk are *very* important and the files that you can *safely* remove depend, for the most part, on your hardware setup. So,

please read these instructions carefully before removing *any* files.

The first two files you can delete depend on what you will be doing with your IIGS. If you will not be running AppleSoft BASIC programs, you can remove the file **BASIC.System** (11K) from the root directory of the disk. If you will not be running ProDOS 8 software, you can remove the file ***:System:P8** (18K).

If you do not care what time it is, you can delete the following file:

***:System:CDevs:Time** (11K).

After that, the other files that you can safely remove depend on your *hardware setup*.

If you have a ROM 01 IIGS, you may delete the file ***:System:System.Setup:TS3** (41K). If you have a ROM 03 IIGS, you may delete the following file:
***:System:System.Setup:TS2** (37K).

If you do *not* have a 5.25-inch drive, you may delete the following file:
***:System:Drivers:AppleDisk5.25** (8K).

If you do *not* have a printer, you may delete the following file:
***:System:CDevs:Printer** (5K).

Finally, if you have deleted the files ***:System:CDevs:Time**, and ***:System:CDevs:Printer**, you can also delete the file ***:System:Desk.Accs:ControlPanel** (19K).

Removing some or all of these files should give you ample room (up to 139K on a ROM 01 IIGS and up to 135K on a ROM 03 IIGS) on your startup disk to install EGOed or any of the other system utilities on your *GS+* Disk. Note however, that you will *not* be able to print from EGOed or any other desktop program when using a 800K, System Software v6.0 boot disk.

Small Talk

Beginning with *GS+* V2.N6, we began using *GS-ShrinkIt* to compress the *source code* on the *GS+* Disk. To extract the source code from their archives, you will need to use *GS-ShrinkIt* v1.0.6 or later. If you do not have *GS-ShrinkIt*, check with your local user group or give us a call here

at *GS+* Magazine and we will help you locate a copy.

GS-ShrinkIt is not *required* to run *any of the programs on the GS+ Disk!* It is only required if you want to look at the source code that is used to create the programs, or if you want to look at the icons submitted for this issue's icon contest!

What's On The Disk

The programs on this disk will work under System Software v5.0.4 unless explicitly stated that System Software v6.0 is required. There are 15 items in the root directory of this issue's disk. They are:

a.Read.Me

A lot can happen from the time we send this magazine to the printer and the time we get ready to mail them out. If anything does happen, we will put everything we can find out about it in this file. Please read this file before you attempt to use the *GS+* Disk. This is a plain text file.

(continued on next page . . .)



IMPORTANT!
Use scissors or a knife to open disk bag!
Do not attempt to pull bag away from magazine!

CoolCursor

This folder contains the Cool Cursor Control Panel and two other folders. The first folder, **Cursors** contains several sample cursors. The second folder, **Source** contains the source code to Cool Cursor. Cool Cursor must be installed on a startup disk with at least 60K free (19K is required for the Cool Cursor Control Panel and 41K is required for all of the cursors).

EGOed

This folder contains EGOed v1.6. EGOed is a New Desk Accessory text editor that allows you to read and print ASCII, AppleWorks (Classic and GS) and Teach files. This folder also contains complete user and technical documentation for EGOed v1.6 in the files **EGOed.Docs** and **EGOed.1.6.Tech**. The **EGOed.Docs** file is a plain ASCII text file while **EGOed.1.6.Tech** is a Teach file. EGOed must be installed on a startup disk with at least 55K free. *EGOed v1.6 requires System Software v6.0.*

Feedback

This is the Feedback form for this issue. Fill it out, and send it to us to let us know what you thought of this issue of *GS+* Magazine and what you want to see in future issues of *GS+* Magazine. This is a plain ASCII text file. (Note that we did not have room for a printed Feedback form in this issue of *GS+* Magazine. If you do not get the *GS+* Disk, but know someone that does, ask them to print you out a copy of this file so that you may fill it out and send it in.)

Glossary

This is a plain text file containing all of the terms defined in the past installments of our "Glossary" department.

Icons

This folder contains Finder icons used by the various programs on the *GS+* Disk. Among these is the file, **Replicator.Icons**. These icons are for the Replicator program and, when Replicator is installed on your boot disk in a folder called **Replicator**, allow you to open Replicator documents simply by double clicking on them.

Also, the icons for this issue's icon contest are in this folder in the *GS-ShrinkIt* archive, **ContestIcon.SHK**.

Installer

This is the Apple IIGS Installer. Run it to install the other programs on this issue's disk.

For more information on using the Installer, refer to your IIGS owner's manual.

Make.v2.0

This folder contains a *GS-ShrinkIt* archive containing version 2.0 of the Make utility from V3.N4. For more information on using Make v2.0, read the **Make.Docs** file. Make v2.0 is used to compile the programs on the *GS+* Disk. If you do not plan to compile the programs, you can forget this folder even exists.

OSLibrary

(If all you want to do is *run* the programs on the *GS+* Disk, forget that this folder even exists. You don't need it). This folder contains a *GS-ShrinkIt* archive of the OS Library. This library is needed to recreate several of the programs on this *GS+* Disk. This archive also contains documentation for OS Library in the file **OSLibrary.Docs**.

Phantasm

This folder contains the Phantasm blanker module, **Mondrian**, its source code files, and a generic Phantasm blanker shell as described in the "Writing Phantasm Screen Blankers" article elsewhere in this issue. To install this blanker in your copy of Phantasm, refer to the instructions in your Phantasm user's manual.

By request of D. Proni, these files are public domain and may be freely distributed as long as the publishing notice inside the files remains intact. However, unless explicitly stated otherwise, all of the other files on this disk are copyrighted by EGO Systems and may not be distributed!

PointlessTip

The files in this folder are examples of how to use Pointless with a LaserWriter, as described in the "TrueType On A LaserWriter" article elsewhere in this issue.

These files require the basic Pointless package and either GraphicWriter III v1.1 or AppleWorks GS v1.1.

Problem.Form

This is the standard *GS+* problem report form. If you have a problem with one of our programs, *please* fill out this form and send it to us. This is a Teach file. You may use EGOed to view it.

RebuildDesktop

This folder contains the Rebuild Desktop Finder extension. Rebuild Desktop will be installed in the **System:FinderExtras** folder of the disk you choose. *Rebuild Desktop requires System Software v6.0.*

Replicator

This folder contains version 1.2 of the Replicator program. Replicator can be

installed on any disk and in any folder (you can even run it from a backup copy of your *GS+* Disk if you wish), but we recommend that you install it on a startup disk with at least 70K free.

This folder also contains the file **RepTech.Docs**. This is a Teach file containing technical and programming information about Replicator. There is also a set of Replicator icons, which are described under "Icons" above.

Scripts

This folder contains all of the scripts that are used by the Installer in order to automate the installation of the files from this *GS+* Disk.

Shuffle

This folder contains the Shuffle permanent initialization file as described in the "Shuffle v2.0" article elsewhere in this issue. Shuffle must be installed on a startup disk with at least 5K free.

Technical.Notes

This folder contains a *GS-ShrinkIt* archive containing the various Technical Notes that were mentioned in this issue.

These technical notes are copyrighted by Apple Computer, Inc. But, they may be freely distributed as long as the copyright notice inside each file remains intact.

Whoosh

This folder contains the Whoosh control panel, as described in the "Whoosh" article elsewhere in this issue. Whoosh must be installed on a startup disk with at least 10K free. *Whoosh requires System Software v6.0.*

Please Remember...

The contents of the *GS+* Disk are *not* public domain or shareware! We depend on *your* honesty to stay in business. Please do not give away copies of the *GS+* Disk or any of the programs on it. If you do, we will not be able to stay in business. It really is that simple! *GS+*

Reviews

Pegasus Internal Hard Drive

Available only from Econ Technologies

Pricing:
50MB \$459
100MB \$589
240MB \$999

Prices are for the complete Pegasus unit. A SCSI controller card (required) is not included in any of the above prices.

Case with power supply is also available without the half-height Quantum mechanism.

Power Supply / Case Pricing:
with fan \$199
without fan \$179

The model reviewed here is the Pegasus 100i, 100MB.

ECON Technologies
97 N. Central Ave., Suite B
Oviedo, FL 32765
(407) 365-4209

Reviewed by Michael J. Brouillette

New IIGS-Specific Hardware?

ECON Technologies apparently doesn't know that Apple Computer doesn't make the Apple IIGS any more. (They do, of course, but just try telling that to an Apple Dealer!) The Pegasus is an internal SCSI hard drive and power supply which replaces your Apple IIGS power supply. It also provides you with an external SCSI port (but it is *not* a SCSI controller). The shiny aluminum case contains the power supply and cooling fan for the drive and computer and the half-height 3.5-inch Quantum LPS SCSI hard drive.

What's With The Shiny Case?

Unlike Applied Engineering's black-painted Vulcan, the shiny aluminum case of the Pegasus acts as your RF (Radio Frequency) shield, ground and heat sink. (The way God intended!) The case itself is well-designed, with a "hood" or "bonnet" style access plate to the drive mechanism and fan.

The Pegasus's power supply pumps out 80 watts of power, enough for a fully peripheral-populated Apple IIGS. In comparison, the Applied Engineering Heavy Duty Power Supply (and the power supply in the Vulcan) puts out around 70 watts, and the standard Apple IIGS power supply is rated at about 40 watts.

If you are one of those Apple II wire-heads who want to run a souped-up TransWarp GS, check this out. The power supply voltage provided by the Pegasus can be easily adjusted on the 5 volt side with just an *insulated shank* screwdriver and a sensitive voltmeter. You don't even have to take the case apart. The adjustment potentiometer is located through the top cooling slots on the left-hand side, down on the circuit board. Of course, *you should only adjust your voltage with the Pegasus completely removed from your computer!*

Sounds Like You're A Big Fan

I didn't really think about the cooling fan very much until an aeronautical engineer in my local user group (the Houston Area Apple Users Group) made a comment on the case and fan design while he was admiring the hard drive. He stated that the cooling unit was the first he had seen which followed a thermodynamically sound airflow pattern.

I said, "hunh?"

He showed me how the heat generated by the computer pulls fresh air through the vents on the bottom of the computer. The fan on the Pegasus takes advantage of the existing airflow, pulling cool air across the bottom of the motherboard, up through the bottom of the Pegasus and out through the top of the power supply.

This, however, does not preclude the use of an Applied Engineering Conservor or a Kensington System Saver; any extra cooling is good for your system. (Note: The System Saver fan would augment the Pegasus fan; whereas, the Conservor would provide slightly more cooling over your peripheral cards.)

Let's Peek Inside!

As I said before, the case is easily opened.

Loosen two screws, remove two others, and the whole front and top of the case pivots forward. From there you have the ability to attach a connector to the front of the Quantum drive so that you can attach an external LED indicator light (not included). If you have another terminated SCSI device (other than your SCSI card), loosen four more screws to remove the drive itself for access to the three SCSI terminator resistor blocks.

ECON Technologies provides you with a pre-made SCSI bus cable which has connectors for an external SCSI port, a C.V. Technologies RamFAST SCSI card, or an Apple High-Speed SCSI interface card. This means that while you now have an internal hard drive, you can also attach up to six other SCSI devices such as a CD-ROM drive, Apple Flatbed Scanner, extra hard drives, tape drives, or even one of those 40MB 3.5-inch ED (Extra Density) disk drives!

The Speed Question

This question is really moot these days, since everyone making a hard drive seems to use the Quantum mechanisms. But, if this review is to have any objectivity at all, I should include some stats. Since Diz tests his hard drives to "School Specs" (2.6MHz and Apple High-Speed SCSI), and I own a RamFAST, I had to find someone able to do the same with DiskTimer GS v2.0. I did, and the results are shown in Figure 1.

One little annoying feature of all hard drives is the time they take to "spin-up" or "power-up." Before now, you either started the hard drive first and then started your Apple II computer or held down the reset key until the drive came up to speed.

The Pegasus solves this problem two ways: DIP switches (located on the side of the case) are preset to delay the actual

Figure 1 - DiskTimer GS v2.0 Results

	Pegasus 100i	Shadow 105MB†	TMS 105 Pro*	Tulin Half Shell°
Read	31	36	33	36
Multi-block read	23	26	24	24
Seek	19	22	21	68
Adapt	21	21	20	22

All readings were taken with hard disks attached to the Apple II High-Speed SCSI card on an unaccelerated IIGS.

* See review in GS+ V3.N1.

° See review in GS+ V3.N3.

† See review in GS+ V3.N4.

booting of the computer for 6.7 seconds; about as much time as the TransWarp GS's "whoosh and splash" screens.

If you want to cut the start-up time closer, the DIP switch delay can be set to .1 (1/10th) of a second! You then use an interesting little blue wire (mine was purple) called the "Reset Flyer Lead." This wire (with terminal) is routed to contact #31 (RESET) of any of the seven peripheral card slots with or without a card installed. It causes the computer to think that you are holding down the reset key until the Pegasus comes up to speed.

If you have, say, an old CMS drive attached to your SCSI chain, you can set the reset timer delay to wait for up to 20.1 seconds for the old hard drive by using the same DIP switches.

This same bank of DIP switches are also used to set the SCSI ID number of the hard drive. The Pegasus comes preset with an ID number of 6, while most SCSI cards are set for an ID number of 7.

Because of the limits of internal clearances within the IIGS, ECON Technologies provides the owner with some adhesive pads and an insulating card for the side of the Pegasus case. The insulating card is provided so that the owner can use slot 1 (you place the insulating card between the Pegasus and your card in slot 1 to prevent a short circuit). The case *almost* blocks the first back panel expansion port. However, there is *just* enough room for a HyperStudio "slotless" Sound Digitizer or an Applied Engineering PC Transporter ColorSwitch.

