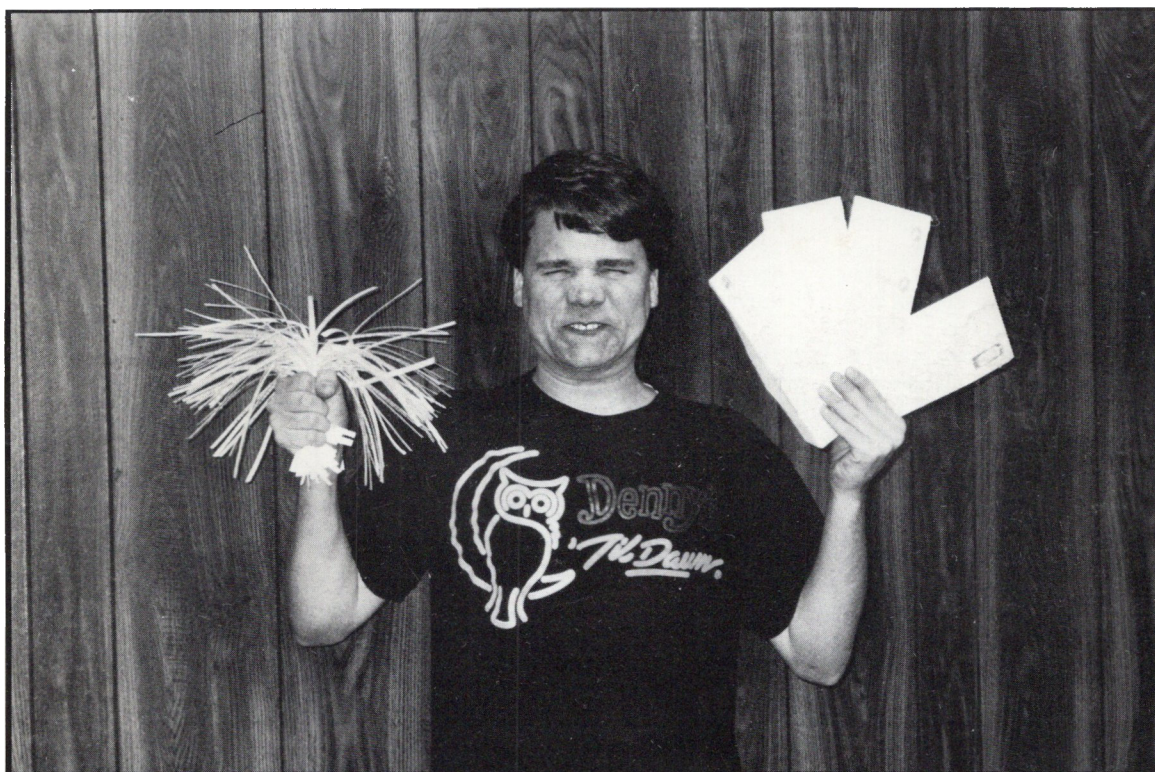


March
April
1995

Volume 6
Number 4

The First Apple IIGS® Magazine + Disk Publication!

JUMBO APRIL FOOL'S ISSUE!



In This Issue, Bob Goes

INSANE

To Give You the Best Service Possible!

Also in This Issue, You'll Find Out . . .

- What to Look For in a CD-ROM Drive
- How to Use TaskMaster in Your IIGS Programs
- How to Contact WarpField Engineering!

Writer's Block

By Steven W. Disbrow

Decisions, Decisions . . .

By the time you read this, AutoArk v1.1 *will* finally be ready to ship. If you are a registered owner, you should be getting an upgrade notice in the mail soon. (If you haven't gotten it in a few weeks, let us know and we'll see if we have you in the database that ECON gave to us.) The cost of the update is going to be \$7.50 through the end of June, 1995. After that, the cost of the update will be going up to \$10. There are two main reasons that this update is going to cost more than the Addressed For Success update did:

- 1) We paid ECON a bunch more money for AutoArk than we did for Addressed For Success.
- 2) AutoArk uses a patented compression technology, so we have to pay a licensing fee to use it. So, we have to cover that cost somehow.

In the last issue, Professor Gumby reported that the AutoArk update would include a new version of Balloon. After this news hit the street, we received a lot of feedback suggesting that this would *not* be the best way to sell these products. For example, someone with HardPressed isn't very likely to buy AutoArk just to get Balloon! So, after much consideration, I've decided to "unbundle" the products and sell them separately. This reduces the cost of each product for the folks that only want one or the other, while still letting us offer special pricing for those that want to get them at the same time. (For complete information on exactly what those prices are, see "What's New?" elsewhere in this issue.)

Speaking of Which

And, speaking of Balloon, I'm tickled pink to be able to tell you that Balloon v2.0 is actually available and shipping *right now!* For more information on Balloon v2.0, be sure to check out "What's New?" elsewhere in this issue.

(Oh, and I should also point out that, while Balloon v2.0 *is* a new version of the Balloon Finder extension that we published in *GS+* V5.N2, this new version of Balloon is a completely rewritten, stand-alone product that will *not* be appearing in any issue of *GS+* Magazine! Any rumors you hear to the contrary are *not* true!)

More Hardware Needed?

Speaking of our world famous "Rumors, Wishes & Blatant Lies" column In

the past few issues, we've printed some rumors about some non-existent hardware, from a non-existent company. Much to my surprise, these rumors have spawned dozens of phone calls, several letters (complete with threats of bodily harm if the rumors weren't true) and at least one discussion thread on the Internet. The main reason I'm surprised is that I was certain that, as printed, these rumors were obviously 100% bogus. However, it seems that folks are so anxious to see new products (especially new hardware) for the IIGS, that they are willing to believe just about *anything!*

So, on the one hand, it's really great to realize that there is still a fairly large and enthusiastic market out there for new hardware. On the other hand, it's really depressing to realize that none of us here have the skills needed to actually produce any new hardware products. It's also pretty depressing to realize that so many people were fooled by the phone number "555-ABI-GLIE." (Maybe we should have printed it as "555-A-BIG-LIE," but I'm not sure that would have helped any!)

This & That

Well, I've run out of things to say, but I've still got a lot of space to fill, so I guess I'll just start rambling and see if anything comes of it.

Glad You Liked it!

I've gotten lots of positive comments on last issue's editorial. Lots of you seemed to especially like the "nose picking" part, so I'll see if I can't work that into this issue's editorial. Wait! I just did! (Please! Hold your applause!)

My Thoughts on O.J.

Personally, I prefer a blend of pineapple and orange juice. I used to be addicted to Orange Hi-C, but I got over that. Actually, I was once addicted, literally, to Coca-Cola. Back when I was a kid, a day didn't go by that I didn't drink at least three cans of Coke. Then one day, we just ran out, and I didn't get any more for a whole week! I had a really bad case of the shakes for a couple of days and had to get by with drinking tea. After that, I cut way back on the amount of Coke that I drank, and when caffeine free Coke came out, I switched to that exclusively.

On Schedule!

If you are a long time reader, you may have noticed that each issue of *GS+* Magazine has been coming to you earlier and earlier. I'm happy to announce that

you aren't just imagining it, we really *have* been publishing ahead of schedule for the last few issues! In fact, we plan on making up even *more* time over the coming year! (Although, as I write this, it looks like we are going to lose a week on this issue. This is due to the time we've had to spend getting Balloon and AutoArk finished and out the door. But, since we *gained* a week last issue [we should have gained *two* weeks last time, but the Christmas holiday destroyed that possibility], that will actually put us exactly where we should be.)

Bob Goes Ballistic

In the past, I've written about conversations that I've had with readers regarding such diverse subjects as software theft and why the hell we don't give discounts for large back issue orders. These editorials almost always result in (or from) a policy change here at EGO Systems. Well, during that time, the one person that's had to most directly deal with the fallout from those editorials (and the business decisions that surround them) is our order taker-guy, Robert "Bob" Ribaric. Recently, Bob had his own run in with an irate customer on the phone. So he came to me and asked if, in lieu of a pay raise, he could write an article detailing all the policies that I make him follow when he takes your orders. His reasoning was that, with everything in writing, people would be less likely to call up and ask him to do things that would get him fired. This made sense to me, so I said yes. So, please take a few minutes to read it, (it's called "EGO Systems' Policies"), and please remember that Bob studied to be an engineer, not a diplomat!

April Fools!

Before you go any further into this issue of *GS+* Magazine please take a moment to read the following paragraph several times. (It applies to everything that comes *after* this page. Everything on *this* page is 100% true or truth-like.) Thank you for your time and attention.

This is our annual April Fools issue! Anything and everything in this issue should be considered a potential untruth and/or joke. If something sounds too good (or too bad) to be true, it probably is!

Well, that's all the rambling I've got room for this time. See you next issue!

Diz

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GS+

Magazine

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On the Cover

Bob Sez . . .
"I personally read every letter, order and
FAX that we get!
Please keep them coming!
I love you all!"

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Letters

Dear Mr. Disbrow,
... Do you have an address for anyone that services Applied Engineering Apple II memory cards?

Frank Gizinski
Racine, WI

Tony Diaz at Alltech Electronics tells me that they can probably repair just about any Applied Engineering product out there. For information on terms and rates give Tony a call at Alltech. The number is (619) 724-2404. (If you need their address be sure to check their advertisement elsewhere in this issue. Check the list of advertisers in the table of contents for the exact page number....)
Diz

Diz,
I'm having a problem with Addressed For Success. Back in early December I wrote you a note asking if Addressed For Success would work with an already made database file in AppleWorks GS. You replied that all I had to do was convert the file to an ASCII text file and it would transfer. On that point, I ordered Addressed For Success. Last night I finally had a chance to try it out. After installing it, I read the "read me" file and noticed there was something about Apple not releasing the formats for AppleWorks GS database stuff so Addressed For Success wouldn't work with it. My fears were confirmed. I tried to load a database file. Addressed For Success couldn't see it in the folder.

I tried saving it as an ASCII text file; Addressed For Success couldn't see it in the folder. I opened the file with [EGOed] and tried saving it as a text file, an AppleWorks file, and a Teach file. Addressed For Success couldn't see any of the files in the folder I had placed them. Am I out of luck? I'm not positive that back in December that I said I had AppleWorks GS Database files and perhaps you assumed I had AppleWorks Classic files. Or is there something else I'm missing?

John G. Massura
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Nope, the fault is mine. What the Addressed For Success a.Read.Me file should say is that you can't bring an AppleWorks GS database file into Addressed For Success directly. Instead,

you must first save the file as an ASCII text file, and then import that text file into an Addressed For Success list. Just for the record, here's a step by step description of how to do this.

1) Run AppleWorks GS and open the database file that you want to use with Addressed For Success.

2) Using AppleWorks GS, rearrange the order of the fields in the database so that their order approximately matches the order of the fields in an Addressed For Success list. (You should do this in AppleWorks GS because you can't change the order of the fields in Addressed For Success. To move a field in AppleWorks GS, change to the list view, hold down the option key, click and hold on the name of the field you want to move, and then move the mouse left or right. When you let go of the mouse, the field will be moved.)

3) Pick the Save As item from the AppleWorks GS File menu. When the dialog appears, click on the radio button labeled "As ASCII Text" and type a new name for the file. Then click the Save button. AppleWorks GS will show a dialog telling you that the file is being exported. (Note that AppleWorks GS does not say that the file is being saved as text, just that it is being "exported.")

4) Quit AppleWorks GS and run Addressed For Success. Pick the New item from the File menu. When the dialog appears, make sure the "List" check box is turned on and then click on the New button. A new list window will then appear.

5) From the File menu, pick the Import item. This will bring up a Standard File dialog that you can use to locate the text file you created in step three. At this point, you can proceed as detailed on page E-6 of the Addressed For Success manual in the section "Importing an ASCII Text File."

Diz

Hi Diz!
Thanks for continuing to support the IIGS! ... I am trying to use the IIGS on the Internet, but I am not having any fun at all with Unix. It may be fun to play with, but it is not very productive for me at \$3.00 per hour. I have used the Mac to try and find some useful shells or other utilities to use, but I am not familiar enough with C and other languages to be

able to put them to use. I only have ORCA/C v1.2.1 and none of the utilities I have found will run. Do you have any suggestions as to what would be a good starting point?

Don Dygert
Chattanooga, TN
Internet: D.Dygert@genie.geis.com

Well, I'm assuming that you mean that you've been downloading executable Unix utilities and then trying to run them under the ORCA Shell. This won't work. What you must do is download the source code for these utilities and then recompile them on the IIGS. However, even this probably won't work without a lot of work on your part. Still, I agree that it would be nice to have some Internet utilities for the IIGS. Doing something like this is something that Joe and I have kicked around, but we keep getting distracted by all of our other projects.

So, my advice would be this: Check out the A2Pro area on GENIE and ask if anyone there knows of any Internet utilities that have been ported to the IIGS. You should also get in contact with Jawaaid Bazyar at Procyon (Internet: bazyar@netcom.com) to see if any of those utilities are available for GNO/ME. (GNO/ME is a Unix work-alike for the IIGS.) Also, you should write a letter to us here at GS+ Magazine so that we can run it and ask all of our other readers for any help that they might be able to give.

Diz

Dear GS+:

... In addition to my IIGS, I also use an IBM clone ... which is connected to [an] Hewlett-Packard 540 DeskJet printer. I would like to avoid buying an HP 550C DeskWriter printer for the IIGS if I can share the HP 540 with my IBM clone using an A/B switch. Is this possible, and if so could you please describe the cables and software necessary to do so ... ?

Allan V. Moran
Littleton, CO

You should indeed be able to share the printer between these two computers using an A/B switch box. In fact, my old roomie and I did something similar to this a few years back. (However, this was a few years ago, so you might have to do some improvising if your printer turns out to be a bit different from the one we were sharing.) The printer we shared

was an original HP DeskJet, and one of the cool features of this printer was that it had both serial and parallel interface ports. (I believe that DeskJet printers still have both of these ports built into them. If not, you may need to buy a parallel interface card for your IIGS. Alltech sells them . . . but I digress.) Since I didn't want to spend money on a parallel card for my IIGS (and since the switch box I had was for a serial connection), we decided to hook up to the printer through its serial port. Here's how you can do the same thing.

First of all, you need to buy your A/B switch box. A simple 25-pin serial switch box should work fine for this. If you don't know what this is, it's a switch box with three ports on the back. Each of those ports is a 25-pin D-shaped female serial connector. If you have a standard external modem, it looks almost exactly like the big connector on the back of your modem. (Radio Shack sells a shielded A/B switch box that will work perfectly. Its part number is 26-115 in their 1994 catalog, and the cost is \$24.99. Note that this is about \$10 more than you would pay for an unshielded switch box.)

Next, you need a cable to run from the output of the A/B switch box to the printer. First you'll need to determine if the port on the printer is male (i.e. it has pins sticking out of it) or female (i.e. it has holes for pins to stick into it. Sorry ladies, but I didn't name these things.) The port on the printer will probably be female, so you will need a cable that has a male connector at each end. (This is assuming the A/B switch box has a female output connector). So, assuming two female connectors, you would need a simple pass through cable (i.e. the cable allows the signal from each pin to pass through from one end to the other) with a male connector at each end. This is actually easy to make yourself. Simply go to Radio Shack and buy a length of 25-pin ribbon cable and two "insulation displacement" male connectors. (Looking at the 1994 Radio Shack catalog, the part numbers are: Ribbon cable - 278-772, 25-pin male connectors - 276-1559. If you need a female connector, it's part number is 276-1565. The total cost is about \$13 to make a five foot cable.) After you have this cable, run it between the output of the A/B switch box and the serial input of the printer.

Now you need to run an appropriate cable from each computer to the switch box. Assuming that your PC is currently plugged into the serial port of the printer, simply unplug the PC cable from the printer and then plug it into one of

the input ports on the switch box. (If you were using a parallel connection from the PC to the printer, you'll need to buy an appropriate serial cable to hook the PC to the switch box. Radio Shack should have those as well.) As for the IIGS, all you need to do is get a standard IIGS or Macintosh modem cable (i.e. 8-pin to 25-pin) and run it from the IIGS printer port to the remaining input port on the switch box. That's it!

Oh, you will need appropriate printer driver software to actually use the printer from your IIGS. For information on that, contact either Seven Hills Software or Vitesse. They each sell software (Independence and Harmonie respectively) that will let you use various HP printers with your IIGS. (Contact information for these companies can be found in the GSP.FAQ file on your GS+ Disk.)

The only other advice I can give you is to make sure your cables are long enough! When my roommate and I were putting our setup together, we each built our own cables, and they were each about 20 feet long! After all, he didn't want to move his computer into my room, and I didn't want my computer in his room. So, we set the printer up in a neutral location, which required some really long cables.

Diz

Diz,

. . . In the last few issues you have mentioned that you wanted ideas for getting new subscribers. Have you ever thought of trying to include something in "The Apple User Group Connection" monthly mailings? I know that my user group gets a whole packet of stuff every month from them. All sorts of advertisements for software, hardware, etc. It's always all Macintosh stuff and never any Apple II. I'm sure that any Apple II stuff would be noticed by any Apple II groups looking for it.

. . . I wonder why none of the Apple II supporters out there use the "User Group Connection," unless they don't accept Apple II stuff or maybe the price is outrageous. Check it out if you have some time. It might help get the word out a little better.

Neal Layton
Salem, OR
Internet: nlayton@teleport.com

D'oh! Why didn't I think of that? Thanks Neal! I will indeed look into that! (Hopefully, other Apple II vendors will see your letter here and check it out for themselves.)
Diz

Diz:

This is in response to a letter in [GS+ V6.N3]. David Pregont was having problems with his TransWarp GS not resetting. I too have had this problem while messing around with the cable length of the adapter from the TransWarp to the 40-pin DIP connector [which plugs into the CPU socket]. If one of the end wires is not making contact with the pins of the the 40-pin DIP connector, then reset won't work. These early cables were a big problem with the original TransWarp. Applied Engineering eventually came out with a different cable (which can be identified by the black line on it) that was more dependable. So a solution for David would be to try and reseat the connectors or just replace the cable with an IDE drive cable cut in half.

The cable I used to do this was a generic IDE drive cable with a 40-pin connector on each end. Notice that each of these connectors is exactly the same as the connector on the end of the original cable that plugs into the TransWarp. The IDE cable will have one of these on each end, but all you need is one. So, decide how long you want the cable to be and cut it to that length. (If you cut the cable long enough, you can use your TransWarp from slot 7!) Now you will need to connect the cut end of the cable to a 40-pin DIP that will plug into the CPU socket. A 40-pin DIP to ribbon connector can be bought from DIGIKEY (800-344-4539, part number ADP40T-ND), or from Allied Electronics (800-433-5700, part number 515-7530). Make sure when you get the connector that pin #1 (looking at the 40-pin connector with ribbon side up, this will be the pin in the upper left hand corner) will connect to wire #1 (the colored wire) of the IDE cable. Once you have the 40-pin DIP connected, you should have a usable replacement cable that looks like the original, only longer.

In closing, I had the exact same problem with resets when I was doing this project of building my replacement interface cable. I built the cable in the first place because my machine was crashing for no apparent reason and I was able to duplicate the crashes just by moving the (old) interface cable. When I put my new cable together I could no longer reboot. I took apart my 40-pin DIP adapter and found out that pin #40 (which is the reset line) was not crimped correctly. I re-crimped it, put the cable back together and everything worked fine.

David also wrote that his problem started after he installed the 32K cache upgrade on his TransWarp. It could be that the wire that pin 40 connects to broke when

the update was performed. So, a new cable should do the trick.

David Fretz
Nassau Bay, TX
Internet: ST3B1@JETSON.UH.EDU

Dear GS+:

... Would it be difficult to make a HFS file recovery/repair utility, much like Deliverance or ProSel? I don't have access to a Macintosh to make repairs to my HFS partition [on my hard drive]. I've also purchased a 540MB hard drive, on which I plan to have a large HFS partition for most of my software. It would be nice to have a program that would reliably fix the problems that can occur with the HFS file system on the IIGS. I realize this probably won't be on a standard issue of GS+ Magazine, but if you did make such a program, I would gladly pay \$20-\$30 for it. An HFS optimizer would be nice too

Bill Scheffler
Barnesville, MN

The other day, when the HFS disk containing all of my development tools and source code died, I was wishing for exactly the same thing Bill! (Fortunately, we do have a few Macintoshes around here, so I was able to use the Norton Utilities for Macintosh to recover everything.) Unfortunately, as far as we can tell, the actual file structure of an HFS disk is a closely guarded secret and only a select few companies (i.e. folks with deep pockets) have been able to get the information from Apple. This lack of information is the main problem that has prevented the IIGS development community from tackling this problem. Frankly, if someone did come out with such a program, and it worked, they would probably make a ton of money!

Until that happens, there are two things you can do to protect the data that you have on HFS volumes:

1) Back it up! You should do this anyway, regardless of the type of disk you are storing things on, but it is very important if you are going to be keeping things on an HFS disk.

2) Become really good friends with a Macintosh owner that has a copy of the Norton Utilities.
Diz

Dear GS+:

I am inquiring about the possibility of you producing a patch or add-on for System 6.0.1 that would park the heads of a hard drive via the RamFAST SCSI

card when you select the Shut Down menu item in the Finder

David McClay
Lucasville, OH

Well, I checked with the folks at Sequential Systems and they told me that this could be done, but there really isn't any need to. You see, most hard drives automatically park their heads when you shut off their power. So, using an outside program to park the heads is not really necessary. Of course, some older hard drives don't automatically park their heads, so such a utility would definitely be handy if you have one of those drives. But, if your drive is less than five years old, you probably don't have anything to worry about. Then again, if you do have an older drive and you really want this capability, let Sequential Systems know!
Diz

Diz:

I appreciate the review of Financial Genius [in GS+ V6.N3], and especially the "A" for effort. I would, however, like to make a few comments. First, I wish you would have consulted me concerning your other problems (we did discuss the one transaction that froze the computer on reconcile/remove); I might have been able to shed a little light on your concerns. The particulars are as follows:

1) Financial Genius does, in fact, use the "double entry" method of accounting. If you pay your credit card via your checking account, the payment will show up in the credit card "base category" (you do, of course, have to distribute the money to that category by selecting it as one of the distributions—the standard way, even in Quicken).

2) Sorting of dates is done correctly as far as I know. I have not seen a mis-sorted date, nor has one been reported to me. If it indeed happened, it is a bug and needs to be fixed, so send me details. [Editor's Note: Rick later wrote me the following note regarding this aspect of the review - "[By looking at a copy of the corrupted account file you sent me] I was, in fact, able to reproduce the October before September sorting 'problem.' I . . . discovered that you set your 'starting month' as October, 1994. So, when you entered a September date, Financial Genius thought you were entering September 1995! That's one of the reasons that the next version will have space for a year in the date field of the transaction register"]

3) You do not, in fact, have to visit the transaction filter every time you want to

look at Past Transactions, nor do you have to enter the Preferences dialog in order to toggle that action. The manual states that holding down the option key while performing the action that normally displays the Filter dialog will effectively bypass that dialog and filter using your saved default filter criteria. If you have the preference set to bypass the dialog, holding down the option key will show you the dialog in that instance.

In regard to your statements concerning the interface—too many windows, and even terminology—I agree wholeheartedly. At the time that Financial Genius was released, I had no experience using Quicken. I simply wrote a program for my use, that also conformed to the requests of many users and testers in the IIGS world. Since then, I have obtained Quicken on my PowerBook, and have used it extensively. Only now do I see what Financial Genius could be (although I think it's pretty good now) and am making strides in that direction. Work is being done on a version 3.0, but due to time constraints and shortcomings in my programming environment, that work is going slowly. In fact, no promises are being made that it will even be released

Finally, I am sorry that you experienced so many freezes, crashes, and the corruption bug, but I believe that experience to be unusual. I hope that the many Financial Genius users out there will write to you and tell you that fact. (On the other hand, if others did experience the same things, I hope they write, too. Very few Financial Genius users [about 5-8] wrote me concerning excessive freezes and crashes, and the majority of those complainers wrote back to tell me that their problems were mysteriously solved when they added a fan to their system, or made some other type of system change.) It is a shame that you were not able to view too many reports and graphs due to your difficulties; I think they are the true strength of Financial Genius!

Please let your readers know that those with Internet access can find the Financial Genius demo at several FTP sites (e-mail me for details), and those without access to online services may send \$5 to me for a copy of the demo Again, thank you for your review and your honest statements

Rick Adams
Author of Financial Genius
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Whenever I have a problem with a product I'm reviewing, I have to decide whether or not I should contact the creator of the product as "myself" or using an assumed name. (Contacting folks as "Steven Disbrow of GS+ Magazine" tends to get me special treatment that doesn't always reflect what "Joe T. Shmoe" might get. However, I don't think that was the case here, that's one of the reasons I gave you the "A" for effort on support.) Then, when I finish a review, if there are still problems left unresolved, I have to decide if I should let the creator of the product look at and comment on the review. I did this once, a long time ago, and it proved to be a big mistake! In this case however, I definitely should have at least voiced my concerns to you about the apparent lack of double entry accounting. I believe my thinking was, "The terminology is weird, and it doesn't look like it's distributing things properly, and, of course, I know what I'm doing, so . . ." Sorry about that! (This proves that pride goeth before embarrassment, and that the only stupid questions are the ones we don't ask!)

As for the problem with the transaction filter, I read and re-read the manual and never saw the note about the option key. But, after I got your letter, I opened the manual to a random page (page 90), and there it was! Sheesh! This is not my day!

But, other than those two errors on my part, I stand by all the other points I made in the review. Especially the part in the conclusion which said that Financial Genius could be a great program with just a bit more work! So, I'm very glad to hear that you are working on a new version! Keep at it and let us know when it's finished!
Diz

GS+:
The files that are in the Documentation folder use fonts that are hard to read. Would it be possible for you to change them in the future so that those of us with less-than-perfect vision can read them?

A few people, over the last few years.

Well, one reason we use the fonts we do in our disk-based documentation is that they match the fonts that we use in the magazine. This helps us to keep our documentation consistent between the magazine and the disk, and it allows us to use the same typographic conventions (i.e. courier for code fragments, boldface for filenames, etc.) in our disk-based documentation. Another reason that we use these fonts is that they look really nice when you print out the

documentation. However, if you don't plan on printing out any of the documentation, you can easily change the fonts yourself. Simply open the offending file using EGOed lite, pick the Select All item from the EGOed lite Edit menu, and then pick a font and size that you can easily read from the EGOed lite Font and Size menus. (Courier and 12 point are favorites of mine.) If you are working from your backup copy of your GS+ Disk (and you should be!) you can then pick the Save item from the EGOed lite File menu and the new font and size will be saved so that you don't have to reset it again.

Diz

To Whom it May Concern:

Help! I am looking for old Apple IIGS programs. They are no longer made by the companies. I use them in my classroom and I am down to one disk of each.

The programs I am looking for are: PaintWorks Plus by Activision, Fantavision and VCR Companion, both by Brøderbund . . .

Carla Johnson
Bloomfield, NM

Well Carla, I might get yelled at for saying this, but if your school paid for more than one copy of each of those programs, and the other copies have simply become damaged over time, you should go ahead and make yourself some extra copies (up to the number that were originally purchased). However, if that isn't the case and you need some way to come up with other copies here are a few suggestions . . .

First, contact Brøderbund and see if they can provide you with additional copies or the name of a supplier that might still have some copies for sale. (You can also try to contact Activision, but they have been in and out of business a lot over the past few years and you might have some major trouble tracking them down.)

Second, contact Quality Computers to see about purchasing Platinum Paint. It can do everything that PaintWorks Plus could do, and it has the added bonus of actually being supported by Quality Computers. Your school should already get Quality's Enhance catalog, but if it doesn't, call them at 800-777-3642 and they'll be happy to send you a copy.