The Pegasus comes packed with a *lot* of shareware and public domain software, along with the latest System Software from Apple. Speaking of software, D. Proni has written "Universe Master"—truly incredible hard drive and file management software! Unfortunately, at this point, Universe Master, the product, only exists as a little orange slip of paper telling you that it will be finished soon. [We have seen a beta copy of this software and it does indeed look incredible. However, at this point, it is still vaporware. ECON plans to have it finished in time for KansasFest - Ed.]

Is The Manual Good?

ECON Technologies has produced one of the *best* installation manuals I have ever seen. It is sequentially written with plenty of photos, diagrams, and screen dumps. If you're tired of confusing and verbose manuals, or you can't stand Apple's new "plug-it-in-and-turn-it-on/contact-your-Apple-dealer" style, you

will like this manual. The manual also has two pages of troubleshooting tips, but, to be honest, not much can go terribly wrong with the unit.

So What's The Bad News?

First, you've got to understand that my gripes may not be your gripes.

I found the SCSI 20-pin bus cable to be just long enough to clear my HyperStudio Sound Digitizer in back panel port #1 when I routed the cable to port #2. I would have appreciated a bus cable kit instead of a pre-fabricated one. (ECON Technologies will provide a longer replacement SCSI bus cable for a small fee.) Users of the Apple High-Speed SCSI card will have to use some electrical tape to insulate the metal on the SCSI connectors to prevent any shorts against any circuits inside the computer. This limitation is the design of the Apple SCSI card connection, but a bus cable kit would have helped to solve that problem also.

On the advice of that aeronautical engineer, I added two parallel strips of half-round, closed-cell, adhesive-backed insulation (whew!) along the length of the top of the Pegasus case to help seal the space between it and the IIGS case. Strangely enough, I found out that the folks at ECON noticed a drop in operating temperature during the testing phase for the Pegasus. It seems that they covered the metal contact fingers on the IIGS's case top with tape to prevent the scratching of that shiny housing. I hope we'll soon see some gasket material included in future versions of the Pegasus.

Being the Type-A personality that I am, 10+MB of public domain and shareware software is a *lot* to compare and copy over to disks. I am still cleaning up after five months of ownership! You can have too much of a good thing!

Kind Of Expensive, Ain't It?

I admit it, this purchase was a *big* chunk of money, but add it up: Quantum hard drive, heavy duty computer power supply, cooling fan, and drive management software; it equals out. Not to mention Universe Master (well, someday), ECON Locator (better than Apple's Find File), System 6, 10+MB of public domain and shareware software included on the hard drive!

But I Have A Hard Drive!

If you already have a SCSI device and you *ever* need to expand your storage capacity or improve your boot volume performance, consider the Pegasus. Heck, buy the Pegasus case without the drive mechanism; you can fit two half-height drives or one full-height unit inside the case if you remove the fan!

How My Vulcan Became Illogical

To be honest, my purchase of this 100MB Pegasus hard drive was precipitated by my attempts to upgrade my Applied Engineering 40MB Vulcan IDE unit. At the time I purchased my Vulcan (pre-high-speed SCSI days), it was the fastest hard drive available; and to me, 40MB was more capacity than I could ever use.

When it came time to buy a larger hard drive, I was in for a big shock! Applied Engineering wanted more money to "upgrade" the drive mechanism than mail-order houses wanted for a complete *new* Vulcan! When I looked into an IDE mechanism to install into the Vulcan myself, I subtracted the "resale" value of my old IDE mechanism (zero) from half the price of a *new* 40MB IDE. Adding this back into the cost of the new 100MB IDE unit; I was right back to the cost of a whole new Vulcan! Yow!

So, I resigned myself to an external SCSI hard drive; hopefully a small or "zero-footprint" unit. When I added in the cost of a SCSI controller card and a heavy-duty power supply; I was in for some big expenditures.

Then I see an advertisement on the back of a computer enthusiast magazine from Chattanooga.

This isn't a case of "lemon pride." I must have spent about \$35.00 on long distance telephone charges calling ECON Technologies, TMS Peripherals, Quality Computers, LRO Computers, Tulin Technologies, and C.V. Technologies before I actually made my decisions and my purchase. If I had to do it all over again I'd buy it today. Besides, you (and several hundred satisfied owners) can't lose with ECON's thirty-day, money-back guarantee *and* 2-year limited warranty. **GS+**

Resistance Is Futile

By Joe Wanker!

If you plan to add more than one device to your SCSI chain, you'll have to remove the terminating resistors from the Pegasus drive first. Removing the resistors from the Pegasus drive is fairly easy (the most trouble I had was trying to align the screws with the holes when putting the drive back into the case), but you might not be very comfortable opening up the case and dipping your fingers in. If you're only a little bit afraid, then chances are you'll do fine—the Pegasus manual describes the process of removing the resistors step-by-step in a very clear fashion, complete with pictures. I was *most* impressed with the Pegasus manual.

Express

Programmed by Richard Bennett

Retail price: \$39.95

Typical mail-order price: \$24.95

Not copy protected

Requires a hard drive and a direct-connect printer

Seven Hills Software

2310 Oxford Road

Tallahassee, FL 32304-3930

Orders and Information: (904) 575-0566

Reviewed by Mark Ranes

For years, one of the things that has driven me crazy is waiting for documents to finish printing so that I can further take advantage of the enormous power of my IIGS. I have drooled over the printer spoolers Mac users have had at their disposal. Now, after all these years, someone has finally written a printer spooler for the Apple IIGS!

Express is a Control Panel that resides in the `*:System:CDevs` folder of your startup disk. It works with any direct-connect printer and IIGS-specific program that uses the Print Manager. It will *not* work with 8-bit programs (like AppleWorks Classic) or other programs that do not start up the Print Manager. Express works by intercepting all of the information created by a printer driver as it ships it off to the printer. This information is then written to disk where it can later be manipulated by Express. This is called "spooling to disk," and the file that is created is called a "spool file."

It is important to note at the outset of this review that a printer spooler does *not* speed up the printing of your documents. A printer spooler's job is to return control of your computer to you, while your document prints in the background. It may even take longer to print a document with Express active, but your overall productivity goes up because you can continue to use your IIGS while the printing takes place in the background. See Figure 1 on the next page for results comparing time taken to regain user control with Express versus traditional printing methods.

It should also be noted that a hard drive is required because the spool files tend to be *much* larger than the original files because they contain all of the imaging data created by the printer driver. This review, for example, was created with AppleWorks GS v1.1 and took up 14K of space on disk as an AppleWorks GS file... when I printed it, the spooled file was a whopping 223K!

Express comes on a 3.5-inch disk that includes an installer that personalizes your copy of Express and installs the Control Panel on your hard drive. The installer forces a reboot after installation to allow the Control Panel to become active. If you are using System 6 (you are using System 6, aren't you?), holding down the option key while booting prevents Express from loading. (A red "X" appears on top of the Express icon on the System 6 splash screen telling you that Express has not loaded.) Users will want to be sure to deactivate Express if they plan on using a network printer in a particular session. The Express package includes a comprehensive, well-written manual containing all the information needed to use Express.

Spooling Options

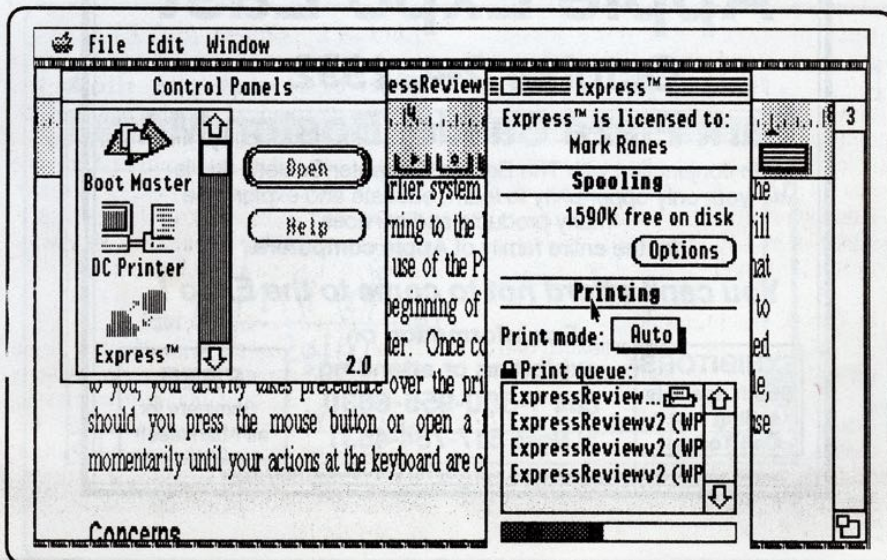
The Express Control Panel window has two main sections, *Spooling* and *Printing*. The Spooling section tells how much free space is available on your hard drive partition where Express creates a folder called, appropriately enough, `Express.Spools`. The Spooling section also has an *Options* button that lets you set some defaults for Express. A pop-up menu lets you set one of three defaults for each spool file as it is created. The standard setting, *Delete After Printing*, tells Express to delete the file from disk after printing. The next option, *Keep After Printing*, tells Express to print the file and then set its status to *Don't Print*. This option allows you to keep frequently printed files for further use so that Express doesn't have to create the spool file again. In fact, you can print the document in the background from the Control Panel without even starting up the application that created the spool file! The final option tells Express not to print the spool files it creates. This option allows you to print documents to the disk

for later printing. The final two spooling options include a check box that lets you tell Express if you are using an ImageWriter I and another that lets you turn Express off.

Printing Options

The Printing section of the Control Panel has two main components, the *Print Mode* and the *Print Queue*. The Print Mode is a pop-up menu with three options: *Off*, *Next*, and *Auto*. When the Print Mode is set to *Off*, Express will not print any spooled files. Spool files are still created, but no printing takes place. If the Print Mode is set to *Next*, Express checks the print queue (the list of spooled files) to see if any file needs to be printed. If so, the file is printed and then the Print mode is set to *off*. This allows you to print a particular file in the print queue without all spooled files being printed. The default Print Mode for Express is *Auto*. In this mode, Express continually looks for files that need to be printed. When the Print Mode is set to *Auto*, Express is virtually transparent and needs no instruction from the user.

The Print Queue is a list that shows the spool files that Express has created. The files in the queue are listed in the order they were created. If you double-click on a file in the queue, a dialog box pops up with information including creation date, file size and the printer driver the spool file was created with. Express will recognize which printer driver is currently active and print only those files that were created with the current driver. There is a check box in the dialog box that when clicked tells Express to ignore what type of driver created the spool files. Users should be aware that printing a spool file with a driver other than the one it was created with can yield unpredictable results. Spool files contain all of the



information needed for a specific printer type to correctly print a document, and mixing printer-specific spool files across multiple drivers will cause problems. Also in the spool file dialog box is a pop-up menu that allows the user to alter the default spool status. It is also possible to change the spool file's name as well as delete it from the print queue.

As a file is printed, a small printer icon appears to the left of the file name in the print queue. During printing, a thermometer shows how much of the spool file has been printed. If printing is interrupted for any reason, the file is re-queued for future printing once the Print Manager becomes active again. The good news here is that System 6 allows documents to continue printing after closing an application and returning to the Finder. Users that have yet to upgrade to System 6 will notice that the file that is currently printing stops upon returning to the Finder and is re-queued. Printing will resume when an application that makes use of the Print Manager is started up. Files that are re-queued start printing from the beginning of the document, so users will need to adjust the paper alignment in their printer. Once control of your IIGS has been returned to you, your activity takes precedence over the printing of spooled files. For example, should you press the mouse button or open a file from disk, printing may pause momentarily until your actions at the keyboard are completed.

Concerns . . .

I knew when I purchased Express that it

Figure 1 - Express Test Results

Time required, in minutes and seconds, to regain control of computer.
(All documents printed on an ImageWriter II in "Best" quality.)

	<u>With Express</u>	<u>Without Express</u>
This review, AWGS Word Processor	2:06	5:41
4 page AWGS page layout document	4:55	19:42
3/4 page graphic image, Second Chance	0:36	3:49
100 mailing labels, AWGS data base	3:18	12:38
2 page Teach document	1:39	5:39

would not spool files for use on a network printer. I was surprised to find that Express does not behave itself on an AppleTalk network even though use with networks is mentioned several times in the manual. The manual states, "Express turns itself off and does not spool files destined for a networked printer." In Express' current release, v1.0, any printing to a networked printer, such as a LaserWriter, is impossible with Express installed. When the application tries to print, the printer status dialog box blinks rapidly several times and then returns the message, "Connection can't be established with the LaserWriter." Pressing the option key during system startup does provide an easy way to deactivate Express (if you remember to do it), but it is no substitution for having Express work properly.

Dave Hecker from Seven Hills stated that, during beta-testing, they had at least one version that worked properly with AppleTalk active, but somehow the problem crept back into the release version of Express. After contacting Seven Hills concerning the problem, I had the

opportunity to test a beta version of Express that corrects the problem. It should be noted that this update has not been released yet, but should be available soon. Express users who work with networked printers should contact Seven Hills concerning availability of the update.

Certain programs, such as AppleWorks GS, treat every page of a file to be printed as if it is a separate document. When Express spools these files, a spool file is created for each page using the *same name* in the print queue. The first time you see the print queue containing a multiple page AppleWorks GS document, you are apt to think that Express has gone crazy and that it has created multiple spools of the same file. Even though this problem is not created by Express, it would be nice if the Control Panel recognized the print queue names as the same total document and somehow changed the names to reflect different pages. Examination of the **Express.Spools** folder shows that the actual spool files are unremarkably named **Spool.0000**, **Spool.0001**, and so on.

Also of concern to me is that Express seems to be unaware of a direct-connect printer's status. Express sends files out to a printer even if it is turned off. This could cause files that have been spooled to be deleted without being printed. Granted, files sent in the traditional fashion to a direct-connect printer that is off-line do the same, but since the immediacy of printing is delayed with Express, files could be easily lost.

Express Yourself?