Finally, you might want to check into some alternative programs for Fantavision and VCR Companion. The recently released Animasia 3D (available from Animasia, 407-380-9932) might

make a good Fantavision replacement, and HyperStudio (available from Roger Wagner Publishing, 800-448-4797) can almost certainly do whatever VCR Companion could do. The only problem with this route is that each of these programs requires a IIGS and they probably also require a more powerful hardware setup than your school has provided you with.

Diz

GS+ Magazine Staff,
. . . On the GS+ Magazine feedback form, you asked about any programs, etc., that we may like to see. How about a program to allow the IIGS to save a file [to an MS-DOS disk]? I know that the BlueDisk controller is available, but I already have an Apple SuperDrive and a SuperDrive controller card and would rather make use of it if possible . . .

P.S. I don't know if you have covered this or not, but if any of your readers are having problems with their HP DeskJet 520 printing extremely large fonts after the first page of a document (using the Harmonie drivers), have them try the driver for the 560C instead. This new driver works fine, but they will have to disable the color option to use it with the 520.

Mark Johnson
Custer, SD

Thanks for the information about the HP 520 Mark! As for your program suggestion, we didn't write it, but there is a wonderful shareware package (\$15 U.S. or \$20 Australian) called "MS-DOS File Utilities" that can do exactly what you ask for. It even works with your SuperDrive controller card! For more information on this package, check out the review I wrote in GS+ V5.N5, or contact the author directly. Here's how:

Peter Watson
P. O. Box 493
Doncaster, Vic 3108, Australia
Internet: paw@ausom.oz.au

If you have a question, comment, or criticism about GS+ Magazine, we want to know! Due to space limitations, letters may be edited and we can not answer every letter here in GS+ Magazine. If you want a personal reply, please include an e-mail address, a daytime phone number, or 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+

Mr. Priceguide Discovers CD-ROM

By Erik Kloeppel

Try this on for size: You are a free-lance writer of computer-related articles, and you just got paid for your last article. Wonder of wonders, the bills have all been paid, and your significant other says, "It's your money, dear, have fun!" Ohhhh, boy! I want a CD-ROM drive! (Yes, it's unrealistic. [Music from The Mamas and the Papas "Dream a Little Dream" plays in the background . . .] I have to buy clothes for the kids instead. Besides, her money is *her* money, and my money is *our* money . . .)

But, just the same, let's pretend you *could* get away with buying a CD-ROM drive for your IIGS. And, let's also pretend you are unsure of all the little details that surround this newfangled technology and you really want to know those details before you buy.

Foiled Again . . .

To begin with, let's look at the media, the disk itself. Physically, it's approximately 5.25-inches across, about a millimeter thick, and it looks an awful lot like a standard music CD. In fact, if it weren't for the writing on one side, you couldn't tell a CD-ROM from an audio CD or from a CD-I (Compact Disk Interactive) disk. The reason for this confusion is simple. CD-ROM disks and audio Compact Disks (and others) *are* physically identical. The disks are nothing more than a very thin layer of aluminum foil laminated onto a slab of plastic with some clear laquer laid on top. This plastic serves two purposes; one: It keeps the foil stiff, so it doesn't fold or stretch, and two: It protects the foil from rips and tears from the bottom. You need to be just a *little* careful with the top of the disk (where the printing is) because there's just a thin layer of laquer before you get to the foil. If the foil rips or tears or whatever, your disk is effectively dead.

It's All Done With Mirrors . . .

Unlike floppies or tapes or even hard drives, when information of any nature is written to a CD, it's not done electronically. That is, floppies and such make use of the electromagnetic properties of iron oxide (rust!) to store data as variations in a magnetic field. The problem with these iron oxide methods is that we live in a world that is full of electromagnetic pollution. If you are careless about where you leave your disk, data can mysteriously vanish. Leave a floppy on an electrical cord (say, the one to your 'fridge) overnight and see what happens to your data. This may seem a

little extreme, and it is, but it's only an example. On the other hand though . . . Do you know where the electrical lines run in your home? Are you always sure to never leave a disk next to the CPU power supply? Even if you avoid this hazard, what about that time you spilled soda on your disk? I can't count the times I've had to toss a disk because I've spilled something on it (no, I don't practice safe computing, sodas and cookies take over my desk whenever I work).

With CD technology, data isn't stored electromagnetically. Instead, it's burned into the foil with a laser. Basically, as with electromagnetic media, each data point, or bit, must be precisely and evenly spaced. (And, as with a magnetic disk, if things aren't within tolerance—for whatever reason—you get I/O errors.) On the CD, instead of the bit being represented by a variation in a magnetic field, your CD-ROM drive bounces another laser off the bottom of the disk as it spins and takes note of how much light is reflected back to a light sensitive device. The burn mark ("pit") by itself does not represent a one or a zero. Instead, if there is no change in the reflected light in a given period of time, it's a zero. If the intensity changes from dark to light or vice versa, it's a one. Given a good microscope, you can actually see your data on the disk.

Another thing to think about: The life span of unrefreshed data on iron oxide media is about 10 years. That means that if you don't re-write the data to disk every 10 years or so, your data stands a better than even chance of behaving like an old soldier. (For all you youngsters: "Old soldiers never die, they just fade away.")

With the foil on its plastic platter, the data on a CD is expected to last longer than 300 years. That's longer than some of us have been alive!

It's Not the Size of the Ship . . .

Magnetic media has the data written in separate and distinct "tracks," each track a complete circle around the disk. CD-ROM disks have the data written in one spiral track that is *3 miles long!* The track is one micron wide, with 1.6 micron gaps between each loop of the track. (For comparison: The typical human hair is usually about 40 tracks [100 microns] wide.)

Shop & Compare!

How do CD-ROM disks relate, in terms of storage capacity, to your basic floppy? Well, an 800K floppy can hold about 175 typewritten pages; a CD-ROM disk can hold 680MB, roughly equal to 1,500 floppies, or 300,000 single-spaced typewritten pages, or 24 volumes of an encyclopedia. If you read one page per minute, 12 hours a day, it would take 19 months to read all the information on *one* CD-ROM disk! Transferring all the data on a CD-ROM via a 2400bps (bits per second) modem would take 32 days and probably generate some truly awesome connect charges!

Heavy-Duty Reading . . .

If you get into a really technical discussion about CD technology, you may hear terms like "Red Book," "Orange Book," "Yellow Book," and "Green Book." These are the publications from Phillips (the inventor of CD technology) that define all the specifications for the various CD hardware and software standards. The Red Book contains the standards for audio CD (CD-Digital

Table 1
Single & Double Speed Drives

Single Speed Drives			
Model	Price	Vendor Code	
Apple CD 150	\$149	B	
Panasonic	\$95	B	
Double Speed Drives			
Apple CD300e	\$249	L	
Nec Multispin 2V	\$224.98	J	
Chinon 525	\$249.95	K	
Nec Multispin CDR-74-1	\$199	I	
Sanyo SH-93R	\$229	G	
Chinon 535	\$289	D	
Harmony	\$249	H	

Vendor codes and addresses appear in Table 3 at the end of this article.

Audio). The Yellow Book has the standards for CD-ROM (CD-Read Only Memory). The Orange Book has the specifications for the new recordable CD technology [Editor's Note: Perhaps they'll call this "CD-RAW" for "CD-Read and Write"!], and the Green Book carries the standards for Phillips CD Interactive (CD-I). Newer model CD-ROM drives, and really up-to-date software may allow (technically) you to read/playback CD-I disks, though for now you'll have to buy a separate CD-I machine (which is actually a pretty cool device in its own right).

What's In a Name?

Another term you might have heard is "MPC." "MPC" stands for "Multimedia Personal Computing," and applies to MS-DOS type machines only. But, since you'll see lots of CD-ROMs that have "MPC" stamped on them, I'm including the definitions here for completeness: MPC level 1 requires a minimum Intel 386 CPU, 2MB RAM, 30MB hard drive, VGA display, an 8 bit sound card, and a single speed CD-ROM drive (150kbps). MPC level 2 requires a Intel 486sx CPU running at 25MHz, with 4MB RAM, 120MB hard drive, 256 color VGA video, 16 bit sound card, and a double speed CD-ROM drive (300kbps). Personally, I think it's a good thing we don't have to worry about this stuff. MPC disks are designed specifically for the PC market, and from what I can see, are generally what I call "Flash-bang." (i.e. MPC disks are usually games, and other non-productive stuff. But, in all fairness, there is some nice stuff available for the label. I refuse to admit to "sour grapes.")

Driven to Distraction . . .

CD-ROM drives are different from your basic audio CD drive. The CD-ROM drive has to do *everything* your audio

drive does, and more. It has to be faster, allow for random access to the information on the disk, and provide better error correction. While the original CD-ROM drives were no faster than audio drives, nowadays it's hard to find one of these slow drives on the market. The speed of today's CD-ROM drives is usually given by means of a "times faster" comparison to one of the original model CD-ROM drives. So, for example, when you see "2X" and "3X" (or "double" and "triple speed") drives advertised, you know that they are respectively two and three times as fast as one of the original "single speed" CD-ROM drives.

Waitaminit! What do "double" and "triple" speed *really* mean? Well, it's like this: Early CD-ROM drives could transfer data to your computer at about 150,000bps. This is about the same speed as your floppy drive, and, in the new computer age, is *slow*. So the industry set out to fix the problem. They couldn't really tinker with the media by this point, so they had to work on the drives. The solution was as elegant as it is simple. Speed up the rate of rotation of the disk. If you spin it twice as fast, twice as much data flows over the read head in a given time period. Strangely, this worked. Now you have double speed (2X), triple speed (3X), and even quadruple speed (4X) CD-ROM drives on the market (each division is based on the original 150kbps transfer speed, and it's not logarithmic, so a 4X CD-ROM drive can transfer data at 600kbps, not 1200kbps). Does this speed increase really mean anything? According to a recent report in *MacUser* magazine (December 1994), if you go beyond the double speed drives, not as much as we would hope. In fact, under "real world" conditions, they report some 2X drives

doing as well as, if not better than, some 4X drives! For use on a IIGS, anything beyond a 2X drive is almost certainly a waste of your money, if for no other reason than the lack of IIGS specific multimedia and game disks.

So, what does the speed of a CD-ROM drive really mean in terms of actual usage? Well, one industry analyst compares an individual bit of data to a grain of rice, and a CD-ROM disk to a football field. In less than a third of a second the drive can retrieve that grain of rice from anywhere on the football field. You should note that this is in reference to seek time—it has nothing to do with the listed speed of the drive (which is the data transfer rate). In fact, it is not unheard of to have the seek time on a 2X drive be faster than that of a 3X drive! Since the CD-ROM drive is a computer peripheral, it just about has to be random access. (Please! Don't anybody remind me about tape drives!) And while a ten byte error on an audio CD is probably undetectable, if even one byte goes astray from a CD-ROM, evil things can happen, so CD-ROM drives also have better error correction routines built in. So after the data is found, the error correction routines have to verify that the data is valid before it is sent back to the computer. This has an impact on the data transfer rate, which is simply a measure of how fast the drive can move all of the data that it finds from the disk back to the computer.

Of course, a CD-ROM drive can't be *too* different from an audio drive, because it has to be able to play audio CDs as well. While you can't (usually) listen to an audio CD via the speakers hooked up to your computer, most external CD-ROM drives provide a small stereo jack (the same kind you use to plug your earphones into on your portable radio). Those speakers you have plugged into your IIGS will work just fine here, as will your basic pair of earphones if you really want the kids to stay asleep. Some CD-ROM drives also provide a standard set of RCA-type jacks on the back so you can hook the beastie to your stereo and toast the neighbors at four in the morning. IIGS System Software and Sequential Systems RamFAST SCSI card each provide a means of playing audio disks, so whether you have an Apple High-Speed SCSI card or a RamFAST, you can still have music.

What? Another Session?

You might have also heard the phrase "multi-session" in reference to CD-ROMs and CD drives. What does it mean? Well, to explain that, we have to talk about the Photo CD standard. Photo CD was developed by the Kodak company in

Table 2
Triple & Quad Speed Drives

Triple Speed Drives			
Model	Price	Vendor Code	
Nec Multispin 3Xe CDR-600	\$299	I	
Nec Multispin 3XP Plus CDR-301	\$199	I	
Sony CDU-7511	\$265	E	
Quad Speed Drives			
APS T3501	\$299.95	C	
Hitachi CDR-1950	\$419	N	
Nec Multispin 4Xe CDR-601	\$458	A	
Nec Multispin 4X Pro CDR-900	\$487.64	F	
Plextor PX-43CH	\$467	O	
Plextor PX-43CS	\$429	M	
Teac CD-55S	\$349	G	
Toshiba XM3401	\$389	N	

Vendor codes and addresses appear in Table 3 at the end of this article.

compliance with the Phillips Orange Book standard. You can have your own photos put on a Photo CD disk for about \$20 per roll of 36. Up to 100 images can be stored on one disk. These disks, and some others, are known as "multi-session" disks. What does multi-session mean? Basically, each time new data is laid down on the disk it's called a session, because a new catalog, and new data, has to be added after the first group of data. This is entirely different from having various partitions on a hard drive. At some point, the hard drive has *one* master directory, even if the contents are just pointers to "Partition A" and "Partition B." Sessions on a CD-ROM disk are more like adding an additional hard drive device, with a very special way to get at it. So, since you can take these Kodak disks back to have more pictures added at a later date, you can have three or four sessions on one CD disk. The problem is, older CD-ROM drives can't see past the end of session one, and all that stuff you have in sessions two through four can't be seen. As far as I've been able to find out, this is definitely a hardware limitation (i.e. a particular CD-ROM drive can either handle multiple sessions or it can't), not something a really hot programmer could fix.

Fore!

What is a CD caddie? It has nothing to do with golfing. A caddie, in this case, is a plastic doohickie that holds a CD. The caddie is used to transport the disk into and out of certain CD-ROM drives. If you get a CD-ROM drive that requires caddies (as mine does), I strongly recommend you buy half a dozen more caddies. This will save you the time I used to spend ejecting the disk, pulling it out of the caddie, putting a new disk in the caddie, and then inserting the caddie into the machine. With multiple caddies, you can leave your favorite disks loaded into caddies and swap them nearly as fast as floppies. In fact, if you have kids, I would strongly recommend a drive that uses caddies because it's a great way to keep the disk out of the hands of the yard-apes. They can be had for as little as \$5 a pop. Caddies, that is . . . house monkeys are considerably more expensive! (A small warning though, if you use a caddie, make darn sure the lid is closed all the way before you insert the darn thing into the CD drive. I didn't quite make it the other day, and had a rather interesting time retrieving the caddie. Not difficult—just time-consuming.)

Whistle While You Work . . .

But what drives will work on the IIGS? Hey, most CD-ROM drives are SCSI, but a lot of them are IDE drives for use with

the IBM PC. You should stay far, far away from IDE CD-ROM drives, because the simply won't work on your IIGS. (Nope, not even with an IDE controller card!) However, all the SCSI drives should work . . . *if* you have the proper driver! The RamFAST has a very good generic driver built right into the card, and odds are that just about any SCSI CD-ROM mechanism you choose to buy will work with it.

The Apple card is a different story. Nothing is built in, so, unless you buy an Apple drive, you'll probably have to buy a driver for your CD-ROM drive. For instance, Tulin Technology (408-432-9057) sells a driver (for \$49) for the Apple High-Speed SCSI card that works with most NEC CD-ROM drives. Also, the Apple supplied High-Speed SCSI card CD-ROM Driver doesn't work perfectly with SCSI-2 drives. (SCSI-2 is a later version of the SCSI standard that has some minor changes that the Apple driver doesn't know about.) This limitation means that you won't be able to make use of audio tracks on CDs, nor play Audio CDs on a SCSI-2 drive hooked to an Apple High-Speed SCSI card. Fortunately, the guys at Sequential Systems (800-759-4959) have released a new driver that takes care of this problem. (See "What's New?" elsewhere in this issue for complete details.)

Seek and ye Shall Find . . .

What major points should you compare when shopping for a CD-ROM drive? There are some points that are very important, and (of course) some that are merely nice. (I do that a lot, don't I?)

Most importantly, verify that the drive is SCSI, and check the operation of the loading tray. Make sure it extends all the way out of the drive. Some trays require that you actually grab hold and pull before you can drop the CD in. Also, what comes with the drive? You should expect at least a 3-ft SCSI cable, a power cord, and maybe a SCSI terminator. And I'd insist on a money-back guarantee.

After that, look for things like a push button SCSI ID selector, an auxiliary power outlet, an emergency eject hole (like the one on your 3.5-inch floppy drive), and two 50-pin SCSI connectors. Some drives make life harder than necessary by hiding the SCSI ID jumpers behind a panel under the drive, or have just one SCSI connector. However this last problem can easily be worked around with something like a SCSI "splitter." (The company APS sells a SCSI splitter for a mere \$19. They have a cool catalog full of other neat SCSI stuff too. Call

them at 800-374-5688 to get a catalog or to order your own splitter.)

Caveat Emptor . . .

Sad to say, the main reason *not* to buy a CD-ROM drive for your IIGS is that there aren't many CD-ROM disks made specifically for the IIGS. Yet.

Several years ago (1989), InterChange put out a CD-ROM called "GEM" (which stands for "Generous Efforts of Many"). It is chock full of demos, graphics, and full-blown programs for the IIGS and is available today from Wayzata Technology Inc. (See review in *GS+ V4.N2*.) A group in Germany has just put out a IIGS disk, though I haven't yet seen it myself. [We have though! See review of the *AUGE CD #1* in *GS+ V6.N2*.] Finally, DigiSoft Innovations should be shipping their new IIGS-specific CD-ROM by the time you read this. [See "Rumors, Wishes & Blatant Lies" elsewhere in this issue.]

There is an alternative to IIGS-specific disks, though. Sequential Systems is making a go of providing software that allows us to use a certain variety of CD-ROM disks. So far they've done an excellent job of making Compton's Encyclopedia on CD-ROM available, as well as at least 15 other disks. Don't look for any flash-bang games, though. These disks are mostly reference material. (See *GS+ V5.N6* and *V6.N2* for reviews of DiscQuest and the DiscQuest Encyclopedia, and a list of CDs that are known to work with the software.) Another source of disks you can use is a subscription to *develop* magazine (800-877-5548) from Apple Computer, Inc. For \$30 a year, they include a CD-ROM disk with the magazine. Granted, it's now entirely Macintosh oriented, but programmers may like it because it does include source code that might be portable to the IIGS. Also, back issues are available for \$13 each, and before issue number ten, they had IIGS source code on the CD-ROM. The only question is whether a specific back issue will be available when you order.

Where you may run into trouble with non-IIGS disks is in accessing the data itself. Since most CD-ROM disks are intended for other platforms, they frequently include software to make searching for information easier. Also, the data itself may be in some obscure format that will require some work to be readily readable on your IIGS. Obviously, software for the Macintosh or the PC won't run on your IIGS (and the PC Transporter won't recognize the CD-ROM drive, darnit). This doesn't mean the data is inaccessible,

just that you have to work harder to read it. If it's text info, you can use something like EGOed to open and search through files until you find what you are looking for. If you are looking for graphical data, it's more difficult, but only a little. Grab (and pay for) a utility like Seven Hills Software's SuperConvert or Roger Wagner Publishing's Graphic Exchange. Between them you should be able to open and view just about any extant graphic. For more details on getting information off foreign format disks, skip back to GS+ V4.N5 and read Diz's article, "The Scavenger." Also, check out the CD-ROaM program in GS+ V5.N2. Not only does it do a good job of covering a GS/OS bug that prevents you from even *seeing* certain types of CD-ROM disks, it automates some of the data retrieval for you.

Is It For You?

So, where does this leave us? If you just want to play games, forget it. CD-ROM is not for you. If you want to have easy access to some good reference works without going down to the city library, a CD-ROM may be just what you need. If you don't want to mess with the stereo but still want music while you type that letter to Aunt Emma, again, the CD-ROM may be what you want. It's definitely a

cool thing, but (due to the shortage of IIGS compatible titles) hardly a system requirement. It's up to you to decide if it's worth the dent in your budget.

Dr. Priceguide's Prescriptions:

As for my recommendations? Broadly, I'd suggest any double-speed drive and the RamFAST SCSI card. But specifically, to save you wear and tear on your mental state, I'd go with the Apple CD 300e. It will work, it's not expensive, doesn't take up a ton of desk space . . . and, well, it's from Apple. It's also the drive of choice of *MacUser*, and their test criteria seem to me to be acceptable. Another good choice is the Chinon 535. According to the magazine reviews, it's every bit as good as the Apple CD300e and tech support is easier to get. I've provided a list of CD-ROM drives in Tables 1 and 2. Table 1 is single and double speed drives, while Table 2 is triple speed and quad speed drives, just in case you have a *lot* of money to burn.

The Doctor's CD-ROM Checklist:

So, if you are buying a CD-ROM drive (I'll assume you have *some* use for it) this is what you need to check:

1) Is the drive SCSI? If so, is it SCSI or SCSI-2?

2) How difficult is it for you to find drivers for the drive? (If you have a RamFAST SCSI card, this isn't much of a problem. Just call Sequential Systems to verify that the drive you are thinking of buying will work with the RamFAST card.)

3) Is the drive single or double speed? (Remember that faster drives are probably a total waste of time on your IIGS, not to mention a waste of your funds.)

4) How easy is the drive to operate? Does it use caddies? Can you change the SCSI ID without disassembling the entire case? Can you eject a CD even if the power is off (via an emergency eject hole)?

5) How much does it cost?

With this data in hand, you will be well on your way to joining the ranks of the CD-ROM snobs and their "My machine can do something yours can't" attitude. When you buy your drive, drop a line to me (lurch@delphi.com) and let me know of any new CD-ROM titles that you get to work on your IIGS. GS+

Table 3 - Vendor Codes & Addresses

Code	Address	Code	Address	Code	Address
A	A Matter of Fax 65 Worth St. New York, NY 10013 212-941-8877	F	Computer Discount Warehouse 1020 East Lake Cook Rd. Buffalo Grove, IL 60089 800-726-4239	K	Mac Connection 6 Mill St. Marlow, NH 03456 800-800-1111
B	Alltech Electronics Co. 2618 Temple Heights Oceanside, CA 92056 619-724-2404	G	Dirt Cheap Drives 1110 Nasa Road 1, Ste. 304 Houston, TX 77058 800-473-0960	L	Mac Sale International 1150 W. Alameda Dr. Ste. 1 & 2 Tempe, AZ 85282 800-729-7031
C	APS Technologies 6131 Deramus Kansas City, MO 64120 816-483-6100	H	Harmony Computers 1801 Flatbush Ave Brooklyn, NY 11210 718-692-3232	M	Megahauss Hard Drives 1110 Nasa Road 1, Ste. 306 Houston, TX 77058 713-333-1910
D	Cad & Graphics 1175 Chess Dr. Ste. C Foster City, CA 94404 415-378-6400	I	Jem Computers 35 Spinelli Place Cambridge, MA 02138 617-497-2500	N	Midwest Computer Works 180 Lexington Dr. Buffalo Grove, IL 60089 708-459-9410
E	Computability Consumer Electronics Box 17882 Milwaukee, WI 53217 414-357-8181	J	Mac Bargains 15815 S.E. 37th St. Bellvue, WA 98006-1800 800-407-7404	O	NECX 4 Technology Dr. Peabody, MA 508-538-8100

Note: Every effort has been made to ensure the accuracy of the contact and pricing information shown in this article. However, prices can change rapidly as new technology becomes available, and vendors have a tendency to change prices, locations, and phone numbers without warning. Also, none of these vendors are associated with EGO Systems or GS+ Magazine in any way. So, if you plan to order from one of these vendors, be sure to contact them first and get full details on current prices, warranties, and return policies.

Errata

In the article, "Mr. Priceguide Goes Modem Shopping" in *GS+* V6.N3, there was an error in the contact information for one of the vendors. The phone number for Vektron International (vendor code "G") should have been listed as 800-725-0047. (Actually, we meant to list their international number, which is 214-606-0280, so we actually made *two* errors in that one number! Sorry about that . . .)

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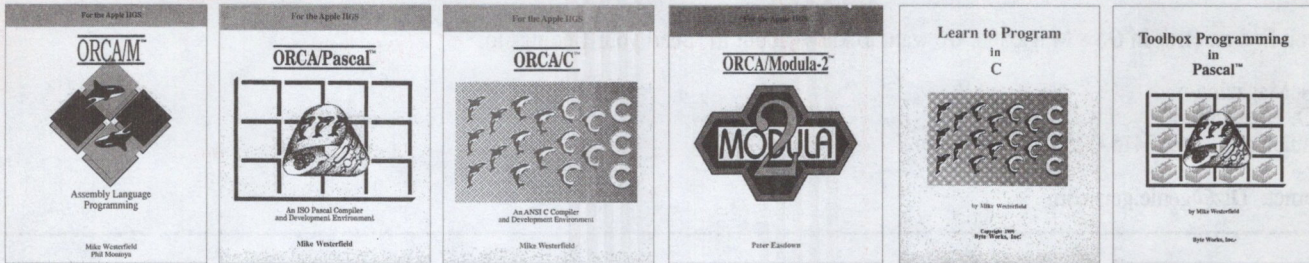
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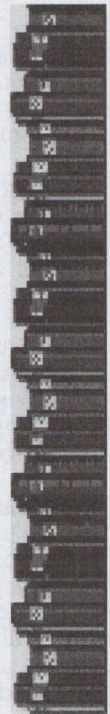
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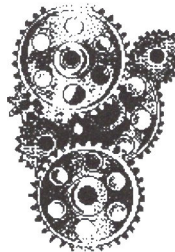
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Programming the IIGS

Part 5: TaskMaster

By Steven W. Disbrow

In the past four articles, we've covered a lot of the basics of writing a IIGS program. In those articles, I've repeatedly mentioned a mysterious tool call, *TaskMaster*, that seems to magically take care of a lot of the work involved in a IIGS program. For that reason, and because *TaskMaster* is so amazingly important to the creation of a good IIGS program, this article will look exclusively at what *TaskMaster* is, what it can do for you and why you would be crazy not to use it.

So, What Is TaskMaster?

Simply stated, *TaskMaster* is a IIGS Toolbox routine that handles the routine processing of events that happen while your program is executing.

Let's Back up

Back in part two of this series, we briefly touched on the concept of *events* and how a IIGS application should deal with them. Before we can talk about *TaskMaster*, we have to dig a little deeper into the "event" concept so that we can better understand how *TaskMaster* does it's job.

So, What's an Event?

In terms of programming the IIGS, an "event" is a record of something that has occurred which might require a response from the currently executing program. Events can come from either "outside" the computer (i.e. something that the user did generate an event), or "inside" the computer (i.e. a tool set generates an event to have some other part of the system take care of something). An example of an externally generated event might be when the user presses a key. An example of an internally generated event would be an "update" event that the Window Manager would generate when it determines that a window needs to be redrawn.

Whatever an event might be, it is described by the IIGS using a data structure called an "Event record." The structure of an Event record is shown in Figure 1. Looking at this information, you can see that the Event record is a pretty handy way to pass around information about an event.