Should you buy Express? Potential buyers should remember that Express requires a hard drive and is *not* intended for use with network printers. Users who work exclusively with direct-connect printers will find Express to be a real enhancement to their systems. Express returns control of your computer to you in a fraction of the time it normally takes when printing documents on the IIGS. The price of Express is right and except for AppleTalk compatibility problems, it functions as advertised. Express will increase your productivity by returning control of your computer to you, where it belongs. **GS+**

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Formulate

Programmed by Gerhard Kress

Retail price: \$49.95

Typical mail-order price: \$32.95

Not copy protected

Requires 3.5-inch disk drive, at least 1 MB of memory. A hard disk drive is recommended.

Seven Hills Software

2310 Oxford Road

Tallahassee, FL 32304-3930

Orders and Information: (904) 575-0566

Reviewed by Bill Cross

Math Displayer

Do you lie in the intersection of the following sets: 1) secondary mathematics educators (elementary algebra or higher), 2) users of an Apple IIGS with a megabyte or more of RAM, 3) educators who like to produce quality tests, quizzes, or documents for their students? Well if you do, then *Formulate* is your dream come true. If not, then you can just stick around and read about another solid new IIGS program. Who knows, maybe after reading this review you will want to make a recommendation to your local high school math department. At any rate, you should note that this is not a program that "does" mathematics (like Mathematica on the Macintosh), rather it "displays" mathematics.

The Old Way

As a high school and community college math instructor for the past many years, and a dedicated IIGS user, I have always prided myself on the quality documents I handed my students. The old handwritten test never appealed to my sense of professionalism. Thus, with the advent of Systems Software v5.0 and AppleWorks GS version 1.1, I thought I was in heaven. These updates permitted the use of option-key characters, and thus access to all the neat Symbol font items like: integration, summation, Greek letters like "pi," the little infinity guy, and many more. The only problem I had was putting them all together in a document. My standard process was to type into a AppleWorks GS word processing document the instructions and problems or portions of problems that required nothing more complicated than exponents. Next, I would "select all," then hot copy it over to an AppleWorks GS page layout. The rest of the details, like integration symbols, summation symbols, limits, and fractions were put in with text object boxes. It took at least three object boxes just to start an integration problem: one for the integration symbol and two more for the limits of integration. Put in the

integrand, a radical symbol and some exponents all involved in a fraction and you can hardly see the problem on the screen! It took several hard copy inspections before the final product (all modesty aside) looked great. The funny thing is I never really felt this was a bad process since I came up with such professional looking documents. What made me realize that there might be a better way was a brief exposure to a Macintosh program called "Expressionist." I never really worked much with this program but I clearly could see how nice something like this would be for us IIGS-using math teachers. Which brings us to *Formulate*...

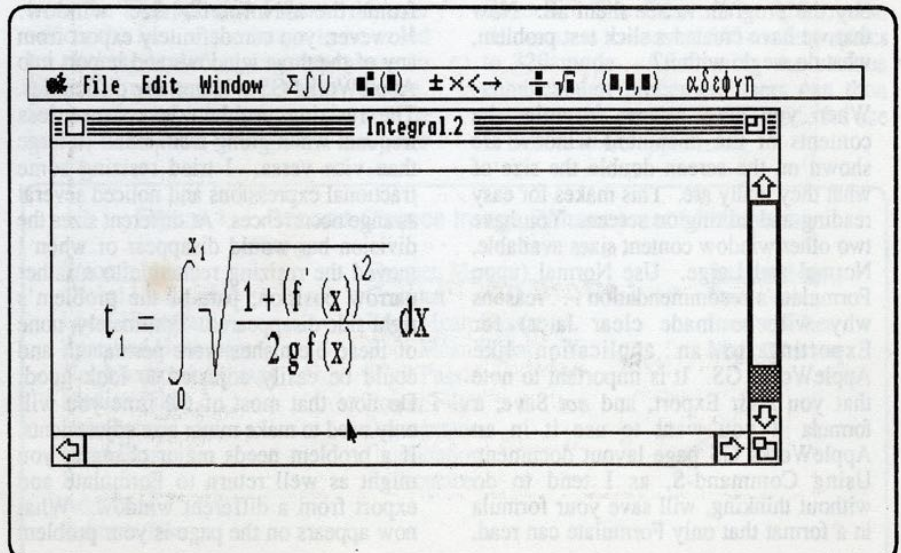
The Formulate Way

Formulate comes on two 3.5-inch disks. One of the disks has examples of formulas both simple and complex. Just from these examples, you'll be impressed with what *Formulate* can do, and I suggest you first spend some time looking at these samples. Another nice touch is the inclusion of additional point sizes of the Times font (48, 56, 72, 80, and 96 points). This, of course, assumes you already have the standard Times point sizes in the *:System:Fonts folder. Since Seven Hills is known for their fine fonts, it comes as no surprise to see how nicely the letters, numbers, and symbols look. They certainly rival those TrueType fonts generated by Pointless. However, don't be tempted to use the TrueType Symbol font. I found that some Greek letters, theta in particular, when placed in a denominator will cross over the division line.

Once you have installed all the fonts, you are ready to get the most from *Formulate*. The instruction booklet is short and sweet, and the program is quite user friendly. It does not take long to get used to creating formulas and equations. In doing so, you

will probably use the Command-A (Append) and Command-I (Insert) keystrokes the most. In short, when creating a new formula you start off by selecting a waiting question mark symbol in the formula window. The text you type here actually appears in an edit window and does not show up in the formula window until you hit the return key. After hitting return, the text you typed replaces the question mark and you must then select it and either do something to it from a pull-down menu (like integration, summation, etc.), or press Command-A to append another question mark to the end of your formula. If you can anticipate all the details needed in a formula, then you can start off by pressing Command-A several times, which will give you several question marks to work with. Select the question mark you want, type in the portion of the formula you want in that position, and then hit the return key to move the cursor to the next question mark. If you forget something back at the beginning, position the cursor where you want it, then use Insert. The familiar question mark appears awaiting your next move. All this and more becomes second nature by the third or fourth problem.

I use *Formulate* on a IIGS with an InnerDrive 40MB hard drive, 4MB of RAM, and a TransWarp GS. The instructions for hard drive installation are straightforward and quick to complete. Those with a single 3.5-inch drive and no hard drive will have to do some disk swapping and may have a problem starting a new formula. When I tried it, my system froze right after what seemed to be the last disk swap. If you have this problem, give the Seven Hills technical support people a call. They are aware of this problem and probably have it solved by now. A better solution would be to simply part with the dollars and purchase a hard drive!



Once at the Finder, you simply double-click the neat Formulate icon to run the program. In a matter of seconds you'll see a familiar pull-down menu bar. The Menus available are the standard ones: Apple, File, Edit, and Window along with the exciting new ones you bought the program for. These are called "Term Menus." Integration and summation are on one Term menu while the exponent and subscript forms are on another. Seven Hills recommends that "=", "+", "<", and other similar symbols be selected from one of these menus, instead of typed from the keyboard. (They must know about my typing abilities!) You'll be pleased to see a separate Term menu for creating various forms of a matrices and determinants ranging from a 1x2, 2x1, or 3x3 to one of an infinite representation of terms. Trigonometry teachers will delight in the 80 Greek symbols, both upper and lower case, which can easily be summoned from another menu. No more switching over to the Symbol font and using option key combinations. Theta, Pi, and infinity, to name a few, all pull down in an instant. The Term menu I like and appreciate the most is the one with the square root symbol and fraction form. You first create the "radicand," which can be a messy fraction with ugly exponents, select it all, grab the square root symbol from the Term menu, and then, bingo! The whole mess is surrounded by the nicest looking square root symbol you have ever seen! With the help of the Insert command, throw in an integration symbol at the beginning, put in the limits of integration (which can be fractions, exponents, or any old thing you'd like to use to torture your students) and then sign it, for now it's ready to hang on a wall. It's your masterpiece! And to think that this formula only took a few minutes to create. There are many more items in each Term menu than what I have touched on here, but you'll have to buy the program to see them all. Now that we have created a slick test problem, what do we do with it?

When you start a new formula, the contents of the document window are shown on the screen double the size of what they really are. This makes for easy reading and editing on screen. You have two other window content sizes available, Normal and Large. Use Normal (upon Formulate's recommendation . . . reasons why will be made clear later) for Exporting to an application like AppleWorks GS. It is important to note that you *must* Export, and *not* Save, a formula if you want to use it in an AppleWorks GS page layout document. Using Command-S, as I tend to do without thinking, will save your formula in a format that only Formulate can read.

This is great if you want to go back later and edit a formula, but, unfortunately, this format can't be read by AppleWorks GS. When exporting formulas you have three format choices: QuickDraw PICT, Apple Preferred, or Unpacked Screen. (By the way, this last format is the only format I could successfully import into HyperStudio.) I normally use the default QuickDraw PICT format, since this is what is required to take full advantage of the AppleWorks GS page layout module. (A QuickDraw PICT gives you an *object-oriented* description of your formula. This will print out much better than the bit-mapped versions of your formula would.) Once all the problems are done and exported to some nice location (taking up about 1K of disk space each), launch into AppleWorks GS and get ready to import those little puppies. Sound like a hassle? Don't like being stuck with two sets of questions taking up precious space on a disk or hard drive? All is not as bad as it appears, really. As for the many files you end up creating, just delete them after you have completed the test. Formulate makes it easy to start and complete a problem in minutes, so saving for future editing is not really a big concern (at least not for me).

There is a special feeling of power after you import these complicated looking problems into an AppleWorks GS page layout document. You can't help think, "Wow, did I do that?" Since they are exported as "object-oriented" QuickDraw PICT graphics, they can easily be moved and resized. But beware of resizing. I had several crashes when trying to enlarge a problem on a 1.25MB IIGS. On a 4MB system the crashes were far less frequent. The folks at Seven Hills suggest that enlarging a graphic is easier for the computer to process than shrinking a large one, so make sure you export the problem from the "Normal" size window. However, you can definitely export from any of the three windows and import into AppleWorks GS without any difficulties. The resizing problem just seems less frequent when going from small to large than vice versa. I tried resizing some fractional expressions and noticed several strange occurrences. At different sizes the division bar would disappear or when I moved the resizing rectangle to a rather narrow position, part of the problem's right side disappeared. Fortunately, none of these blemishes were permanent and could be easily adjusted to look good. Do note that most of the time you will only need to make minor size adjustments. If a problem needs major changes, you might as well return to Formulate and export from a different window. What now appears on the page is your problem

right where you want it without any object boxes cluttering your view. That's the good news. The bad news is you can't do any editing here. If you discover an error in the problem you must return to Formulate to call up the problem for editing, fix it, then return to the AppleWorks GS page layout module where you import the new problem. Such an inconvenience tends to make you more careful during your work within Formulate.

Hopes And Fears

Nothing in this world is perfect and so it is with Formulate. In fact, Seven Hills is the first to admit that they are *not* math teachers and encourage comments from those in the know. What I mention here will be no surprise to Seven Hills since I have already been in communication with them about these little changes. One change I would like to see is an improvement of the summation and integration signs. True, one can tell in an instant what they are, but they are not as pretty as the ones found in the Symbol font. In the Term menu with the Greek symbols, I would like to see the angle symbol, "<". The Term menu with the symbols like addition, subtraction, etc., should have included the old division symbol, "+". Speaking of division, the other symbol for long division would fit nicely in the Term menu where the square root symbol resides. But, the most useful change would be to make the program a New Desk Accessory. Then you could start off inside AppleWorks GS and jump to Formulate whenever you needed. Another problem that needs addressing is the fact that GraphicWriter III can not import the QuickDraw PICT format. This is a problem Seven Hills is working on right now.

Conclusion

What does all this boil down to? Well let's put it this way: Formulate is to Math teachers as Pointless is to users of an ImageWriter II as System 6 is to all IIGS users. High schools and colleges which still use Apple IIGS computers should not be without Formulate in their math departments.

I feel Formulate comes at a good time in the life of the Apple IIGS. With System 6, Pointless, Express, and other recently released IIGS programs, I have a new feeling of hope for our beloved computer. If you are a IIGS user who is also a math teacher in search of good clear documents (may the dittos days be gone forever!), you would be wise to purchase this program. Test making has never been so entertaining!

GS+

Second Chance v2.0 & X2

Programmed by John R. Majka

Retail prices

Second Chance: \$49.95

X2: \$9.95

Not copy protected

Requires 3.5-inch drive, 1 MB RAM

Raptor, Inc.

P. O. Box 20756

Louisville, KY 40250

(502) 491-6828

Reviewed by Mark Raness

Give Graphics A Second Chance

Second Chance is a graphics enhancement program designed to improve the quality of 320-mode gray-scale graphics. In addition to a variety of processes for enhancing 320-mode images, Second Chance also includes utilities to convert color images to black-and-white and another to convert 320-mode graphics to 640 mode for use in page layout and hypermedia applications. X2 is an abbreviated version of the Second Chance utilities whose main function is 320 to 640 mode conversions.

When I first received Second Chance for review, I did the opposite of what I usually do when I look at a new program; I immediately opened the manual and started reading. That was a mistake! After the first few pages I had the same feeling in the pit of my stomach as I did the day they passed out textbooks in trigonometry class. While the manual is readable, it is imposing at first glance. The latest version contains a lengthy on-disk manual addendum that outlines new features that have been added since the manual was printed. It is a must-read for anyone planning to take advantage of the power of Second Chance. The program itself is desktop based and fairly intuitive.

The on-disk addendum makes users aware of a possible problem that may cause the menu bar to turn solid black. This problem is caused by certain graphics neglecting to initialize the color palettes used by the Apple menu. Graphics created on machines other than a IIGS can cause this problem as well as certain IIGS digitizing programs. In my particular case, images created using Allison caused the menu bar to turn black. There is a menu item under the edit menu, called *Fixup Menu*, as well as a command key equivalent (Command-M) to restore the menu bar. When you save the processed image, the correct initialized palettes will be saved with it, so the problem will not reoccur if you open the same image again.