When a particular event occurs, the part of the system software that is in charge of recognizing that type of event fills in a new Event record and then puts that Event record in the *event queue* where the rest of the system (including your program) can get at it. The event queue is simply a queue of event records, arranged in the order that they happened, that the system can look through to see what needs to be taken care of next. (Note that some events, like an *updateEvt*, are more important than others, so they always get put at the front of the queue when they happen.) To get an event, your program uses an Event Manager tool called *GetNextEvent* that, you guessed it, gets the next event out of the event queue for you. Once you have that event, you examine the fields of the Event record and then react to the values you find there. For example, if the event is an *updateEvt*, you have to extract the window pointer from the message field of the Event record and then redraw that window. If the event were a *mouseDownEvt*, you would have to check to see if the where field specified a point inside a window. If it did, you would then check to see if that point were in a control. And then you... might just start pulling your hair out when you realized all the other stuff you had to do!

However, if you are using *TaskMaster*, it takes care of all these steps for you! In fact, *TaskMaster* will even call

GetNextEvent for you if you want it to. *TaskMaster* will activate windows, track controls, scroll documents, pull down menus, redraw windows and a whole slew of other stuff that you would ordinarily have to do yourself. (Note that the Macintosh, which is very similar to the IIGS from a programming point of view, doesn't have a *TaskMaster* equivalent! This makes writing a Macintosh application from scratch quite a bit more difficult than writing a IIGS application!)

How do You Use it?

Using *TaskMaster* in your program is actually a lot like using *GetNextEvent*. To use it, you pass *TaskMaster* an *eventMask* and a pointer to a special kind of Event record, called a *Task record*.

Now, an *eventMask* is simply a word (two bytes) containing a series of bit flags that tell the *GetNextEvent* call what kinds of events you want it to look at. For example if you were (for some reason) only interested in responding to mouse down events, you would set your *eventMask* to the value \$0002 and *GetNextEvent* would search for and return the next mouse down event from the event queue. To have *GetNextEvent* look at all events (which is what you would normally do), you would set the *eventMask* to \$FFFF. For a detailed look at the *eventMask* and what its bits mean, see Table 3. (Note that Tables 1 and 2, which I haven't mentioned, are related to the material in Figure 1 and don't really have any immediate importance to this part of our discussion.)

The *Task record* that you pass to *TaskMaster* is actually just an Event

Figure 1 - An Apple IIGS Event Record

Name	Size (bytes)	Field Contents
what	word (2)	An identifying "event code" (see Table 1)
message	long (4)	Event code-specific information about this event (see Table 1)
when	long (4)	The tick count when the event occurred (see below)
where	point (4)	Location of the mouse (in global coordinates) when this event occurred
modifiers	word (2)	The status of all modifier keys (shift, option, etc.) when this event occurred (see Table 2)

Notes:

The "tick count" specified in the when field is the number of ticks (1 tick = 1/60th of a second) that have passed since the machine was last restarted.

An Event record is the first part of a *TaskMaster* Task record. For more information, see Figure 2.

Figure 2 - A TaskMaster Task Record

<u>Name</u>	<u>Size (bytes)</u>	<u>Field Contents</u>
EventRec	16 bytes	This is a standard Event record (See Figure 1 for details)
wmTaskData	long (4)	Varies with the action TaskMaster takes (See Table 4)
wmTaskMask	long (4)	Flag bits controlling TaskMaster operation (See Table 5)
wmLastClickTick	long (4)	System tick count when mouse click happened (See Notes below)
wmClickCount	word (2)	Type of mouse click (single, double or triple)
wmTaskData2	long (4)	Varies with the action TaskMaster takes (See Table 4)
wmTaskData3	long (4)	Varies with the action TaskMaster takes (See Table 4)
wmTaskData4	long (4)	Varies with the action TaskMaster takes (See Table 4)
wmLastClickPt	point (4)	The location of the mouse click (See Notes below)

Notes:

When used in a Task record, the names of the fields in the Event record portion will sometimes be prefaced with the characters "wm". (i.e. The "what" field will be referred to as "wmwhat".) However, this varies from one reference to another. (The "wm" stands for "Window Manager" because TaskMaster is a Window Manager tool.)

The values returned in the fields wmTaskData, wmTaskData2, wmTaskData3, and wmTaskData4 vary depending on the event that TaskMaster processes and how TaskMaster handles that event. For a listing of all the possible combinations, see Table 4.

The wmLastClickTick and wmLastClickPt fields of the Task record will *usually* contain the same values as the when and where fields of the EventRec.

record with some extra fields at the end of it. Take a quick look at Figure 2 to see what those extra fields are and then we'll go over the way TaskMaster uses them.

The Task Record

The Task record data structure is, as I mentioned before, really just an Event record with a few extra fields defined at the end of it. These fields are filled in by TaskMaster *after* it calls GetNextEvent and processes the event that is returned. What TaskMaster puts in these fields is information related to the event that it just processed. This extra information can be used by your program to figure out exactly what TaskMaster did, and, if necessary, take additional action. Some of the additional fields in the Task record duplicate some of the fields in the Event record (i.e. wmLastTickClick is usually the same as the when field in the Event record), but for the most part, the additional fields actually do give you new information that you would not get otherwise.

The TaskMask

While TaskMaster can handle just about every type of basic event that occurs on the IIGS, there will be times that you won't want it to deal with certain types of events. So, the taskMask is provided as a simple way to tell TaskMaster exactly which events you want it process and which types you want it to leave alone. The taskMask is a 32 bit flag field that you set inside the Task record before you call TaskMaster. After TaskMaster calls GetNextEvent, it looks at the taskMask that you provided and uses it to decide if it should process the event or simply return control to your program.

Table 5 shows all of the bits in the taskMask, and what each of those bits tells TaskMaster to do, or not to do. (When you look at Table 5, take a close look at bit 21, tmNoGetNextEvent, and the notes for it. This bit allows you to call GetNextEvent yourself so that you can pre-process events before TaskMaster ever sees them! Or, you can even feed "fake" events to TaskMaster and have it handle them for you! If you want more information on using this bit of the taskMask, check out "Working With the Toolbox - Part 14, The TextEdit Tool Set" in GS+ V6.N2.)

So, as an example, if you wanted TaskMaster to handle everything *except* the dragging of windows, you would set your Task record's taskMask to a value of \$001FFBF and then call TaskMaster. TaskMaster will then call GetNextEvent and look at the event that it returns. If TaskMaster then determines that the event was a click in the drag region of a window, it will set the wmTaskData field of the Task record to the pointer to the window, and return a result code of wInDrag (see below for more on result codes). If the event *wasn't* a click in a drag region however, TaskMaster will handle the event as it normally would.

The best thing about the taskMask is that by using it in combination with the eventMask you can control *exactly* how TaskMaster behaves and what it does and does not do for you. So, even though TaskMaster *can* do almost all the work of maintaining the IIGS interface, *you* are always in complete control of what TaskMaster does!

The Result Code

Every time you call TaskMaster, it tries to tell you as much about what it did as it possibly can. In addition to filling in the various fields of the Task record, TaskMaster also returns a *result code* when it is finished processing each event. The result code is the first thing your program should look at to determine exactly what TaskMaster did. If TaskMaster handles an event completely, your application does not really need to be concerned with it, and so TaskMaster will return a nullEvt result code. When you get this code back, you know that TaskMaster looked at the last pending event, and handled it completely.

However, in case you absolutely *must* have an idea as to what TaskMaster just did, you can check the low word of the wmTaskData field for the result code TaskMaster *would* have returned if it had not handled the event. In fact, for some result codes (like wClickCalled), this is the only way they will *ever* be returned! (For a complete run down of result codes returned by TaskMaster, and what they mean, see Table 4.)

A Little Perspective

Now, at this point, we've actually covered most of what TaskMaster does and how it works. Before we move on, let's look at an example to put everything that we've learned into perspective.

Suppose you have a window with a dozen button controls in it. Each of these buttons, when clicked, performs a different task. How on earth do you tell *when* a button is clicked and, more importantly, how do you tell *which*

button was clicked? Well, if you are using TaskMaster and the user clicks on one of your buttons, here's what happens next:

1) TaskMaster calls GetNextEvent and determines that there was a mouse down event.

2) TaskMaster checks the tmFindW bit of the taskMask to see if you want it to determine if the mouse was clicked in a window (by calling the FindWindow tool). If so, it continues to step 3, otherwise it returns a mouseDownEvt result code.

3) Since the user clicked in one of our buttons, FindWindow would return wInContent, meaning that the user clicked in the content area of our window. TaskMaster then checks the tmContentControls bit of the taskMask to see if you want it to handle a mouse down in a control. If this bit is set, TaskMaster would then call the FindControl tool and then proceed to step 4. Otherwise, it would return a wInContent result code.

4) If FindControl returns a non-zero part code (Part codes represent the part of a control that was "hit" with the mouse. A part code of zero means that no control was hit.), TaskMaster then calls the TrackControl tool. This tool watches

the mouse button and, when the user lets up on it, determines if the mouse pointer was still over the part of the control that was originally hit. If it *wasn't*, TaskMaster sets the low word of wmTaskData to wInControl and then returns a result code of nullEvt. If it was though, TaskMaster sets up the various wmTaskData fields as shown in Table 4 and returns a result code of wInControl. At this point, your program will once again be in control and you can examine the contents of wmTaskData2 and/or wmTaskData4 to determine exactly which button was hit and then react accordingly.

There are three things that you should notice in this example:

- First of all, by using TaskMaster, you didn't have to do *any* interface "grunt work." That is, you didn't have to look for mouse clicks, you didn't have to figure out which button was hit, you didn't have to highlight that button and you didn't have to wait for the user to let go of the mouse button. All of these tasks are 100% necessary if you want to write a program that conforms to the Apple Human Interface Guidelines, and TaskMaster handles them all for you! All you really had to do was call TaskMaster, check the result code it returned and then look at the ID of the control that was hit and respond accordingly.

- Second, this should drive home the point that when you use TaskMaster in this way, you only get to see the *aftermath* of the event in question. TaskMaster processes each event as much as it can *before* you ever see the event. In fact, in most cases, the events TaskMaster handles will turn out to be nothing at all, and all you will see is a nullEvt.

- Finally, you should have noticed that TaskMaster does a *lot* of work! And all this was just for one possible instance of one type of event (i.e. a mouse down in a control). Just imagine if you had to write this code yourself! Also imagine that you would have to write the code to handle all of the other cases—not just for this type of event, but for all the different types of events! On the Macintosh, you would have to do just that, but on the IIGS, if you are smart enough to use TaskMaster, you don't!

The Last Step

Oh yeah! I've not mentioned it before, but there is one other step that TaskMaster takes before it returns control to your program—it calls the SystemTask tool. SystemTask is a Desk Manager tool call that gives desk accessories a chance to perform the periodic actions that they have defined for themselves. We'll discuss SystemTask in a later article (when we talk about programming desk accessories), but it needed to be included here since it's

Table 1 - Event Codes & Their Event Messages

<u>Event Code (Name)</u>	<u>Event Description</u>	<u>Corresponding Event Message</u>
0 (nullEvt)	Nothing happened!	Undefined (should be zero)
1 (mouseDownEvt)	A mouse button was pressed	Mouse button number (0 or 1) in low-order word. The high-order word is undefined.
2 (mouseUpEvt)	A mouse button was released	Same as mouseDownEvt
3 (keyDownEvt)	A key was pressed	The ASCII character code of the key, with its high-bit clear, is in the low-order byte of the message. The three other bytes are undefined.
5 (autoKeyEvt)	A key is repeating	Same as keyDownEvt
6 (updateEvt)	A window needs to be redrawn	Pointer to the window that needs updating
8 (activateEvt)	A window was activated/deactivated	Pointer to the window activated/deactivated (See Notes below)
9 (switchEvt)	A application switch has occurred	Undefined. This event is never used.
10 (deskAccEvt)	A desk accessory event has occurred	Undefined.
11 (driverEvt)	A driver event has occurred	This value is defined by and is unique to the device driver that generated the event
12 (app1Evt)	An application-defined event occurred	See below
13 (app2Evt)	An application-defined event occurred	See below
14 (app3Evt)	An application-defined event occurred	See below
15 (app4Evt)	An application-defined event occurred	See below

Notes:

Application-defined events (app1Evt, app2Evt, app3Evt and app4Evt) are just that—events defined by an application. These codes are provided so that an application can use them internally to define, post and react to custom events using the Event Manager.

For mouseDownEvt and mouseUpEvt, the button number in the message field should almost always be zero. There simply aren't any two-button mice for the IIGS. (At least not that we know of!)

An activateEvt can specify either an activation or deactivation for a window. To tell the difference, you check activeFlag bit of the modifiers field of the Event record. See Table 2 for more information.

Event codes four (4), and seven (7), were never defined by Apple.

Table 2 - The Modifiers Field of an Event Record

<u>Bit Position (Name)</u>	<u>Possible Values & Their Meanings</u>
0 (activeFlag)	0 = Window specified in message field is being deactivated 1 = Window specified in message field is being activated
1 (changeFlag)	0 = No other change in window being activated or deactivated 1 = Window specified in message field is changing from application to system window, or vice versa
6 (btn1State)	0 = Mouse button 1 was down 1 = Mouse button 1 was up
7 (btn0State)	0 = Mouse button 0 was down 1 = Mouse button 0 was up
8 (appleKey)	1 = Command (Open-Apple) key was down 0 = The Command key was up
9 (shiftKey)	1 = One or both shift keys were down 0 = Both shift keys were up
10 (capsLock)	1 = The caps lock key was down 0 = The caps lock key was up
11 (optionKey)	1 = The option (Solid-Apple) key was down 0 = The option key was up
12 (controlKey)	1 = The control key was down 0 = The control key was up
13 (keyPad)	1 = The key pressed was on the keypad 0 = The key pressed was on the keyboard

Notes:

The activateFlag and changeFlag bits are used only for activate events (activateEvt).

Bits two, three, four, five, fourteen and fifteen are undefined.

one of the things that TaskMaster does for you.

But, What if . . . ?