Features Of Second Chance

The Second Chance manual states that "graphics enhancement is more of an art than a science" and that statement couldn't be more true. Second Chance offers no less than twenty-one unique graphic enhancements and many of those offer user-defined variables. If users select and start a particular enhancement process and are not pleased with the changes they are viewing on the screen, all they have to do to abort the process is hit Command-Period. The original image returns to allow a new enhancement process to be chosen. A scroll bar also allows the image to scroll while the enhancement process is in progress. While the manual describes each enhancement process and recommends certain ones for particular original images, I discovered that the more I experimented with a particular image the more comfortable I became with each process. Much of the technical information in each description became more understandable when the results were directly observable on the screen.

In addition to Fixup Menu, the File menu includes items to restore the original and enhanced images. These options allow the user to toggle between the original and enhanced images and see exactly what effect the enhancement process had on the image. Another choice in the File pull-down menu is an option called *Save 2 x H* that allows the image to be saved at twice the original's height for importation into a page layout program such as AppleWorks GS. I've done the image stretching manually many times before with less than perfect results, so this feature will prove to be a valuable one for those who use images in page layouts.

A feature that is not visibly available in the File menu is an option to save only a part of an image. Before selecting Save from the File pull-down menu, the user selects the area of the image to be saved by clicking and dragging the mouse to place a rectangle over the image. Supposedly, only the area selected will be saved and can then be imported into other

programs. Unfortunately, using the copy sent for review, I could not get this function to work under any circumstances. The manual addendum stated that Raptor had had some problems with this feature also. When I opened up the image with both Second Chance and AppleWorks GS, the image was streaked and blurred. The image was the correct size, but was unusable. After contacting John R. Majka at Raptor, I was pleased to find that in the latest release version of Second Chance, this feature is fully operational.

The Edit pull-down menu includes six Second Chance features in addition to the standard edit options for use by New Desk Accessories. *Invert Image* reverses the gray scale levels in an image. Some enhancement processes seem to reverse gray levels and this option allows the user to reverse the gray levels while leaving the graphic enhancements intact. Another option, called *Swap B <-> W*, corrects the palettes of some images imported from other computer formats. This process changes the blacks and whites in an image and corrects inverted gray scale palettes.

There are two different processes that change color images to black and white images. Both work well, though the second option takes about five times as long to process the image.

Two of the most powerful options of Second Chance are *Convert to 640* and *Convert to 320*. Simply put, Second Chance does the best 320 to 640 mode conversions I've yet seen. The images are amazingly sharp on the screen and look fine in hypermedia applications.

Unfortunately, the digitized images don't print out well in 640 mode, so use in page layout applications is limited, but this is not due to any problems with Second Chance. The *Convert to 320* option allows users to convert 640-mode graphics to 320 mode. After using the various enhancement processes, users can then reconvert the graphic to 640 mode for use in their selected application.

Figure 1 - Second Chance Image Enhancement Processes

Smooth Menu

Global Histogram
Local Histogram
Specified Histogram
Neighborhood Average
Median Filter
Low Pass
Band Pass
Band Stop
Add Two
Subtract Two

Sharpen Menu

Contrast
Root Mean Square : L
Root Mean Square : X
High Pass
Power Filter
Segmentation
Illumination
Reflectance

Restore Menu

Deconvolve
Inverse Filter
Majka Restore

The final option in the Edit pull-down menu is *Switch Mode*. Only Apple Preferred Format images contain information about the mode of the image and opening other formats will cause the user to be dumped automatically into 320 mode even if the image is actually a 640-mode picture. The Switch Mode option lets users jump back and forth between 320 and 640 modes to help deal with this problem. The palettes and pixels remain unchanged, only the mode is changed.

The Enhancement Processes

The next three pull-down menus, Smooth, Sharpen, and Restore contain the twenty-one actual image enhancement processes. (See Figure 1 on the previous page.) The ten enhancement processes in the Smooth pull-down menu remove detail from an image. They can help remove "noise" created during digitization and also smooth the edges of enlarged sections of images.

There are eight image enhancement processes in the Sharpen pull-down menu. As the name implies, these processes tend to sharpen the image. The process I found most useful, *Contrast*, allows the users to select a threshold value between 0 and 15. Any pixel with a value less than the threshold will be made darker, while pixels with a value greater than or equal to the threshold will be made lighter.

The Restore pull-down menu contains three processes that will restore images smeared during digitization. All three of these enhancement processes allow the user to set the pixel distance to unsmear and then process image either horizontally or vertically.

Bringing It All Together...

It is important to note that the image processing times vary greatly. One of the

image enhancement processes, Invert Image, requires as little as nine seconds while others, such as both Illumination and Reflectance, can take as long as nine hours (yes, I said nine hours!) on an unaccelerated IIGS. Computers with either a TransWarp GS or a Zip GS will notice increased speed in processing times proportional to the speed their machines are running at. The manual also states that a math coprocessor card may also speed up the enhancement process.

X2 contains none of the previously mentioned image enhancement processes. Its features include "Save 2 x H," both "Color to B/W" processes, "Convert to 640," "Convert to 320," and "Switch Mode." For those people looking for the best available 320 to 640 mode conversion program, I highly recommend X2. It is straightforward and easy to use. Converting digitized images from 320 to 640 mode is a breeze with X2 and users will be pleased with the results in hypermedia applications.

Second Chance is a powerful graphic enhancement program. Those who deal extensively with graphics on the IIGS will find it very useful. Anyone with a digitizing board or a scanner would probably be well advised to buy Second Chance. For the casual user who downloads ready-made images from online services, Second Chance would be of little use. Second Chance is better suited for power users who prepare images for uploading to online services or need to enhance images for use in Hypermedia applications.

I can't stress enough that this program will take some time to master. The process of enhancing scanned or digitized images is not for the weak of heart. While the manual suggests certain enhancement

processes for a specific problem an image may have, you may have to try many different processes to achieve the desired results. Some processes may have to be performed several times in succession on an image while sometimes the best results are achieved through using several different enhancement processes on the same image. Experimentation is the key to success when using Second Chance.

X2 is an excellent value for anyone who uses graphics in hypermedia applications such as HyperStudio and HyperCard IIGS. Scanned 320-mode line art will convert nicely to 640 mode for inclusion in page layout applications, although, as mentioned earlier, digitized images generally don't print out well.

I looked at several versions of Second Chance and X2 while preparing this review. I was pleased to see that Raptor is not resting on its laurels. Many new features have been added to both programs. Most of the image enhancement processes have been dramatically sped up and both of the bugs I found in earlier versions had been corrected in later versions. Raptor has maintained an active online support area on America OnLine for several years. Questions and concerns with its line of products are dealt with swiftly.

The average user who occasionally has the need to convert 320-mode graphics to 640 mode for inclusion in hypermedia applications will find X2 to be a valuable addition to their program library. Graphics fanatics will find Second Chance indispensable in further processing their digitized and scanned images. It is a powerful program but may intimidate many users so that they never truly take advantage of the incredible power available in the enhancement processes. **GS+**

Moving?

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ShoeBox

Programmed by Greg Willits (Powerware Products)

Retail price: \$45.96

Typical mail-order price: \$36.95

Not copy protected

Requires 1.5 MB RAM, 3.5-inch drive, and a hard drive

Seven Hills Software

2310 Oxford Road

Tallahassee, FL 32304-3930

Orders and Information: (904) 575-0566

Reviewed By Mike Murley

Hyperware?

Seven Hills Software, the publishers of GraphicWriter III, are aggressively trying to provide IIGS users with excellent IIGS-specific software. Recently they introduced one of the few commercial hyperware products using Apple's HyperCard IIGS—ShoeBox.

ShoeBox is the latest in a long line of programs designed to automate the numerous record keeping tasks many of us thought we bought a computer to do. As the name implies, ShoeBox is a series of HyperCard IIGS stacks that provides you with an electronic "shoebbox" for storing the kinds of personal information that people usually keep in real shoeboxes: addresses, insurance policy information, notes, and so on.

ShoeBox requires HyperCard IIGS. Since there isn't a run-time version of HyperCard IIGS (like there is with Roger Wagner's HyperStudio), Seven Hills has licensed HyperCard IIGS for distribution with ShoeBox. That means you get the HyperCard IIGS *application* as a part of the ShoeBox package. What you *don't* get are the three HyperCard IIGS manuals or any of the tool and idea stacks that are included in the normal HyperCard IIGS package.

A Reason To Buy A Hard Drive?

ShoeBox also requires a hard drive. There really isn't any way to run it without one. ShoeBox is another reason (beside System 6.0) to buy a hard drive. My copy of ShoeBox came with HyperCard IIGS v1.0, but Seven Hills is shipping the current versions of ShoeBox with HyperCard IIGS v1.1 included. Since I'm a Seven Hills Partner, my copy of ShoeBox came compressed as part of a Partner's update and without a manual. Not a problem. The Installer does the hard bits for you and the program is so intuitive I doubt you'll ever need a manual. And to make sure you never need to use the manual, ShoeBox comes

with an extensive help stack—an online manual—complete with chapters on every sub-stack and profusely illustrated.

Once installed, ShoeBox provides you with an access area where you can either launch the main sub-stacks (Income, Expenses, Budget, Valuables, Family, Vehicles, Insurance, or custom) or you can launch the ExtenStacks (extension stacks)—Access, Message Center, Addresses, File 'n' Find, or Emergency. The card backgrounds are a rather pleasant "splashed" design and each individual card is well laid out.

Using ShoeBox is really simple. Once you launch ShoeBox from the HyperCard IIGS home card, you just click on the area you want to use and then enter text into the various fields. Across the top of each card are point and click icons for various functions—adding a note, adding another card, trashing your entry, finding specific text, and printing your card. A simple Command-P will print any card in ShoeBox.

Each sub-stack and ExtenStack (except the Budget stack—more on that below...) is a database. Income, for example, provides 9 categories of cards to enter your various income types—everything from employers to royalties and alimony. You can have multiple cards of each type. Income items (and Expense items!) can be linked into the Budget. The Budget sub-stack adds and subtracts income and expenses. It isn't exactly a financial program, but it does set up a pretty good budget.

Main Stacks

The Family sub-stack provides an area to list each family member. It also provides links to the General, Education, Medical, and Statistics cards for each person.

Vehicles has two card areas per vehicle: General and Servicing. Insurance is likewise broken down by Home Owners, Renters, Medical, Automobile, and Life categories.

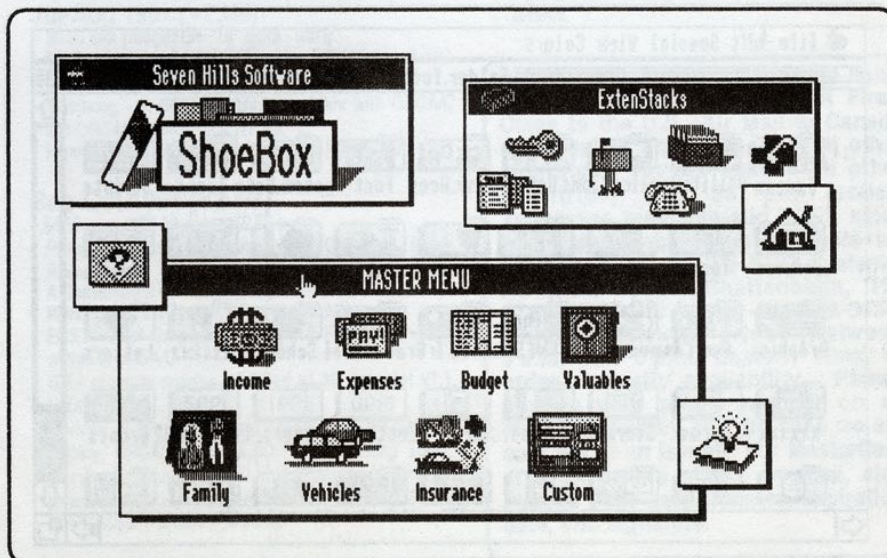
The Custom stack is a pre-laid-out database with fields of varying sizes just waiting for you to label them. It's not DB Master Pro, but it'll work for most simple database requirements (a client list for a home business, perhaps).

A neat feature is that once you enter text in a field and then close that card, ShoeBox/HyperCard IIGS saves it for you, which means that if you accidentally kick your power cord out of the wall after laboriously entering all this data, you won't have to rebuild everything.

ExtenStacks

New in ShoeBox are *ExtenStacks*. These do more than act as flat databases through *xcmds*—HyperCard IIGS's external commands. While two of the ExtenStacks (Emergency Numbers and File 'n' Find) are typical database type stacks, the other three perform some unique actions. Emergency Numbers is a way to organize and then print those numbers you won't be coherent enough to look up in a crisis so you can post them next to the phone. File 'n' Find is a series of "index cards" to post reference book information on—like a student would use to prepare a bibliography for a term paper.

The Access ExtenStacks allows you to set user access throughout ShoeBox so that you can post private messages in the Message Center ExtenStack (or have access to read all messages—something parents will go for!). The Message Center itself is analogous to the family bulletin board on the kitchen wall—except that you can post private messages. The



Address ExtenStacks looks like a typical address book, except that it will prepare lists (holiday cards, for example) and clicking on the telephone button will dial out the listed number (if you have a modem).

Put It Where?

As useful as ShoeBox is, it has some distinct drawbacks. The Message Center ExtenStack would only really be useful in an environment where the IIGS was centrally located and was on all the time with ShoeBox/HyperCard IIGS running. How many IIGS-using families have their system set up in the kitchen (as central as you can get in most families!)? An address book and manually dialing is

faster than booting and launching ShoeBox to get the Address ExtenStack online. Which touches on another problem, HyperCard and ShoeBox are slow, even on an accelerated IIGS. While this isn't necessarily the fault of ShoeBox, the lack of speed of the HyperCard IIGS/ShoeBox combination can be very annoying at times.