Now, while TaskMaster *does* take care of most of the basic IIGS interface operations for you, there are some things that TaskMaster simply can't or won't do. For example, TaskMaster will *not* close an application window for you. The reason is that if it did, you wouldn't be able to give the user a chance to cancel the close operation! Also, if you have a window that contains some sort of unique display and that display eats up a lot of memory, having TaskMaster close the window for you would remove the

window from the screen, but the memory that your unique display used would still be allocated and that could cause *major* problems. So, TaskMaster simply reports back that the user clicked in the close box of a window and tells you which window you need to close in the wmTaskData field of the Task record. It's up to your program to act on that information and close the window appropriately. (Note that TaskMaster *will* try to close a new desk accessory window for you. Why? Because new desk accessories actually have to know how to close their own windows. So, all TaskMaster really does in this case is tell the desk accessory that it's time to close its window.)

Summing it All up

Hopefully, this article (and the accompanying figures and tables) has given you some idea of just how cool and powerful TaskMaster is and why you should use it in your IIGS programs whenever possible. (Note that TaskMaster can be used in new desk accessories [via the TaskMasterDA tool call] as well as applications. Other kinds of IIGS programs [see part 2 of this series in GS+ V5.N5] have to make due without TaskMaster.) If you don't remember (this is kind of a long article, and you may have fallen asleep once, twice, or even five times) here's a list of the more important points:

Table 3 - The Event Mask

<u>Bit (Name)</u>	<u>Possible Values & Their Meanings</u>	<u>Hex Value if Set</u>
1 (mDownMask)	1 = Look for mouse down events 0 = Do not look for mouse down events	\$0002
2 (mUpMask)	1 = Look for mouse up events 0 = Do not look for mouse up events	\$0004
3 (keyDownMask)	1 = Look for key down events 0 = Do not look for key down events	\$0008
5 (autoKeyMask)	1 = Look for auto key down events 0 = Do not look for auto key down events	\$0020
6 (updateMask)	1 = Look for update events 0 = Do not look for update events	\$0040
8 (activeMask)	1 = Look for activate events 0 = Do not look for activate events	\$0100
9 (switchMask)	1 = Look for switch events 0 = Do not look for switch events	\$0200
10 (deskAccMask)	1 = Look for desk accessory events 0 = Do not look for desk accessory events	\$0400
11 (driverMask)	1 = Look for device driver events 0 = Do not look for device driver events	\$0800

Notes:

Bits zero (0), four (4) and seven (7) are reserved and have no defined purpose.

Bits twelve (12) through fifteen (15) are for application-defined events (app1Evt to app4Evt respectively) and work in the same manner as the other bits.

Table 4 - TaskMaster Result Codes & Corresponding Values of the wParamData Fields

Result Code (Name)	Description of Event	wParamData (See Notes)	wParamData2 Control Handle	wParamData3 defProc Result	wParamData4 Control ID
\$0000 (nullEvt)	Nothing happened, or TaskMaster handled the event	(See Notes)			
\$0001 (mouseDownEvt)	A mouse button was pressed	Mouse button number			
\$0002 (mouseUpEvt)	A mouse button was released	(See Notes)			
\$0003 (keyDownEvt)	A key was pressed	ASCII key code in low order byte			
\$0005 (autoKeyEvt)	A key was pressed until it began repeating	ASCII key code in low order byte			
\$0006 (updateEvt)	A window needs to be updated	Pointer to window to update			
\$0008 (activateEvt)	A window was activated/deactivated (See Table 2)	Pointer to activated/deactivated window			
\$0009 (switchEvt)	An application switch occurred	Not Defined			
\$000A (deskAccEvt)	A desk accessory event occurred	Not Defined			
\$000B (driverEvt)	A driver event occurred	Not Defined			
\$000C (app1Evt)	An application defined event occurred	Not Defined			
\$000D (app2Evt)	An application defined event occurred	Not Defined			
\$000E (app3Evt)	An application defined event occurred	Not Defined			
\$000F (app4Evt)	An application defined event occurred	Not Defined			
\$0010 (winDesk)	The mouse was clicked in the desktop region	Zero			
\$0011 (winMenuBar)	The mouse was clicked in the system menu bar	Hi word = menu ID, Low word = menu item ID (see notes)			
\$0012 (winClicked)	TaskMaster called SystemClick	This code will never be returned. It is only reported as part of a nullEvt (see notes).			
\$0013 (winContent)	The mouse was clicked in a window's content region	Pointer to window clicked in			
\$0014 (winDrag)	The mouse was clicked in a window's drag region	Pointer to window clicked in			
\$0015 (winGrow)	Mouse clicked in grow region of active window	Pointer to window clicked in			
\$0016 (winGoAway)	Mouse clicked in go-away region of active window	Pointer to window clicked in			
\$0017 (winZoom)	Mouse clicked in active window's zoom box	Pointer to window clicked in			
\$0018 (winInfo)	Mouse clicked in window's information bar	Pointer to window clicked in			
\$0019 (winSpecial)	An Edit menu item was selected	Hi word = menu ID, Low word = menu item ID			
\$001A (winDesktop)	A new desk accessory was selected	Hi word = menu ID, Low word = menu item ID			
\$001B (winFrame)	Click on active window's frame, but nothing else	Pointer to window clicked in			
\$001C (winFrame)	An inactive menu item was selected	Hi word = menu ID, Low word = Zero			
\$001D (winClosedNDA)	New desk accessory was closed	This code will never be returned. It is only reported as part of a nullEvt (see notes).			
\$001E (winCalledSysEdit)	TaskMaster called SystemEdit	This code will never be returned. It is only reported as part of a nullEvt (see notes).			
\$001F (winTrackZoom)	Zoom box clicked, but was not selected	This code will never be returned. It is only reported as part of a nullEvt (see notes).			
\$0020 (winHitFrame)	Click on window frame, window activated	This code will never be returned. It is only reported as part of a nullEvt (see notes).			
\$0021 (winControl)	Click or keystroke in a control	Control Handle Part Code Hit			
\$0022 (winControlMenu)	A control handled a menu item hit	Control Handle defProc Result			
\$8000 (winSysWindow)	This is not an actual result code. It is a flag bit signifying that the result code returned applies to a system window.	(See Notes)			

Notes:

For result codes \$0001 through \$8000A, the value of wParamData is usually exactly the same as the value of the message field in the Event record.

When TaskMaster returns nullEvt, either nothing happened or something happened and TaskMaster handled it completely. This means one of two things:

- 1) If nothing actually happened and the tmdlevents bit is set in the TaskMask (see Table 5), TaskMaster will pass an idle event to the current target control. In this case, wParamData2 will contain the handle to that control, wParamData3 will contain the result from that control's definition procedure, and wParamData4 will contain the ID of the control. Regardless of the setting of tmdlevents, wParamData will be zero.
- 2) If something happened that TaskMaster was able to completely handle, the result code will be nullEvt and the low word of wParamData will contain a the result code that TaskMaster would have returned if it hadn't handled the event itself. In this case, the other fields of the Task record will be undefined. (In other words, if you want to process the event further, you will have to do so based on the contents of the Event record portion of the Task record!)

No information has been provided by Apple regarding the value of wParamData for a mouseUpEvt. It is probably the same as for a mouseDownEvt.

The values returned for winMenuBar depend on the setting of the tMenuBarSel bit in the TaskMask (see Table 5). If this bit is set, the values are returned as shown. If this bit is not set, TaskMaster does not call MenuSelect and therefore can not know or report on the menu or item chosen. In this case, wParamData is zero.

The result code winControlMenu is never returned as a result. It is only returned as a nullEvt (see explanation above). However, in this case the values of the other wParamData fields are set as shown.

• TaskMaster takes care of interface grunt work. By using TaskMaster, you give your programs an excellent start at conforming to Apple's Human Interface Guidelines.

• You don't have to write it. TaskMaster is already written for you, and it works.

• TaskMaster is powerful. It can handle just about every standard event and

interface element that Apple defined for the IIGS.

• TaskMaster is flexible. If you don't want TaskMaster to do something, you can tell it so simply by setting up an appropriate taskMask.

• TaskMaster is easy to use. Just set up your eventMask and taskMask, call TaskMaster and away you go!

If you still aren't convinced that TaskMaster is an indispensable tool, take a long look at the almost 15 pages of pseudocode in *Apple IIGS Toolbox Reference: Volume 3* that describes what TaskMaster does! If that doesn't convince you, just try writing a decent program without TaskMaster! (And may the Woz have mercy on your code!) **GS+**

Table 5 - The TaskMask

<u>Bit (Name)</u>	<u>Possible Values & Their Meanings</u>	<u>Hex Value If Set</u>
0 (tmMenuKey)	1 = Call MenuKey to handle key equivalents 0 = Do not call MenuKey	\$00000001
1 (tmUpdate)	1 = Handle Update events 0 = Do not handle Update events	\$00000002
2 (tmFindW)	1 = Call FindWindow for mouse down events 0 = Do not call FindWindow	\$00000004
3 (tmMenuSelect)	1 = Call MenuSelect for clicks in menu bar 0 = Do not call MenuSelect	\$00000008
4 (tmOpenNDA)	1 = Call OpenNDA when a desk accessory is selected 0 = Do not call OpenNDA	\$00000010
5 (tmSysClick)	1 = Call SystemClick for clicks in system windows 0 = Do not call SystemClick in this case	\$00000020
6 (tmDragW)	1 = Call DragWindow for click in drag region of window 0 = Do not call DragWindow in this case	\$00000040
7 (tmContent)	1 = Activate window after click in content region 0 = Do not activate window in this case	\$00000080
8 (tmClose)	1 = Call TrackGoAway after click in close box 0 = Do not call TrackGoAway in this case	\$00000100
9 (tmZoom)	1 = Call TrackZoom after click in zoom box 0 = Do not call TrackZoom in this case	\$00000200
10 (tmGrow)	1 = Call GrowWindow when user drags size box 0 = Do not call GrowWindow in this case	\$00000400
11 (tmScroll)	1 = Enable scrolling & activate window after click in scroll bar 0 = Do not activate window or enable scrolling in this case	\$00000800
12 (tmSpecial)	1 = Handle special menu items (ID# < 256 - see Notes) 0 = Do not handle special menu items	\$00001000
13 (tmCRedraw)	1 = Redraw controls after an Activate event 0 = Do not redraw controls	\$00002000
14 (tmInactive)	1 = Return wInactMenu when a disabled menu item is selected 0 = Never return wInactMenu	\$00004000
15 (tmInfo)	1 = Activate window after click in information bar 0 = Do not activate window in this case	\$00008000
16 (tmContentControls)	1 = Call FindControl & TrackControl for click in active window 0 = Do not call FindControl & TrackControl in this case	\$00010000
17 (tmControlKey)	1 = Pass key events to controls in active window 0 = Do not pass key events to controls	\$00020000
18 (tmControlMenu)	1 = Pass menu events to controls in active window 0 = Do not pass menu events to controls	\$00040000
19 (tmMultiClick)	1 = Return multiclick information in Task record 0 = Do not return multiclick information	\$00080000
20 (tmIdleEvents)	1 = Pass idle events to controls in active window 0 = Do not pass idle events to controls	\$00100000
21 (tmNoGetNextEvent)	1 = TaskMaster should not call GetNextEvent (see Notes) 0 = Call GetNextEvent	\$00200000

Notes:

The "Special" menu items handled by the tmSpecial bit are usually items in the Edit menu (Cut, Copy, Paste, etc.), or new desk accessory items. All of these items should have a menu item ID number of less than 256. If the item selected is one of the standard Edit menu items, TaskMaster calls SystemEdit.

If the tmNoGetNextEvent bit is set, TaskMaster assumes that the Task record you pass to it contains a valid event that it should process. This allows you to pre-process an event (by calling GetNextEvent yourself) before TaskMaster sees it, or to pass TaskMaster a "fake" event that you create from scratch.

The TaskMask is a total of 32 bits long. However, bits twenty-two through thirty-one (22 to 31) are reserved and have no defined purpose.

Special Edition

By Josef W. Wankerl

One of the neatest things about Publish & Subscribe is the fact that when you change the publisher document, any subscriber documents are automatically updated with the new information. (If you're not familiar with Publish & Subscribe, see the "II Notes v2.0" article elsewhere in this issue.) However, things may work a bit *too* smoothly. You are never notified that an edition has changed, and if you are in a situation where you have many edition files published by other people, it would be nice to know when an edition has changed so you can open your subscribed documents and see what effect the changes have had. Special Edition is a new desk accessory (NDA) that monitors changes in edition files and reports those changes to you.

Using Special Edition

Special Edition maintains a list of folders which contain edition files. You can add folders to the list using the Add button and remove folders from the list using the Remove button. Note that everything inside an added folder, including the contents of other folders, is checked for edition files. When you add a folder, a list of all the edition files in the folder is saved in the Special Edition configuration file. Whenever you want to see if any changes have been made, simply open the Special Edition NDA and click on the Scan button. All the folders in the list will be scanned for changes and any changes will be displayed in three separate result windows: New editions, changed editions, and deleted editions. The new editions window shows you new edition files that have been created since your last scan. The changed editions window shows you edition files which have been modified since your last scan. The deleted editions window shows you edition files which are no longer present since your last scan. You can double-click on items in the new and changed editions windows to receive more information on the edition file. (You can't get information on a deleted edition file since it no longer exists.) The information you'll get is the pathname of the edition file, its modification date and time, and the name of the program that created the edition.

Automated Scanning

If all you want to do is scan for edition changes every once in a while, opening the Special Edition new desk accessory and clicking on the Scan button is probably all you need. However, if changes to edition files occur regularly, you may want Special Edition to scan for

changes automatically. You can set Special Edition to scan every fifteen minutes or every time a new application starts. If no changes are found, Special Edition won't interrupt to tell you. But, if changes *are* found, the appropriate result windows will be opened for you.

Finder Specialties

Special Edition also adds some additional functionality to the Finder. If you double-click on an edition file in the Finder, Special Edition will intercept it and display an edition file information window. The information you'll get in this window is the pathname of the edition file, its modification date and time, and the name of the program which created it. This is a very easy way to determine which application published an edition right from the Finder.