Conclusions

ShoeBox is a well done and very useful application covering two areas that have always generated interest (and not much else)—the home organizer program (a Tandy favorite!) and hypermedia. While IIGS hypermedia has been slow in taking off (as people come to grips with the hard

drive and RAM requirements), home organizers have always been the worst excuse anyone ever came up with for buying a computer. ShoeBox on the other hand, just might be the first worthwhile home organizer and one of the best applications of hypermedia that anyone has yet come up with. I know that when I started filling in all the countless text fields I had to rummage through numerous file drawers, boxes, address books, etc. I have always felt that home organizer programs were hardly worth while, but this one is. If for no other reason than to put all those little bits of information you have stashed away in one ShoeBox... and, you get the HyperCard IIGS application with it too. **GS+**

Icons

By Steven W. Disbrow

Greetings! And welcome back to our regular "Icons" column. We didn't have enough icons submitted to have an actual contest last time, so I decided to wait until this issue to award our next prize. Unfortunately, we only had one other set of icons submitted in time for the contest. But, at least now we have two contenders to pick from.

All of the icon files described here are on your **GS+** Disk in the **Icons** folder. Most of these icons aren't intended to be used with any one particular program. So, you will have to have an *icon editor* to look at them and modify them for your own use. Two of the more popular icon editors are *IconEd* by Paul Elseth, and *DicEd* by Dave Lyons. Both of these are shareware programs that you can obtain from just about any online service, shareware clearing house or your local user group. If

you can't find either of these icon editors, give me a call at (615) 843-3988 and I'll try to help you locate a copy.

For our new readers I'll explain how this works. In each issue of **GS+ Magazine**, we take all of the icons that have been sent to us since last issue and pick a single icon or group of icons from all of the icons that are sent to us as the "best." We give the person that submitted the icon (or icons) either a **GS+** T-Shirt or an extra issue added to their subscription. Normally, we also pick a first and second runner up, but since we only have two contenders this time, we only have a winner and a...

Not-Winner

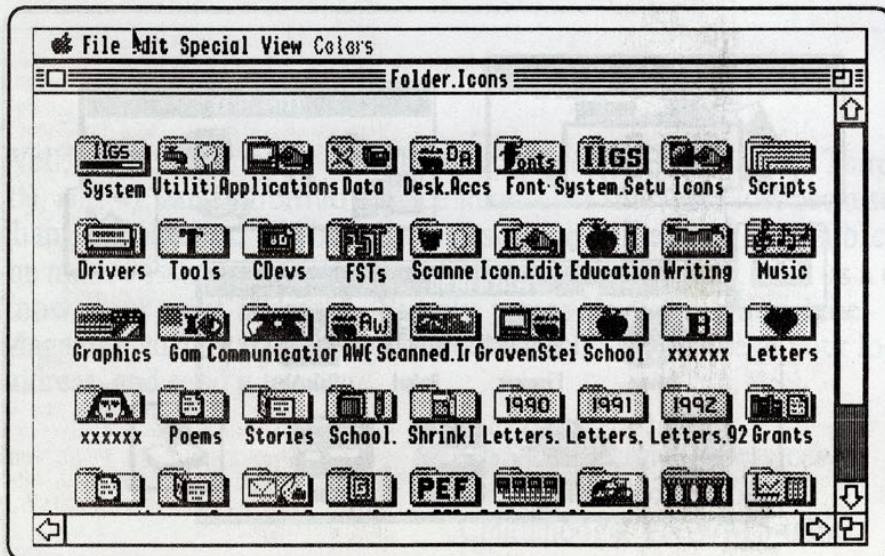
The icons that Keith Passmore of Phoenix, AZ sent us are great. No doubt about it. They look good and they are for

a bunch of great games: Pirates, HoverBlade, Balance of Power, Beyond Zork (my favorite), and the shareware hit, CosmoCade. (Keith's icons are on your **GS+** Disk in the **GS-ShrinkIt** file, **ContestIcon.SHK** which is in the **Icons** folder.) So why didn't Keith win this time around? Well, to find out, lets take a look at the icons submitted by our...

Winner

Along with his icons, Burke Cochran of Petaluma, CA sent us nice letter telling about his favorite new feature of the new Finder v6.0: the ability to put folders on the desktop. "This means that I don't have to spend time going into the nested layers of my hard disk all the time. It's great to have folder icons that are attractive and easy to spot." I couldn't agree more. And that's why Burke won this time out. That and he sent us no fewer than 53 different folder icons. Included in that list are easy to recognize icons for the **System** folder, the **Fonts** folder, the **Drivers** folder and a bunch of other folders for things like, word processing documents, ShrinkIt archives and even love letters. (Burke's icons are on your **GS+** Disk in the **GS-ShrinkIt** file, **ContestIcon.SHK** which is in the **Icons** folder.) So, for putting this new feature of the Finder to such good use, Burke is this issue's winner. Since he didn't specify a T-Shirt size, I'll be extending his **GS+** subscription for an issue.

That's all for this time. Thanks to both Burke and Keith for sending in their icons. Please don't forget that we are also looking for HyperCard IIGS and HyperStudio icons as well as Finder icons! So get busy and start sending in those icons (and don't forget to tell us your t-shirt size!) **GS+**



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- \$4.50 mag • \$6.50 disk • \$9.50 both
- System Software 5.0 Compatibility Chart
- NoDOS - A file utility New Desk Accessory complete with ORCA/C source code on disk
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- Reviews of Arkanoid II (new custom levels on disk), Crystal Quest, ORCA/C, Rocket Ranger, Silpheed, Test Drive II, TransWarp GS, Turbo Mouse ADB

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- Original icons and new levels for Laser Force on disk

Jan-Feb 1990 (V1.N3)

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- Winning Arkanoid II Levels
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- Beginner's Guide to System Disks - Part 1
- GS/OS prefixes - PreFixer CDev and ORCA/Pascal source code on disk
- Brush with Greatness - How your IIGS makes colors
- Reviews of CMS SDRM 45 Megabyte Removable Hard Drive, S&S-RAMCard, DataLink Express modem, Visionary GS digitizer, GraphicWriter III, ZapLink, McGee, Math Blaster Plus IIGS, The New Talking Stickybear Alphabet, a sneak peek at the ZipGS

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- Interview with Brian Greenstone (programmer of Xenocide)
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- Shuffle - an Init file that allows you to move desktop windows from the foreground to the background (ORCAM)
- Battery Brain - CDev saves BRAM parameters to disk (ORCA/C)
- Reviews of GS Sauce memory card, Salvation: Wings, World GeoGraeph, Orange Cherry Talking Schoolhouse series, QIX, Solitaire Royale, InnerExpress

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- GS+ program updates - EGOed v1.32, Transfusion v1.1

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- GS+ program updates - Battery Brain v1.1, EGOed v1.32c (now written in ORCA/C), GWill TeachText Translator v1.1
- Reviews of ZipGSX, LightningScan, Design Your Own Home, Print Shop Companion IIGS, Your IIGS Guide, Dragon Wars, 2088: The Cryllan Mission - Second Scenario, Space Ace, Sinbad & the Throne of the Falcon

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- Softlock - A password protection NDA with ORCA/C source code on disk
- GS+ program updates - EGOed v1.34, NoDOS v1.5
- Reviews of TMS Pro R45 Removable Hard Drive, RamFAST/SCSI Card, HyperCard IIGS vs. HyperStudio, McGee at the Fun Fair, Talking Classroom, Talking Multiplication and Division, Bouncing Bluster II, Space Shark, Transylvania III

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- FGS (Fractal Graphics & Such) - A Fractal Generator written in ORCA/C
- GS+ program updates - EGOed v1.36, Autopilot v1.1, NoDOS v1.6
- Reviews of two 100MB hard drives, Nite Owl Slide-On Battery, ORCA/Integer BASIC, ORCA Talking Tools, Storybook Weaver: World of Adventure, HyperBole, HoverBlade, Shareware: DeskTop Painter, SoundSmith, IIGS Classic: The Bard's Tale IIGS

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- GS+ program updates - EGOed v1.4: Find and Replace fonts, sizes and styles
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- More Fun with OS Library
- GS+ program updates - EGOed v1.41, Replicator v1.1
- Reviews of Shadow Hard Drive, Pointless, Desktop Enhancer v1.1, ANSITerm, Learn to Program in Pascal, ORCAM v2.0, Secrets of Bharas, 3 shareware reviews.

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Working With The Toolbox

By Josef W. Wankerl
Intermission: System 6 Updates

Since this issue of *GS+* Magazine is dealing primarily with System 6, I thought I'd take a break from learning new tool sets and take a look at what System 6 has done to the tool sets that I've already covered. I'd like to tell you *everything* about all the new calls, but that would be ridiculous, especially since Apple has provided all of that information in "Engineering Reference Specification" (ERS) form, available from Resource Central. (See "What's New" and the "Glossary" in this issue for more information.) If you plan to program with System 6, I highly recommend that you order the ERSes from Resource Central, as well as all of the *Apple IIGS Toolbox Reference* books.

Tool Locator

There are many new bits for `StartUpTools`, which you can read for yourself in the *Apple IIGS Toolbox Changes for System Software 6.0 ERS*, but the most significant change to the Tool Locator is the addition of *request procedures*. Two new calls, `AcceptRequests` and `SendRequest`, provide a mechanism for one application to communicate with another one; for example, a permanent initialization file that can communicate with the Finder, as in the case of a Finder Extension.

Inter-process Communication (IPC) is accomplished through the `AcceptRequests` and `SendRequest` tool calls. The theory behind IPC is that your code first installs a request handler (you tell the system that you are ready to accept requests with the `AcceptRequests` call) and then when someone needs to talk to you, they issue the `SendRequest` call. The system then scans through all the request procedures installed and calls the appropriate one. So, let's say that you want to write a request procedure that will compute a checksum on a buffer (add up all the bytes in the buffer mod 256). First you must install the request procedure. `AcceptRequests` needs three parameters: a pointer to the name of the request procedure (Apple has defined a very good set of naming conventions for

request handlers in the *Finder 6.0 ERS*), the memory ID of the request handler, and a pointer to the start of the request handler code. Figure 1 shows what a sample `AcceptRequests` call would look like.

If you need to remove the request handler, simply call `AcceptRequests` again with the same parameters, except instead of passing a pointer to the request handler code, pass a `NIL` value.

Calling the request procedure is as easy as installing it. After all, everything is just a tool call—how difficult is it to make a tool call? The `SendRequest` call takes five parameters: a special code for the request procedure to act on, a flags word which determines how the request should be sent, a target specifier which determines which request procedures should be called, a data in value (`dataIn`), and a data out value (`dataOut`). Requests can be sent to all installed request procedures, sent to a named request procedure, or sent to request procedures with a specified ID. When a request procedure accepts the request, `SendRequest` returns control to the program that issued the call unless the `stopAfterOne` bit is clear in the flags word, in which case the request is sent to the remaining request procedures no matter how many times it is accepted. The `dataIn` parameter is a Long value that can be any kind of data. Normally the `dataIn` parameter is either an immediate value to take action upon or a pointer to a structure. The `dataOut` parameter is always a pointer to an output buffer where results that the request procedure generates can be stored.

So, to send a request to the checksum request procedure, you would code the line shown in Figure 2.

For examples of how to code a request procedure, see the "EGOed v1.6" and "Rebuild Desktop" articles elsewhere in this issue.

The final addition to the Tool Locator is the `GetMsgHandle` call. The `GetMsgHandle` call returns the actual handle of a message contained in the message center. A message handle can be

retrieved by name, by type, or by an index number. The `GetMsgHandle` call greatly simplifies working with the message center, since you can make one tool call, `GetMsgHandle`, to find a message, instead of making two or three calls, one to `NewHandle` to obtain some scratch memory, one to `MessageByName` if you need a named message, and one to `MessageCenter` to retrieve the message.

Memory Manager

The Memory Manager, for the most part, has remain unchanged except for a bug fix or two. There is only one new call for the memory manager under System 6: `SetHandleID`. The `SetHandleID` call will change the ID of a particular memory handle. One obvious use for `SetHandleID` is for Control Panels to load in code that will stay around after the boot procedure is done. To see how `SetHandleID` is used in this case, take a look at the "Whoosh" article elsewhere in this issue.

Miscellaneous Tools

There are six new calls in the Miscellaneous Tools.

The first call, `SysBeep2`, provides an alternate method of beeping the speaker. Instead of blindly beeping the speaker, `SysBeep2` takes a type of beep to produce and then makes the `SendRequest` call to let any request procedures handle the beep. The request procedure can do anything from playing a sound, to flashing the menu bar, to doing nothing and letting a normal `SysBeep` call be made.

The `VersionString` call works in conjunction with the Apple IIGS version system as described in Apple IIGS Technical Note #100, which is on your *GS+* Disk. The `VersionString` call takes a 32-bit version number and converts it into a Pascal type string suitable for displaying on the screen. Another text call, `StringToText`, takes a string which may have special characters such as `™`, `©`, or `®` and produces a resultant string, converting any special characters into plain text such as (TM), (C), or (R).

Figure 1 - Installing A Request Handler

```
AcceptRequests('EGO Systems~Checksum~', HandlerID, @Checksum);
```

Figure 2 - Sending A Request

```
SendRequest($8000, stopAfterOne+sendToName, 'EGO Systems~Checksum~', @Buffer, @outData);
```


The ShowBootInfo call is used by system extensions when the system is booting. ShowBootInfo draws an icon on the graphical boot screen as well as displaying textual information on the text boot screen. The ShowBootInfo call takes two parameters: a pointer to a Pascal string to display on the text boot screen and a pointer to the icon to draw on the graphical boot screen. If you don't want any text drawn on the text boot screen, you can pass a NIL value. If bit 31 of the pointer to the icon is set, then the icon will be drawn on top of the icon that was previously drawn.

The ScanDevices call goes through the GS/OS device list and issues a GS/OS DStatus call to each device containing removable media, except for 5.25-inch drives. ScanDevices then returns the number of the first device that had a disk insertion.

The WaitUntil call was added in order to keep accelerated machines operating at a reasonable speed for humans to interact with (i.e. flashing the menu bar will always take the same amount of time). WaitUntil will never slow things down if the system is already slow.

QuickDraw II

Only two new calls have been added to QuickDraw II, and they deal with setting dithered pen patterns which look solid in 640 mode. Get640Colors returns a table to the standard sixteen solid dithered patterns for 640 mode. If you need to set the pen pattern to a solid 640 mode dithered solid color, the Set640Color call can be used instead of first calling Get640Colors and then finding the pen pattern in the returned table, and finally calling SetPenPat.

Event Manager

There are some internal changes to the Event Manager to allow some features of System 6 (such as SysBeep2), to work properly, but overall the Event Manager

has not changed much. There are no new calls to learn with the Event Manager.

Resource Manager

In addition to bug fixes, the Resource Manager now makes better use of named resources. Each resource is uniquely identified by a type and an ID, but it may also be identified by a type and a name. To find the ID of a resource whose name and type you know, you issue the RMFindNamedResource call. To find the name of a resource whose type and ID you know, you issue the RMGetResourceName call. To change the name of a resource (you must know the type and ID) you issue the RMSetResourceName call. To make using named resources even easier, as if those three calls weren't enough, you can also load a resource if you know its type and name with the RMLoadNamedResource call. The final new Resource Manager call is LoadResource2, which works exactly the same way as LoadResource does except that it returns information on the previous state of the resource (not previously in memory, or the attributes word of the previous handle).

Window Manager

System 6 adds a whole new level of functionality to the Window Manager through the incorporation of the old Fake Modal Dialog user tool set. The Fake Modal Dialog calls that now reside in the Window Manager allow you to create alert windows (windows with an alert frame) that are movable. You create the window in exactly the same way you would create a normal window, but instead of calling TaskMaster to handle the events, you enter a separate event loop calling DoModalWindow to handle the events. The DoModalWindow call is very flexible and takes lots of parameters—too many parameters, in fact, to describe here.

Previously, if your window had an info bar and you wanted to change its height, it

was impossible. System 6 adds the ResizeInfoBar call so now any standard window's info bar can be resized vertically. Another new call is the HandleDiskInsert call. If you are writing an application in which users will insert disks and your application has to act on the disk inserts, the HandleDiskInsert call will do a lot of the dirty work for you. If a user inserts an unformatted disk, HandleDiskInsert will inform the user and ask if the disk should be initialized or ejected and then inform your application what happened. To take advantage of this feature you have to place the HandleDiskInsert call in your main event loop. There are a few more new Window Manager calls, but you will rarely have to use them, so I'll let you read up on those on your own.

Back To School

Well, believe it or not, we're all caught up with System 6! Stay tuned for your next issue where I'll go into the Control Manager. If you don't already have the System 6 ERSes, you should really consider sinking some money into them. I can guarantee that System 6 will make your life as a programmer much easier. If you had trouble following this article, or the Toolbox references, or even the System 6 ERSes, let me know and I'll see what I can do to clear things up for you.

So far, the Working With The Toolbox series has received very favorable reviews, so I've contemplated spinning off a new series: "Working With GS/OS." Would anybody be interested in such a topic? Topics that would be covered would range from simply using GS/OS to read and write files, to how to copy files, to using character devices like the .CONSOLE driver, and even maybe how to write a device driver. If so, let me know about it by filling out the feedback form on your GS+ Disk or by sending me a real letter or some e-mail.

GS+

Errata

There is a small, but important, omission from the Only3D.cc source code file for last issue's "3-D Demo II" program. In that file, the first line of the function RealSqrt () should be:

```
if (value == 0) return 0;
```

If this line isn't there, the function will hang if a zero is passed to RealSqrt (). This won't happen in the "3-D Demo II" program because there are no situations where a zero is passed to this function, but for other applications using this function, this may not be so.

If you find an error in an issue of GS+ Magazine, please let us know about it! Write to us at:

GS+ Magazine
P. O. Box 15366
Chattanooga, TN 37415-0366

GS+

The HyperStuff Collection

First in this innovative series is *ClipTunes™*

ClipTunes™ is a collection of MidiSynth™ format songs. Included in the package is an Xcmd player for HyperStudio™ and HyperCard IIGS™. The "Synth" Xcmd allows the HyperCard™ and HyperStudio user to easily play 7 voice stereo music from within their own stacks. The songs were specially arranged for the Hypermedia environment and play in the background so you can open menus, click buttons, switch cards, animate Icons all while the music continues to play. Selections range from Holiday music, marches, songs for special occasions, and music to switch cards by. ClipTunes comes complete with tunes, sample stacks, Xcmd player, and MidiSynth tool (Tool 35). Suggested Retail Price\$39.95

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Ah, yes, the title... Basically, "Casual 6" is intended to be an ongoing discussion of anything having to do with IIGS System Software v6.0. This first article is merely a collection of hints, tips, techniques, horror stories, and other neat things having to do with Software 6 that we have managed to scrape together in the few months since its release. In the issues to come, I would like to have in-depth discussions on topics like the new Finder, Teach, neat new Finder Extensions, the Installer, the new FSTs, and anything in System 6 that is worthy of discussion. (Please let me know if you have an idea for a topic!)

For now though, I will be repeating some of the things about System 6 that we have learned from various sources (user group newsletters, Apple, various online services) and our own experiences. Some of it will be a bit on the technical side, but for the most part, this material should help out everyone using System 6.

Installing System 6

The first hurdle that everyone has to overcome is installing System 6. Apart from the problems I had with Pointless (put forth in excruciating detail in last issue's "First Impressions Of System 6"), moving to System 6 has been a very easy experience for us here at *GS+* Magazine.

The only generic tip I have regarding installation of System 6 is this: boot from the `:Install` disk and be aware of

what the Easy Update option actually does. The `:Install` disk is set up to do just that, install System 6. Besides, the new Installer will only run under System 6, so you can't boot from your old System 5.0.4 startup disk and then run the new Installer. As for Easy Update, you need to be aware that Easy Update only updates what you *already* have installed in your system! So, if you want to install any of the neat new toys (like Teach, and the HFS File System Translator) that come with System 6, you need to click on the Customize button in the first Installer window and pick the item you want to add to your system from the list of custom updates. And, if you get stuck, be sure to explore the online help that is provided with the Installer.

The Vulcan Thing

If you have a Vulcan internal hard drive from Applied Engineering, you might be having more than your share of problems getting System 6 installed. The problem is this: when you boot up the normal `:Install` disk to put System 6 on your Vulcan, the `:Install` disk does not have the proper driver installed for the Vulcan hard disk to work properly. This can cause the system to behave very strangely. (The most common behavior we have heard of is that the Installer will ask you to insert your Vulcan drive in the middle of the installation.) Not to worry, there is a very easy solution. If you are going to install System 6 onto your Vulcan drive, you need to do the following:

Why HFS Won't Boot By Matt Deatherage

To boot from a file system, GS/OS requires some mechanism that can:

- A) Load the file `START.GS.OS` into memory at \$6800 and execute it,
- B) Find any file on the boot disk and load it,
- C) Return the name of the boot File System Translator

A and B aren't too trivial under HFS. To pull this off, the system needs a boot block that can load some code somewhere in memory (preferably, maybe only in bank zero) that can find and read any file on an HFS disk, and HFS is a very complicated file system.

By contrast, the ProDOS boot block loads the file `ProDOS` at \$2000 and it's not too hard to find and read ProDOS files without much support. Booting AppleShare calls the ROM to bring some more code from the file server, and that code (in a file on the server) loads enough AppleTalk protocols so `START.GS.OS` can continue to boot.

It's not even clear this kind of little program *can* be written for HFS due to the complexity, and if it could, it would require a boot block that would completely confuse Macintosh programs that tried to read the boot block. We don't know that it's impossible, but since booting from HFS would still leave you completely unable to access ProDOS 8 (think about it—you can't launch ProDOS 8 from an HFS volume, even if it is the boot volume), Apple chose to focus on other priorities.

First, make a backup copy of the `:Install` disk.

Next, trash the file `SCSLDriver` from your backup copy of the `:Install` disk. (If your system does not have a 5.25-inch drive attached, it would be safer to delete the file `AppleDisk5.25`. Both of these files are in the `System:Drivers` folder of the `:Install` disk.)

Then, copy the file `Vulcan` from the `System:Drivers` folder of your Vulcan utilities disk into the `System:Drivers` folder of your `:Install` disk and then reboot with the newly modified `:Install` disk. You can then proceed with a custom installation of System 6 onto your Vulcan.

Well, now that we've talked about installing System 6, let's talk about the next thing you are likely to do with it—boot up your computer.

The HFS Thing

As I said last issue, you can *not* boot your IIGS from an HFS disk even under System 6! I also said that I did not know why this was, just that you shouldn't even bother trying to do it. (One fellow online wrote that he had backed up his hard drive, reformatted the entire thing as an HFS disk and now he couldn't get his system to boot.) Fortunately, thanks to our good friend Matt Deatherage at Apple, I now have an explanation as to why you can't boot from HFS disks. (See the "Why HFS Won't Boot" sidebar. Warning! It's technical stuff!)

Also, a reader recently wrote in to tell me that he had formatted one of his hard drive partitions with HFS and when he went to put files on it, he found that over 200K was already in use! His extremely reasonable question was, "Why?" Well, the answer is that HFS is a very complex file system, with a complex directory structure that uses a lot of disk space. The larger the HFS disk is, the more space this directory information will take up.

Stupid Boot Tricks

Now that we've got that cleared away, let's talk about the actual boot process and what you should know about it.

First of all, there is a really neat trick that allows you to prevent any of your Desk Accessories, Inits, Control Panels, etc., from loading. When you first turn on or restart your IIGS, press and hold down the shift key. Then, right after you see the "Welcome To The IIGS" screen, you

should also see the message "No Inits/DAs." At this point, you can let go of the shift key. It is also important to note that you have to press and hold the shift key *before* the "Welcome..." screen appears. The system only checks for the shift key once, and it's almost immediately after that screen appears. Now, why would you want to do this? Well, suppose you get a new public domain Desk Accessory that crashes your computer every time you boot. You can't get to the Finder to take it out, and it might be a lot of trouble to put together a floppy disk that you can boot from just to take this silly Desk Accessory off of your hard disk. So, by simply holding down the shift key as you reboot, you can tell the system not to load *any* of your Desk Accessories and you can then get to the Finder and remove the offending program.

Most of the time however, you *will* want all of your Desk Accessories, Inits, and other cool utilities to be loaded. During a normal boot, System 6 will, as usual, fill up the thermometer in the middle of the screen to show you its progress. It will also show you, along the bottom of the screen, the icons of certain Control Panels and Inits that perform an action at boot time. These icons can be a handy reminder of what you have installed in your system, as well as being a source of cheap entertainment. And, in System 6, some of these icons may even be animated! Several of the programs that come on this issue's *GS+* Disk have animated boot icons for you to enjoy as you wait for your computer to start up. A fun game is to try and figure out what a particular program does by what the boot animation is. Good luck.

Finally At The Finder!

If you survived the boot process, you will probably find yourself in the new Finder v6.0. There are tons of neat new features in the Finder, so let's just dive right in.

The first thing you should check out in the new Finder is the new online help feature. To get to it, press Command-? or select Help from the Apple menu. In the help window you will see a pop-up menu

containing all of the topics that help is available for. Select a topic from this menu and the rest of the window will fill with information about the topic. This is a good place to find out about Tunneling and lots of other cool new Finder features.

Icon Changes

After using the new Finder for a while, you may notice that your old icon files behave oddly. I don't know why this is, but several readers have reported it to me, and it's a good way to shift gears and talk about the new new **Desktop** file.

In older versions of the Finder, icons were kept in special icon files in a folder called **Icons**. Icons for documents were used to tell the Finder which application should be used to open the document. For example, the icon for an AppleWorks GS word processing document would tell the Finder exactly where to look on disk to find the AppleWorks GS application. When you double-clicked on the document, the Finder would look inside the icon to see where AppleWorks GS was supposed to be. If AppleWorks GS was where the icon said it should be, the Finder would launch it and tell it to open the document. However, if AppleWorks GS *wasn't* where the icon said it should be, the Finder would give you that infernal message, "An application can't be found for this document."

While the new Finder can still use these old icon files, it also provides a much more flexible method of keeping track of which icons go with which files and which applications can open which types of files. The secret is in a new resource called an *rBundle*. Without getting too technical, an *rBundle* is a resource that contains all of the icons associated with an application and its documents. When the Finder encounters an application with an *rBundle*, it copies the icons and document information in the *rBundle* into a special invisible file in the **Icons** folder of the disk that the application is on. This file is named **Desktop** and it allows the Finder to easily keep track of which kinds of documents can be opened by which applications without worrying

exactly where the applications are at. For example, HyperStudio v3.0 has an *rBundle* resource. The first time you launch HyperStudio v3.0 under System 6, the Finder should copy its *rBundle* information into the **Desktop** file of the disk that HyperStudio is on. Then, when you double-click on a HyperStudio stack, the Finder will check the **Desktop** file to see which application to launch and open HyperStudio for you. The neat thing is that if you move the HyperStudio application to another folder using the Finder, the Finder will update the **Desktop** file so that the next time you double-click on a HyperStudio document, the Finder will know exactly where to look to find HyperStudio!

Sound good? It is! The only trouble is that very few applications now have *rBundles* and the Finder seems to have a few bugs when it comes to actually adding *rBundles* to the **Desktop** file. For more information on this, check out the "Rebuild Desktop" article in this issue.