As an Example

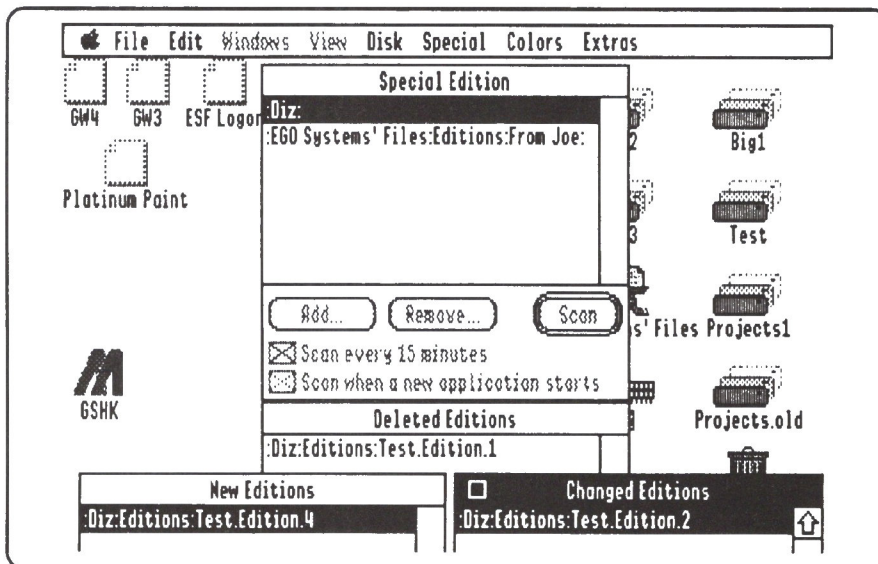
To help you better understand Special Edition and how to best use it, I'll take you through an example. First off, to best use Special Edition, you'll need a common folder where you put edition files. Just add that folder to the Special Edition scan list using the Add button. Remember that *everything* inside that folder is looked at, even the contents of other folders. We have a folder called Editions on our file server which I have added to my scan list. Inside the Editions folder are two other folders: One named From Joe where I put my published editions and one named From Diz where Diz puts his published editions. (Diz only added the From Joe folder to his scan list since he's not interested in changes he makes to his own editions, but only to changes I've made to

mine.) Inside my From Joe folder I have some more folders named From II Notes and From What To Do and I put published editions from each of those programs in their respective folders. Diz has Special Edition set to scan every fifteen minutes, so every time I make a change to a document which updates an edition, Diz will know about the change within fifteen minutes. He can then go see what changes I actually made.

Programmer Information

Special Edition is really a very simple program. If you're familiar with new desk accessories at all you should be able to breeze through the Special Edition source code with no problems. The only difficult concept to grasp is how Special Edition keeps track of all the different editions. The FTN.5A.80FE.GSP file type note, which is on your GS+ Disk, describes this in detail. Special Edition installs a request handler to listen for the start of a new application and the open failed message from the Finder. You can send the seScan (code number \$8001) request to the EGO Systems~Special Edition~ request handler to tell Special Edition to start scanning. The high word of dataIn is reserved and you should set it to zero. The low word of dataIn is a flag which tells Special Edition whether or not to display the "No changes were found" alert if no changes are found.

Special Edition works great in a workgroup situation, but it can also be very informative for a single-user system as well. If you encounter any problems with Special Edition, please fill out a problem form, which is on your GS+ Disk, and return it to us. GS+



II Notes v2.0

By Josef W. Wankerl

II Notes is a new desk accessory (NDA) that makes a notepad available at all times from your Apple menu. The notepad desk accessory concept isn't new—it's been around forever (well, at least since the very first Macintosh). When we published v1.0 of II Notes back in GS+V4.N1, I didn't think the program was anything very special, but as time went by, I found myself using the convenient notepad for jotting down new ideas and keeping lists and for just general, well, notetaking. One day, I looked through my notepad and discovered that I had a lot of useful information in there. . . II Notes was indispensable! However, there were a few features that II Notes didn't have that I thought it should. Diz thought the desk accessory was fine and didn't need to be changed, but I figured some new features would take the already indispensable program and elevate it to even new heights. I wrote down all my new ideas for what the new version should do (yes, I used II Notes to do that!) and then started a fresh, new version. I could have just taken the old source code and modified it, however some of the features I wanted to add would rearrange the old code so much that I figured a completely fresh start would end up saving more development time in the long run. I keep talking about these new features, but I still haven't told you what they are. So, hold on to your socks, here they are:

- II Notes v2.0 can have up to 65,535 pages of notes instead of the fixed 20 pages in version 1.0.
- Pages can be added and deleted as necessary, so you can have a one page notepad or a one hundred and one page notepad!
- The notepad window is no longer a fixed size. You can use the zoom and grow boxes to change the dimensions of the notepad to your favorite size and the new size will be remembered (i.e. you can close II Notes and then open it again and II Notes will retain its last position and size).
- Individual note pages can be published and subscribed to. (See the "Publish & Subscribe" sidebar for a description of how these features work.)
- A single note page can be printed, or an entire range of pages can be printed.
- You can find text in a single note page or across your entire set of note pages.

- You can change the font, size, style, and color of the text on note pages easily.

- And, the two features I wanted most in II Notes: Pages can be named and you can jump to pages by name or number.

In order to accommodate all these new features, the look of II Notes has changed rather drastically. First off, you'll notice that II Notes now has a menu bar. Then you'll probably notice that the groovy dog-eared page graphic has disappeared. The reason it disappeared was because I couldn't find an easy way to have the graphic at the bottom of the page and also have the grow box and scroll bar. Speaking of the grow box and scroll bar, those are new too, along with the zoom box. Now, don't think that I took the easy way out here—I really wanted to keep the dog-ear, but it would have required a heck of a lot more work than it was worth.

Basic Features

II Notes requires System 6.0.1 or later, and if you try to run it under an earlier version of the system, it will simply beep at you and refuse to run. However, after you have installed II Notes correctly on your System 6.0.1 boot disk, and rebooted your computer, all you have to do is select "II Notes" from the Apple menu and start typing. When you open II Notes for the first time, you will be on page number one. (If you're a previous user of II Notes v1.0, the first time you open II Notes, all twenty pages of your old Notes.File will be converted into the new v2.0 format and you'll be back on the last page you were viewing with all your pages intact.)

Once you've opened II Notes, you'll be staring at a blank "page." (The number of the page you're viewing appears right justified in the II Notes menu bar.) All you have to do now is type in some notes. (The II Notes window contains a TextEdit control, so you can use any of the text editing keystrokes that you may be familiar with from other programs like EGOed lite. For a complete list of all of the cursor and editing keystrokes that can be used in TextEdit controls, be sure to look at Table 1 in the EGOedLite.Docs file on your GS+ Disk.)

The Menu Bar

So now that you have an idea of how to use II Notes, you'll probably want a reference section for all of the neat menu items. The II Notes menu bar has a rich

selection of menu items, so let's go over the items in each menu, one at a time.

File

The first item in the File menu is the New Note menu item. This could probably be more appropriately named "New Page" because when you select this menu item, a new page is added to the notepad. The page is added immediately *after* the page you are currently viewing. (If you're viewing page one and you select the New Note menu item, your new page will be inserted after page one and before page two. The pages are then renumbered so your new page will be page two and the old page two becomes page three, and so forth.)

The second item in the File menu is the Delete Note menu item. As before, this could probably be more appropriately named "Delete Page". When you select this menu item, the page you're currently viewing is removed from the notepad. There must always be one page in the notepad, so if there is only one page in the notepad and you delete it, any text on that page will be thrown out, and a new completely blank page one will be put back in its place. It's a magic notepad, eh? (If you've subscribed to a note page, the way to unsubscribe is to delete the page. To subscribe to a page, see the discussion of the Edit menu.)

The third item in the File menu is the Close menu item. When you select this item, the II Notes desk accessory is closed. All changes you may have made are always automatically saved (thus there are no "Save" menu items). The next time you open II Notes, you'll be put back on the last page you were viewing.

The fourth item in the File menu is the Page Setup menu item. When you select this item, a dialog box is then presented that allows you to specify such things as print size, paper size, and paper orientation. II Notes will try to automatically select condensed printing for you. It is strongly recommended that you use condensed printing, otherwise your text will look stretched vertically when printed.

The fifth item in the File menu is the Print Pages menu item. Selecting this item allows you to print a range of pages from your notepad.

The sixth item in the File menu is the Print Note menu item. When you select

this item, II Notes will print only the note page you are currently viewing. (This is different from the Print Pages menu item in that only one page of the notepad is printed with the Print Note item. However, your one notepad page could span several printed pages, so you can still choose a range of pages to be printed. The range corresponds only to the printed pages of the current note.)

The final item in the File menu is the About II Notes menu item. When you select this item, the current version and copyright information for II Notes will be displayed.

Edit

The first four menu items in the Edit menu (Cut, Copy, Paste, and Clear) are standard editing menu items that you are probably familiar with and should need no explanation. (If you aren't familiar with these menu items, check your IIGS owners manual for an in-depth discussion of them.) You can choose the Cut, Copy, Paste, and Clear menu items from either the II Notes menu bar or from the menu bar of the current desktop application when II Notes is the frontmost window.

The fifth item in the Edit menu is the Select All menu item. Selecting this item is an easy way to select all the text on the current note page.

The sixth item in the Edit menu is the Choose Font menu item. Selecting this item presents a dialog allowing you to choose a font, size, and style for the selected text on a note page.

The seventh item in the Edit menu is the Choose Color menu item. Selecting this item presents a dialog allowing you to choose the foreground and background color for the selected text on a note page.

The eighth item in the Edit menu is the Create Publisher menu item. Selecting this item allows you to publish the current note page. A Standard File dialog will be presented to allow you to name the edition file to publish the note page in. Once you've published a page, the Create Publisher menu item changes to "Remove Publisher". Choosing the Remove Publisher menu item tells II Notes that the current page should no longer be published. (The edition file will also be deleted.) II Notes publishes only text and style information in its edition files, so any program that can subscribe to an edition with pure text in it can subscribe to II Notes edition files. Conversely, II Notes can subscribe to edition files created any program that publishes an edition with text information

in it (which is every program because edition files are *required* to have text in them). So you could, for example, publish a cell from the Quick Click Calc spreadsheet and then have II Notes subscribe to that edition.

The final item in the Edit menu is the Subscribe To menu item. Selecting this item allows you to subscribe to an edition file. A Standard File dialog will be presented to allow you to choose an edition file to subscribe to. Once you've chosen an edition file to subscribe to, a new note page will be added after the page you're currently viewing and that page will contain any styled text from the subscribed edition. To cancel a subscription, simply delete the subscribed page from the notepad using the Delete Note menu item from the File menu.

Search

The first item in the Search menu is the Name Note menu item. Selecting this item allows you to give the current note page a name. A dialog will be presented allowing you to type in a name for the note page. To remove a note page name, simply delete all the name text from the dialog. The name of the current note page is shown in the II Notes menu bar. An unnamed note will have a menu bar title of "II Notes". A named note page will have a menu bar title of "II Notes—Page Name".

The second item in the Search menu is the Next Note menu item. Selecting this item moves you to the next note page. Moving past the last page in the notepad takes you to the first page.

The third item in the Search menu is the Previous Note menu item. Selecting this item moves you to the previous note

page. Moving past the first page in the notepad takes you to the last page.

The fourth item in the Search menu is the Go To Note menu item. Selecting this item allows you to immediately jump to a specific note page. A dialog box is presented allowing you to type in either the page number of the page you want, or you can select a page name from the page name pop-up menu. You can use the up and down arrow keys to change the page name pop-up menu.

The sixth item in the Search menu is the Find menu item. Selecting this item allows you to search for text in the current note page or across all note pages. A dialog box is displayed allowing you to type in the text you want to search for. String comparisons are case insensitive.

The final item in the Search menu is the Find Again menu item. Selecting this item allows you to search for the last text you typed in the Find dialog box.

End Notes

II Notes is a great way to keep essential bits of information on hand. Don't forget about the new Find mechanism, because it is among the most useful of all the new features. You can make a long list of items, spanning pages even, and when you need to look something up, just search for it. II Notes has been tested extensively, and I don't think you'll have any problems with it. However, there's always a remote chance that something slipped through testing, so if you encounter any problems, please fill out a problem form and return it to us. And I'm sorry, but I couldn't resist this line: II Notes or not II Notes? That is the question. GS+

What Is "Publish & Subscribe"?

"Publish & Subscribe" is a fancy term used to describe the ability to share data between two programs, and even within the same program. There are three things to keep straight when talking about publish and subscribe: The publisher, the subscriber, and the edition file. A publisher is the program that has the original copy of the data to be shared. A subscriber is the program that wants to look at some data that has been published. An edition file is a file which is the common element between the publisher and the subscriber. When the data that the publisher knows about changes, the changes are saved into the edition file. When the subscriber needs to find the data, it looks into the edition file to get it.

What this means to you is that when you have some data that you want to share, you publish it. This creates an edition file that contains a copy of that data. Any time you change your original "published" data, the edition file is also updated. When you want to use your published data from somewhere else, you simply subscribe to it through the edition file. The subscriber looks inside the edition file to get its data, so any time the publisher updates the edition file, the subscriber gets a new copy.

Rumors, Wishes & Blatant Lies

By Prof. G. S. Gumby

Code In Session

If you are one of the many people that have purchased a SoundMeister sound card (see review in *GS+ V5.N1*), you've probably hoped and prayed for an update to the Digital Session software that comes with it. Well, I don't know if there is going to be an update any time soon, but I do know that someone has bought the source code for Digital Session from ECON Technology

UG TV BS

You might not know this, but about a year ago, Apple spun off its User Group Connection into its own separate company. Since then, they've been trying to make the User Group Connection into a much more responsive and sensitive organization that can better respond to the needs of Macin . . . er, I mean, *Apple* user groups. One of the things they've been doing for user groups is producing a yearly "UG TV" satellite broadcast. Unfortunately, over the last few years, Apple II content has been strangely missing from these broadcasts. But, that doesn't stop them from trying to get in touch with the feelings of Apple II user group members. Here then is a 100% true (I swear!) approximation of the story of a telephone conversation that I heard second hand from the president of an Apple II only user group, who was recently contacted by a User Group Connection representative

"Hi there! I'm conducting a survey for the User Group Connection to see how your user group liked the recent UG TV broadcast."