Speak Of The Devil

When I mentioned the old "An application can't be found for this document" message, I could almost feel the backlash of anger and hatred that most of you feel towards this message. Fear not, in System 6, you should be seeing far less of this truly evil string.

First of all, the new Finder provides a very nice way for documents themselves to tell you what you need to do to use them. If you double-click on an icon and the Finder can't find an application to open it, it will look to see if the document has an *rComment* resource with an ID of 2. This is a resource containing plain text that will tell you something that the creator of the document wants you to know. Usually this information will explain exactly what you need to do to use the document. If this information exists, then the Finder displays it in a dialog box. For example, if you double-click on the icon for the new EGOed v1.6, you will get the dialog shown in the screen shot. However, if the Finder can't find an application for the document and the document does not have the appropriate *rComment* resource, you will be presented with the evil string.

Another tool in your war against the evil string is the option key. If you hold down the option key while double-clicking on a document, the Finder will bring up a Standard File document allowing you to specify an application to open the document with. At least that's how it *should* work. At this point, the Finder will only bring up this dialog for

AppleWorks GS Benefits

Over the years, AppleWorks GS has become a favorite of IIGS users everywhere. It's also begun to seriously show its age. One problem in particular that has frustrated users is its inability to use fonts bigger than 48 points. At the time AppleWorks GS was written, this was fairly reasonable. The System Software available back then simply could not handle large fonts reliably. Well, believe it or not, the designers of AppleWorks GS actually planned for the day when IIGS System Software would make using large fonts safe. Now that System 6 has done just that, you can perform the following trick inside AppleWorks GS to use large fonts. When you select Choose Font from an AppleWorks GS menu, hold down the option and shift keys. AppleWorks GS will then let you pick and use a font larger than 48 points!

documents that are already associated with a particular application. In other words, you can't use this trick to pick an application for just any file. This may be a bug in the Finder, or it may have been intentional. It seems like a bug to me.

Also, you may find that sometimes, despite its best efforts, the Finder will get confused and not be able to find an application that it *knows* is around somewhere. When this happens, the Finder will present you with a dialog telling you that it knows which application it needs to open, but it can't find it. This dialog will also give you the option to cancel, try again (maybe the application is on a floppy disk that is no longer in a drive), or locate the application. If you pick locate, the Finder will present you with a Standard File dialog so that you can locate the file. Once you find the file, you can simply launch it by selecting Open in the dialog, or you can launch it and tell the Finder to remember where it was by holding down the control key as you open the file in the dialog. If you do this, the Finder will update its desktop database so that it will look in the correct place for the application the next time you try to open that type of document.

Extras! Extras!

My last bit of Finder trivia, concerns Finder Extensions. Most Finder Extensions are Inits that are stored on disk in either the `*:System:System.Setup` folder or the `*:System:FinderExtras` folder. So where should you put yours? Well, if the Extension in question is purely a Finder Extension, (i.e. it *only* works inside the Finder) you should put it in the `FinderExtras` folder. This issue's Rebuild Desktop is an example of an Extension that works only in the Finder. However, if the Extension is an Init that can work *outside* the Finder (i.e. it's an Init that just happens to do some neat extra things inside the Finder), you should keep it in the `System.Setup` folder.

Note that other types of files can be Finder Extensions too. An example of a New Desk Accessory that is a Finder Extension is this issue's EGOed v1.6. Like all New Desk Accessories, it should be kept in the `*:System:Desk.Accs` folder, but it has some extra capabilities when used inside the Finder.

System Wide Stuff

Now that we've run around in the Finder for a while, let's talk about some other parts of System 6.

When Apple introduced the StyleWriter printer, there was much complaining from

the Apple IIGS world that there was no way to use this printer with the IIGS. System 6 addresses that problem by including a special driver for the StyleWriter that allows you to print to it from any IIGS desktop program. While this sounds good, I'm not so sure just how good it is. According to the StyleWriter driver ERS (Engineering Reference Specification), the IIGS StyleWriter driver does *not* take full advantage of what the StyleWriter can do (for example, you can not print in landscape mode). My advice to potential StyleWriter buyers is to try before you buy, if at all possible.

Moving to a slightly more technical topic, some people have been asking "What happened to `Basic.Launcher`?" Observant types have noticed that this file has disappeared from System 6. Well, basically, `Basic.Launcher`'s job has been split between GS/OS and ProDOS 8, and the file was no longer needed. However, I have read that some AppleSoft and ProDOS 8 programs expect the `Basic.Launcher` file to be present, and won't run properly if it is missing. I have also read that simply copying `Basic.Launcher` from a System Software v5.0.4 disk to your System 6 startup disk will solve this problem.

Teach Me

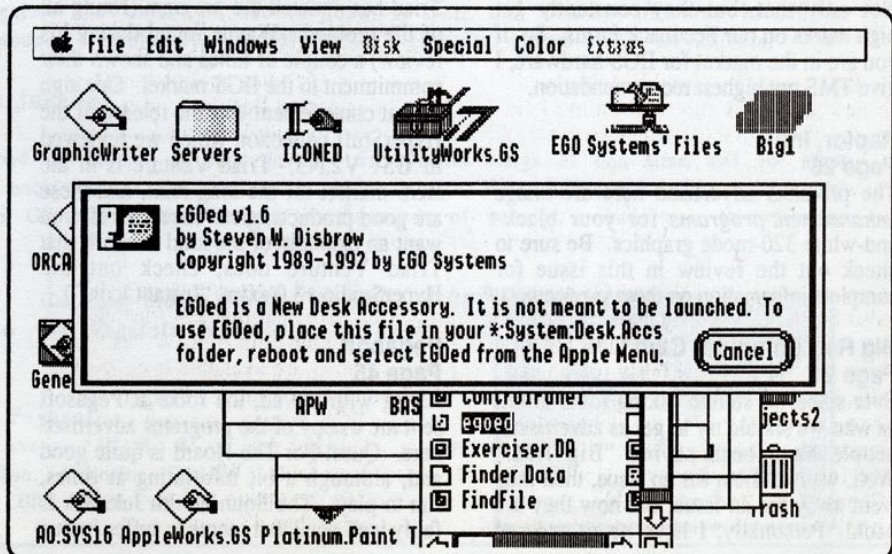
Since I wrote our EGOed text editor NDA, I was more than a little interested in the Teach application provided with System 6. While Teach isn't exactly Microsoft Word (but then, it wasn't intended to be), it does have some very nice features. First and foremost is its ability to import AppleWorks Classic, AppleWorks GS and MacWrite v5.0 files. The only problem here is that almost no one I know uses MacWrite, and if they do, they use MacWrite II, not v5.0. At any rate, it is

nice to be able to double-click on files and have them open (what a good idea for EGOed) and it's very nice to be able to open up to four files at a time and copy and paste between them (another good idea for EGOed). However, there are problems, namely the fact that my system always seems to crash after I run Teach. Several readers have told me that they have the same problem, and at this point, I am at a loss as to what is causing it.

Talking To Each Other

While all of the above stuff is nice, my absolute favorite new feature of System 6 is its Inter-process Communication (IPC) capabilities. While Apple has mostly focused on this in the area of Finder Extensions, it is very important to realize that *any* piece of code can use IPC to provide services to other parts of the system.

The best example of this is the new Sound Control Panel. This Control Panel is responsible for playing a variety of sounds in response to a number of different events. For example, you can set the Sound Control Panel so that it plays a burping sound whenever you eject a disk. How does it do that? By using IPC. And it works *anywhere* in the system, not just in the Finder. In the case of a disk being ejected, let's assume that you are using a Standard File dialog to save a file. If you eject a disk while using the Standard File dialog, the system will notice the disk eject and then call `SysBeep2` to play the sound that is associated with a disk eject. But `SysBeep2` isn't the one that actually plays the sound. `SysBeep2` sends out a request for someone to play the appropriate sound. The Sound Control Panel sees that request and acts upon it by figuring out which sound you have told it to play when a disk is ejected and then playing that sound!



Now imagine the power this could bring to your IIGS. Imagine a New Desk Accessory that contains the names and addresses of your friends. Now imagine a future version of EGOed that could send a request to that New Desk Accessory that would ask it to pass those names and addresses back to EGOed for use in a mail-merge document. You wouldn't have to run AppleWorks GS or any other mail-merge software, it could all happen right in the Finder!

That's just a small taste of the wonderful things IPC might do for your IIGS. Of course, someone is going to have to write all of those neat things...

installment of "Casual 6" please let me know what it is!
GS+

The End

I certainly hope you've enjoyed this casual look at System 6. And I hope that I was able to give you some information that will make your life with System 6 a bit easier. If you have a topic that you would like to see discussed in a future

Advertisers Index

By Steven W. Disbrow

Advanced Printing Concepts Page 8

In the Macintosh world, they call these sorts of businesses "Service Bureaus." You send them page layout and word processing files and they print them out on high-quality printers. I personally have not had any experience with this company (but I do talk to the owner on the phone quite often—he's quite a nice fellow), but I do think it's high time someone offered this sort of service to Apple II owners! If anyone out there has any comments on this company, I would love to hear them!

GravenStein User Group Page 10

What's this? An ad for a *user group*? Sure, why not? If you represent a user group, you should definitely begin exchanging newsletters with GravenStein. They have one of the best newsletters that I have seen and they are also one of the few places where you can get the elusive Octo-RAM memory board.

TMS Peripherals Pages 12 and 13

This is one of the few mail-order companies that takes the IIGS seriously. Not only that, but they constantly get high marks on our Feedback forms. So, if you are in the market for IIGS hardware, I give TMS my highest recommendation.

Raptor, Inc. Page 20

The products advertised here are *image enhancement programs* for your black-and-white 320-mode graphics. Be sure to check out the review in this issue for complete information on these products.

Big Red Computer Club Page 21

Ever since we started asking folks to tell us who we should try to get as advertisers, people have been saying "Big Red." Well, we had them for an issue, then they went away for an issue, but now they are back! Personally, I have never ordered

from them, so I can not really comment on their service. However, I have *never* seen a complaint about them on any of our Feedback forms (or anywhere else for that matter) and seven out of ten people that do suggest advertisers to us have suggested Big Red. As for the products themselves, Big Red has spent the last few months taking over the distribution of some of the best IIGS titles ever, while drastically cutting the prices. How can you beat that?

Event Specialists Page 30

These are the folks that will be putting on the Apple Central EXPO and the Apple EXPO East. What can I say except that you should go?! For more information on these events, check out "What's New" in this issue or give the folks at Event Specialists a call.

Triad Venture Page 40

Way back in GS+ V1.N2, we reviewed one of the earliest versions of Graphic Disk Labeler. The reviewer, Wayne Packard, really liked the program, but found a few problems. In the time that has passed, Triad has updated the program (fixing all of the problems Wayne found during his review) a couple of times and shown their commitment to the IIGS market. One sign of that commitment was the release of the HyperStuff collection which we reviewed in GS+ V2.N5. Triad Venture is in the IIGS market for the long haul, and these are good products, give 'em a try. (If you want an example of the kind of work that Triad Venture does, check out the HyperStudio v3.0 extra, "Instant Icon.")

Pegasoft Page 45

Along with the ad, the folks at Pegasoft sent me a copy of the programs advertised here. Quest For The Hoard is quite good and, although a bit infuriating at times, fun to play. The SoundSmith Jukebox is fairly well done, but seems to suffer from a

few operational quirks (i.e. the menu bar fills with white after opening a song, songs refuse to play if the system beeps at you, stuff like that). I recommend Quest For The Hoard for people that like "thinking games," but I think that you should try out a copy of the SoundSmith Jukebox before you send in your shareware fee.

App-L-Jack Page 46

Well, we finally got our App-L-Jack "review units," and in all honesty, Joe and I were very surprised at what they were. Basically, it's a pointy bit, about an inch and a half long and the same diameter as a paper-clip, mounted in the end of a telescoping rod (sort of like the antennae on a cordless phone). So, not only can it eject your disks, it can act as a blackboard pointer at your next user group meeting. It also has a clip that you can use to secure it in your shirt pocket, but the pointy bit is *very* pointy, so I'm not really sure you would want to do that. Other uses that Joe and I came up with include: finger-nail cleaner (very important when working with ORCA/C and other slow compilers), popcorn or marshmallow stabber, and office fencing. Wrap some cotton around the end, and it does a good job of cleaning your keyboard. The America Online software is a nice bonus and almost worth the \$5 all by itself.

DreamWorld Software Back Cover

This product was nominated for *three* Apple II Achievement Awards. That should tell you something about it. However, I do need to warn you that this is a very complex program and not for those who are unwilling to break open a manual. Hopefully, we will have a review in the next few issues. Until then, give DreamWorld a call for more information.
GS+

Replicator v1.2

by Josef W. Wankerl
& Steven W. Disbrow

After copying a few thousand more *GS+* Disks with Replicator, we came up with yet another keen feature that we wanted to add in order to make it even better.

Mass Format...

When we analyzed how long it took to actually copy a disk, we found that a good bit of time is spent in formatting if the disk hasn't already been formatted. We buy our disks in bulk, and they come to us unformatted, so when it's time to duplicate your *GS+* Disk, a lot of time is spent formatting. To help save time, we put in a *mass formatting* option. This lets us pre-format all of our disks before the final master disk is ready, thus saving the format step when it's time to actually duplicate the disks. We're sure you can find a good use for this new option too.

To use the mass format option, choose the "Mass Format..." menu item from the "Disk" menu. You will then be presented with a familiar dialog box asking you to choose the devices you wish to mass format with. The devices you choose *must* all be of the same type (i.e. all 3.5-inch drives or all RAM disks). Once you've chosen your devices, you'll be presented with the standard formatting dialog where

you can choose the file system and formatting options for the device. When you choose the "Initialize" button, the file system and formatting options will be remembered and used on each disk thereafter. The mass format process will then begin, formatting disks in each device until you press Command-period to cancel the mass format.

Mass format honors the "Prompt on formatted disks," "Blank screen on formats and writes," and "Verify disk blocks every [X] disks" preferences. The screen will *not* blank, however, on the first format because the first format call must interact with you to determine what file system and formatting options to use.

If there is an error during either the format or verify disk blocks operation, the disk will be ejected and you will be given a dialog box telling you what the error was. After you dismiss the error dialog, the mass format operation will continue.

Happy Replicating!

Version 1.2 of Replicator has every feature that we can think of. (Except, of course, for the compression of saved disk images—we'll get around to this one day,

honest!) Even though we were going to consider version 1.1.1 of Replicator "finished, final, and not to be touched again," the mass format option was too useful for us not to work on. So, unless you let us know what other features *you* need, we are going to consider Replicator "really finished" for a while—unless, of course, some bugs pop up. If *you* happen to find a bug, please fill out the problem form on your *GS+* Disk and send it in so that we can grind them into dust (the bugs that is, not the problem forms). If you want to know more about the internal workings of Replicator, be sure to read the file *RepTech.Docs* which is on your *GS+* Disk in the *Replicator* folder. **GS+**

What Is Replicator?

Replicator is a IIGS-specific, *desktop-based disk duplicator*. Unlike other IIGS disk duplication programs, Replicator will work with any *GS/OS* disk and any device supported by *GS/OS*. Replicator will even work with your old UniDisk 3.5 drives, and it's great for copying HFS disks! For complete documentation on how to use Replicator, be sure to read the file *Replicator.Docs* which is on your *GS+* Disk in the *Replicator* folder.

Pegasoft - Software that Takes Flight!

High praise for Quest for the Hoard:

"Quest for the Hoard is well-programmed and is an enjoyable game." - Big Red Computer Club

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Get either program for only \$15. Canadian orders: we eat the PST & GST. Prices includes a subscription to the Pegasoft Newsletter. Please send check or money order to:

Pegasoft
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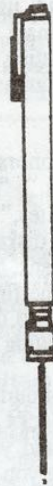
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And furthermore,

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Be Your Own "Golden Master"

As we told you a few issues ago, Resource Central is now the official source for all Apple II technical information (information that was previously available only through the Apple Programmer's and Developers Association). Well, the list of things you can get from Resource Central now includes the official Apple IIGS System 6 Golden Master CD-ROM. This is the same CD-ROM that all of the Apple II developers got directly from Apple and it contains, in addition to System 6, HyperCard IIGS v1.1, the complete set of Apple II technical notes, IIGS sample source code and all of the ERSs (Engineering Reference Specifications) that we have mentioned throughout this issue. In fact, it's got about 80 megabytes of really cool stuff for your IIGS! How much is it? Only \$99, including shipping! To get yours (don't forget that you will need a CD-ROM player to use it!), order item number DA-029 from Resource Central at: Resource Central
P. O. Box 11250
Overland Park, KS 66207
(913) 469-6502

Busy Bees At The Byte Works.

Now, all of those ERSs are great, but almost every IIGS programmer is used to the format of the *Apple IIGS Toolbox Reference* series. Believe it or not, Apple probably won't be doing a new volume to cover the changes in System 6! Don't despair however, The Byte Works has taken it upon themselves to compile all of the pertinent programming information about System 6 into a new book, tentatively titled "*Programmer's Reference For System 6.*" This book is currently undergoing an accuracy review at Apple, but that should be finished soon. When it is, The Byte Works will be making the book available in two forms. The first will be a loose-leaf notebook version, available near the end of June and costing about \$45. A few months later (in August), the book will be available as a trade paperback for about \$35.

Also, The Byte Works is putting the finishing touches on a follow up to their popular "Learn To Program In Pascal" package. (See review in *GS+ V3.N4.*) It will be called "Toolbox Programming In Pascal" and will be intended to (Surprise!) teach you how to program the IIGS Toolbox with ORCA/Pascal. Different chapters will focus on different tool sets (TextEdit, the sound tools, etc.) and it will come with 350 pages of lessons and almost 2MB of sample source code! The cost (not

including ORCA/Pascal) will be \$75, and it should be available now.

Finally, The Byte Works have announced the new ORCA/Debugger. This is supposedly a *source code level* debugger for *high-level languages!* Apparently it's an Init (not just an updated version of Prizm), and it can debug every type of IIGS program except an interrupt handler! Also, according to the press release we were given, "Some of the major features of the ORCA/Debugger include the ability to view memory or variables in any of 13 formats, set or clear break points while the program runs, see variables without typing their names, and the ability to change the value of a variable." The price? Only \$50. For more information on this program or any of the other new Byte Works products mentioned here, contact them at:

The Byte Works, Inc.
4700 Irving Blvd. NW Suite 207
Albuquerque, NM 87114
(505) 898-8183

Your Money Matters

In last issue's "Writer's Block," I complained about the fact that I had to use Quicken on the Macintosh to keep up with my checkbook. Just days after that issue went to the printer, I received in the mail a flyer describing a new IIGS-specific financial program called "Your Money Matters." According to the information I received, this program will do everything that I was using Quicken to do! Some of the features it mentioned included: Recurring Transactions, Split Transactions, user specified transaction types, user specified account types, budgeting, checkbook reconciliation, and something that Quicken doesn't offer—graphing of account information!

The cost for this program is \$99 and it will be available from Resource Central or direct from the publisher, Software Solutions. For more information, contact Resource Central at the address given above or contact the publisher at:

Software Solutions
5516 Merritt Circle
Edina, MN 55436
(612) 929-8947

Well, It's New To Me!

A couple of weeks ago, I got a flyer in the mail from a company called, "North Coast Computing." Apparently, this company carries out of print Apple II and IIGS games, utilities and productivity software at fairly good prices. I've not ordered

from them, but their catalog was fairly good, so I thought I should tell you about them. Contact them at:
North Coast Computing
P. O. Box 4208
Santa Rosa, CA 95402
(707) 528-6480

Apple Central EXPO Info

Yes indeed, we will be at this year's Apple Central EXPO (which is held in conjunction with KansasFest). This year, the EXPO will be held on July 25th and 26th at the NOMDA Conference Center in Kansas City, MO. We will have our own booth, number 16, which is just across the aisle from where Roger Wagner had his booth last year. Stop by and see us!

Speaking of stopping by, the folks at Event Specialists (the group that puts on the EXPO) wanted us to pass the following information along to you. If you plan on flying in for KansasFest or the EXPO, American Airlines is the official airline for the show and they will give you the best deal possible (40% off for a 7-day advance purchase or 5% off the lowest airfare you find with another airline!). Just call American at (800) 433-1790 and ask for "Starfile #S0272AM". And, if you can't get a room at Avilla College with all of the Techno-Weenies, the Overland Park Marriott is the Official hotel for the show. Rates are \$69 a night for a single or double and that includes breakfast and shuttle service to and from the show. To make your reservations, just call the Overland Park Marriott directly at (913) 451-8000, and ask for reservations for the Apple Central EXPO.

Similar deals are available for the Apple EXPO East which will be held in Boston, on October 2-4 of this year. For the same deal on air fares, call American at the above number and ask for "Starfile #S0302AM". For hotel reservations (\$69 per night, single or double), call the Boston Park Plaza Hotel at (800) 225-2008 and ask for reservations for the Apple EXPO East.

Now that you know how to get there and where to stay, call Event Specialists to register. The number is (800) 955-6630

If you have a new product or service available for the IIGS, send your press release to:

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Glossary

In each issue of *GS+* Magazine, we present a glossary of some of the more common terms in the IIGS world and some of the more uncommon terms that we use in each issue. If you have a term or bit of jargon that you would like to see explained, let us know and we'll try to get it in a future "Glossary" installment. Past installments of the *GS+* Glossary can be found on your *GS+* Disk in the plain ASCII text file, **Glossary**. (Entries marked with an "*" have appeared in previous installments of the *GS+* Glossary and are repeated here for our beginning readers or because they have relevance to topics discussed in this issue.)

*:
"*:" is shorthand notation for the name of the disk you started your computer with. Since everyone is likely to have a different name for their startup disk, using "*" gives programmers (and article writers) an easy means of specifying a folder on the user's startup disk. For example, if the name of your startup disk is ":Fred" and you read in a magazine that New Desk Accessories are kept in the *:System:Desk.Accs folder, this would tell you that, on your system, you would find your New Desk Accessories in the folder :Fred:System:Desk.Accs. To get to this folder, you would (from the Finder), double-click on the disk :Fred, then double-click on the folder System. You would then find the Desk.Accs folder inside the System folder.

Bit-Mapped Font

A bit-mapped font is a font whose characters are defined by a series of bits showing explicitly which pixels on the screen (or other output device) should be turned on or off to give the characters their shape. For each point size of a bit-mapped font, you need a separate bit-map showing the definitions of the characters in the font. Compare this with "Outline Font" below.

Command Key *

The Command Key (also known as the Open-Apple key) is a key that you press in combination with other keys to send commands to the program that you are using. These key combinations are known as "key equivalents" or "shortcut keys" that may be used instead of choosing an item from a menu. For example, in the Finder, the menu item "New Folder" has a shortcut key combination of Command-N. To activate this item, you would simply hold down the Command key and then press the "N" key.

Desktop File

The **Desktop** file is an invisible file that is kept in the **Icons** folder of a volume. The **Desktop** file contains information used by the Finder to keep track of the icons associated with documents and applications. It also helps keep track of which applications can open which documents and where those applications are located.

ERS

According to the documentation on the System 6 Golden Master CD-ROM, "ERS" stands for either "External Reference Specification" or "Engineering Reference Specification." At this point, we are going with "Engineering Reference Specification." Basically, an ERS is an engineering-level document intended to describe something before real documentation is written. At this point, the only System 6 information available from Apple is the information contained in the ERSes on the System 6 Golden Master CD-ROM.

Finder Extension

A Finder Extension is a program that adds new options to version 6.0 and later of the IIGS Finder. Most Finder Extensions show up in a special "Extras" menu at the end of the Finders menu bar and do not operate outside of the Finder. Some Finder Extensions however, take the form of New Desk Accessories or Control Panels that operate inside any IIGS desktop program but have extra functions when operating inside the Finder. Finder Extensions that are specific to the Finder, should be kept in the *:System:System.Setup folder.

GS/OS *

The Apple IIGS Operating System.

Installer *

The Installer is a program that automates the process of copying files. It is provided with the IIGS System Software and with many third-party software products (such as *GS+* Magazine). In the simplest terms, the job of the Installer is to "put the right files in the right places." By using the Installer (when provided) you reduce the possibility of the wrong file being copied to the wrong place.

IPC

"IPC" stands for "Inter-process Communication" and is sometimes called "Inter-application Communication" (IAC). IPC is simply a way for programs to communicate with each other. On the

IIGS, IPC is most often used by the Finder to communicate with Finder Extensions.

Outline Font *

An outline font is a font whose characters are represented by a set of mathematical equations. By scaling these equations, the characters in the font can be accurately rendered at any size.

PIF

"PIF" stands for "Permanent Initialization File." This is a file that is loaded when you first start up your IIGS. It then stays in memory, hopefully performing some useful function, until you either turn off or restart your IIGS. PIF files are kept in the *:System:System.Setup folder.

SCB

"SCB" stands for "Scan line Control Byte." There is one SCB for each of the 200 scan lines on the IIGS screen. (Look closely at your IIGS screen and you should see lots of little horizontal lines. The spaces between those lines are the scan lines.) Each SCB contains information that tells the system, among other things, what the horizontal resolution of the scan line is (320 or 640), and which color table (out of 16 available color tables) that the scan line uses.

TIF

"TIF" stands for "Temporary Initialization File." When you first start up your IIGS, TIF files are loaded, perform some function and are then removed from memory. TIF files are kept in the *:System:System.Setup folder.

TrueType *

TrueType is an outline font (see "Outline Font" above) format endorsed by Apple Computer, Inc. and Microsoft, Inc.

XCMD

"XCMD" stands for "eXternal CoMmand." XCMDs are used by various programs to add to their capabilities. Generally, when someone refers to an XCMD, they are referring to the XCMDs used with HyperCard or HyperCard IIGS. However, HyperStudio has a similar feature called "New Button Actions."

XFCN

"XFCN" stands for "eXternal FunCtion." Like XCMDs, XFCNs are used by various programs to add to their capabilities. When someone refers to an XFCN, they are usually referring to the XFCNs used with HyperCard or HyperCard IIGS. *GS+*

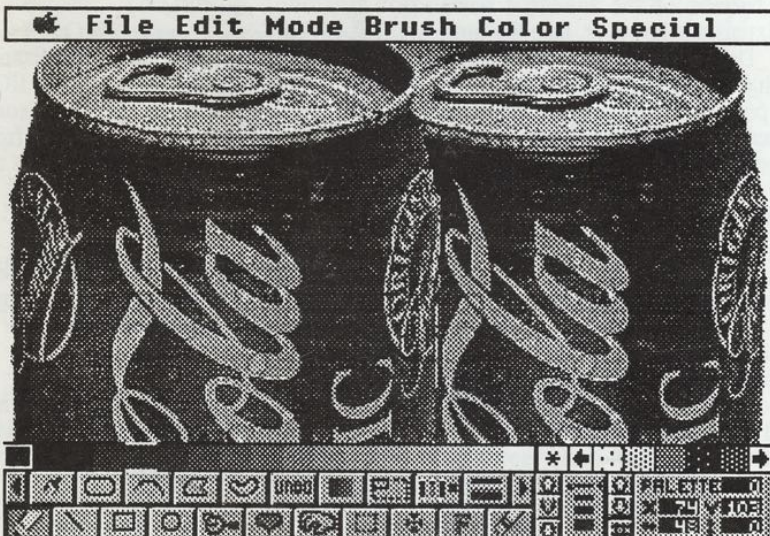
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