"Well, my group is an Apple II only group, so we didn't watch the broadcast."

"Really, why not?"

"Because, we are an Apple II only group and there hasn't been any Apple II stuff in the broadcasts for a few years now. But, did I miss something? Was there some this year?"

"No. But there was lots of stuff for your Macintosh members!"

"We don't have any!"

"Oh. Well, I still need to ask you some questions How many of your members watched the broadcast?"

"None."

"Why not?"

"Because we don't have any Macintosh users in our group! I told you that already!"

"OK, let's move on. How would you rate the broadcast on a scale of"

"Mmmmyaaaaahhhh!"

<Click>

Who You Gonna Call?

Rumor has it that an Apple IIGS vendor is thinking of starting up a data recovery service specifically for IIGS owners. If you've never heard of a "data recovery service" before, what they do is, well, recover data! When your hard drive crashes and your favorite disk fixing program can't or won't (as would be the case with HFS disks) do the job, a data recovery service can be a real life (and data) saver! Unfortunately, the company behind this idea isn't sure if there would be enough demand from the IIGS market for such a service

Think Good Thoughts

Just in case you were wondering what in the world ever became of the Golden Orchard CD-ROM project, here's the latest information. It seems that the material for the disk has been ready for several months now, and DigiSoft Innovations (the company producing the disk) even had a premaster copy of the disk made. Unfortunately, that premaster was defective, so they are going to have to have another one made. This has added a couple of weeks to the project. But, if things go according to schedule, the Golden Orchard CD-ROM should be completed and ready to ship near the start of April. For more up to the minute information, you can send e-mail to DigiSoft Innovations at: "jagaroth@leland.stanford.edu" (without the quotes of course).

Whoops!

This isn't a rumor, but we don't have a "Recalls" department, so Hewlett Packard is recalling about 10,000 of its OfficeJet printers due to a problem that can cause serious electrical shock. If you own an OfficeJet and you want to know if you are affected by this recall, contact Hewlett-Packard via the technical support number in your OfficeJet manual.

Imagine That!

As many of you know, back in November of 1994, America Online, Inc. ended its support of the Apple II by terminating all Apple II accounts. What you might not know is that America Online *still* has an "active" Apple II support area, complete with Apple II software and message boards! (I put "active" in quotes because the area is actually pretty dead.)

So, if you have a Mac or a PC and you miss your old America Online buddies, you might be able to run into them there. Just use the keyword "AppleII" once you

get on America Online and keep your hanky close by

Imagine This!

The World Wide Web is a big deal these days. The main reason is that just about anybody with a modem can get in on the act and create their own "home page" on the web. (A home page is sort of a virtual kiosk that you can set up to tell the world about yourself.) As proof, consider that our own Josef W. Wanker! has set up his own home page (Want to know his favorite color? The answer is there!), as well as a home page for *GS+ Magazine!* To check it out, use your own web cruising software to go to "http://www.chattanooga.net/~jwanker!/" (Oh, yeah, don't type the quotes!)

What's that? You say you don't have any "web cruising" software? Is that what's bringing you down bub? Well, turn that frown 180° counter-clockwise because rumor has it that a couple of companies and/or individuals are trying to fix that problem right now

So, What's the Deal?

Many of us are wondering, "What's the deal with Wolfenstein-3D for the IIGS?" Well, would you believe that it's release has been delayed so that they can do more testing and add more levels to the game? You don't? Well, too bad pal, because that's the truth!

Let's Get Tiny

Brutal Deluxe has recently announced that the Tinies Construction Kit is now available. This is a level editor for use with their game, The Tinies (see review in *GS+ V5.N6*), that also comes with a new version of the game. This new version allows you to save a game in progress and also won't clobber your AppleTalk connection! The Tinies Construction Kit is freeware and should be available on your favorite online service now. (So why is this here in "Rumors" and not in "What's New?" Well, because they didn't send us a press release, and I haven't been able to actually verify the existence of the Tinies Construction Kit)

Once More, With Feeling

WarpField Engineering has announced that they have changed their phone number. The old number was (555) 224-4543 and their new number is (555) 224-4342. (That spells "A-BIG-FIB" just in case anyone out there is actually paying attention.)

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!!!** Do *not* make your backup on your hard disk! Instead, copy the GS+ Disk to another 3.5-inch disk (this is *very* important). Next, put the original in a safe place. If you are having a problem making a backup copy, give us a call at (615) 332-2087. If your disk is damaged, let us know, and we'll get a new one to you as soon as possible.

Before you attempt to use your backup GS+ Disk, please take a few minutes to read the **a.Read.Me** file on it for any last minute corrections or information. If you do not already have our EGOed lite text editor installed in your system, you can use the Teach application supplied with System Software v6.0 to read this file.

Installing the Software

To install the software on this issue's GS+ Disk, start up your computer using System Software v6.0.1 or later. (Note that all of the programs on this issue's disk [except EGOed lite and Finder Binder] *require* System 6.0.1!) 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 backup GS+ Disk. (From the Finder, just double-click on the Installer icon.) *It is extremely important that you use the Installer that is on your backup 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 list on the left-hand side of the window, and the disk you want to install it on from the list on the right-hand side of the window. Then click on the Install button. For more information on using the Installer, refer to your IIGS owner's manual.

Installing EGOed lite

The following is a detailed example of how to install EGOed lite. The other programs are installed in a similar manner.

- Start up your IIGS with System Software v6.0 or later—the version of EGOed lite 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.)

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!

- 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 lite." (If EGOed lite 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 lite 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 lite on your startup disk. If you only have one 3.5-inch disk drive, you may have to switch disks several times. Just 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 lite (note that you have to be in a

desktop program like the Finder to have access to the Apple menu).

- When it finishes loading, notice that EGOed lite has its own menu bar. Select Open from the *EGOed lite* File menu and then put your GS+ Disk in a drive. You should see a list of the files and folders on the GS+ Disk.
- Open the Documentation folder on your backup GS+ Disk and then open the file **EGOed.lite.Docs**. This file contains complete documentation on how to use EGOed lite. *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 panels, and other system files on your GS+ Disk.

Towards that end, we have prepared the following list of "expendable" files that you can "safely" remove from your System Software v6.0.1 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 listed 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 v6.0.1

If you use the System 6.0.1 :Install disk to create a minimal, 800K, System 6.0.1 boot disk, that disk will have 26K free 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 all of 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 ***:System:P8** (18K).

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

***:System:CDevs:Time** (10K)

After that, the 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 (42K)

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 8K file:

*:System:Drivers:AppleDisk5.25

If you do *not* have a printer, you may delete the following file:

*:System:CDevs:Printer (5K)

Finally, if you have deleted all control panels, and you won't be installing any control panels from the GS+ Disk, you can also delete the 18K file:

*:System:Desk.Accs:ControlPanel

Removing some or all of these files will give you ample room (up to 138K on a ROM 01 IIGS and up to 133K on a ROM 03 IIGS) on your startup disk to install EGOed lite or any of the other system utilities from your backup GS+ Disk.

What is EGOed lite?

EGOed lite is a new desk accessory (NDA) text editor that we provide in each issue of GS+ Magazine.

When you install EGOed lite 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 lite, you must install it on a IIGS System Software v6.0 (or later) startup disk with at least 40K of free space.

Note: You will *not* be able to print from EGOed lite or any other desktop program when using an 800K, System 6.0 boot disk. (There isn't enough room for all of the required drivers and control panels.)

If you want to save even *more* space, you might want to consider using Autopilot (from GS+ V4.N1) as a replacement program launcher. With Autopilot installed on the minimal System 6.0.1 boot disk, initial free space goes up from 26K to 163K! You can then use Autopilot to autolaunch the Finder from a second 3.5-inch disk drive and still have plenty of room on your boot disk for lots of system extensions. For more information on Autopilot, refer to the "Autopilot v2.0" article in GS+ V4.N1 or give us a call.

Self-Extracting Archive

We use GS-ShrinkIt v1.1 to compress the *source code* and related files on the GS+ Disk into a *self-extracting archive*. To extract the files from the archive, simply double-click on the GSP.V6.N4.SEA program on your backup GS+ Disk. *You do not need to have a copy of GS-ShrinkIt in order to use the programs or other materials on this GS+ Disk!*

IMPORTANT!

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

However, you will gain better control over the files you wish to extract if you have *GS-ShrinkIt v1.1*. If you do not have *GS-ShrinkIt v1.1* and you would like a copy, check with your local user group or give us a call here at *GS+ Magazine* and we will try and help you locate a copy.

What's on the Disk

There are eight items in the root directory of this disk:

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 try to read this file before using the *GS+ Disk*.

Documentation

This folder contains the *EGOed* lite documentation file, the complete *GS+ Glossary* and the complete *GS+ FAQ File*. The *EGOed* lite documentation is a Teach file which can be read using Teach, *EGOed* lite, or any other TextEdit based editor. The *GS+ Glossary* and the *GS+ FAQ File* are both plain text files.

GSP.V6.N4.SEA

This is a self-extracting archive (SEA) containing the source code and related files for all the programs contained on this *GS+ Disk*. The archive also contains the

Miscellaneous Library. Technical information, such as the Miscellaneous Library documentation is supplied in the archive as well. To extract the files from the archive, simply double-click on this file from the Finder. You will then be presented with a dialog asking you where you want the files extracted to. Note that if you try to extract *all* of the files from this archive at one time, they will *not* fit on an 800K disk!

Icons

This folder contains Finder icons used by the various programs on the *GS+ Disk*. This folder also contains the *FType.GSPlus* file type descriptors which contain all the file type assignments for *GS+ Magazine*.

Installer

This is the Apple IIGS Installer. The installer requires System Software v6.0 or later. Run it to install the other programs on this issue's disk. For more information on using the Installer, be sure to read the example on the previous pages, and refer to your owner's manual.

Programs

This folder contains the *EGOed* lite, Finder Binder, II Notes, and Special Edition programs. Use the Installer provided on your backup *GS+ Disk* to automate the installation of these files. *EGOed* lite and Finder Binder require

System 6 to operate. All the other programs on this disk require System 6.0.1 to operate.

Scripts

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

Talk.To.GSPlus

This folder contains our feedback form, a troubleshooting guide, a problem form, and our writer's guide.

The feedback form is a plain ASCII text file. Fill it out and send it in to let us know what you thought of this issue.

The troubleshooting guide contains tips on how to resolve some of the more common problems you may experience while trying to use the programs on your *GS+ Disk*. If you are having a problem, *please* read this file before you go to all the trouble of filling out a problem form! But, if the troubleshooting tips don't help, *please* fill out the problem form and send it to us! These are Teach files, you may use *EGOed* lite or the Teach application to view them.

The writer's guide is a Teach file that explains what you need to know to write for *GS+ Magazine*—you may view it with *EGOed* lite or the Teach application.

GS+

How to Get System 6.0.1

Everyone should have a copy of System 6.0.1. 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 6.0.1 takes up to every magazine-and-disk subscriber. However, we still want to make it easy for you to get System 6.0.1. So, if you are a subscriber to *GS+ Magazine* with the companion *GS+ Disk* (sorry, but we can *not* distribute System 6.0.1 to our magazine-only subscribers), send us the following items and we will send you System 6.0.1:

1) Five (5) *blank* and *formatted*, 3.5-inch diskettes to our P. O. Box address (which is shown on the back of your magazine). We are asking for "blank and formatted" disks because formatting takes time that we don't have, and it's 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. (Foreign subscribers without access to United States postage may include four International Postal Coupons instead. See your local post office to obtain these.) *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 It?

If you are a magazine-only subscriber, here are some other ways to get System 6.0.1.

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. Take your own disks and they should only charge you a small copying fee. Some user groups may have it already copied for you and available for

a nominal charge. (Note that some user groups make these services available only to their members. Of course, you do plan on joining, don't you?) If you need to know where your local user group is, call the Apple User Group Connection at (800) 538-9696 extension 500.

The Byte Works. You won't have to bug them, they have it in stock, and ready to ship. The item number is "APDA-47" and the price is \$24.95. To order, give the Byte Works a call at (505) 898-8183.

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 at 2400bps. **GS+**

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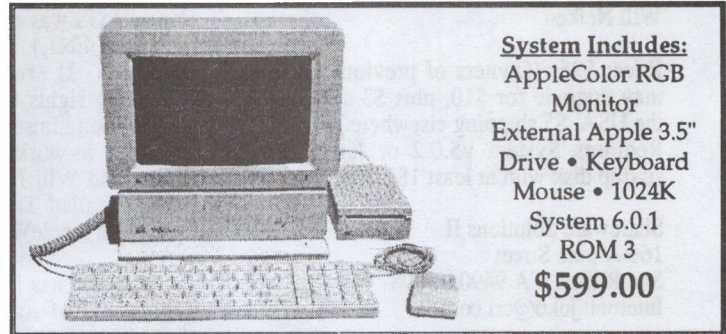
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SEQUENTIAL SYSTEMS

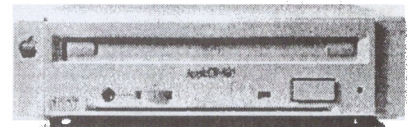
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Reviews

Contacts GS v1.0.2

Programmed by "Burger" Bill Heineman
TimeOut ContactsMover programmed by
Will Nelken

Price: \$25 (Owners of previous versions may upgrade for \$10, plus \$3 shipping to the USA, \$5 shipping elsewhere.) Requires System v5.0.2 or later, and a startup disk with at least 18K free.

Shareware Solutions II
166 Alpine Street
San Rafael, CA 94901-1008
Internet: joko@crl.com

Reviewed by Bill Moore

If there's anything that's a royal pain for me to keep up with, it's phone numbers, names, and addresses. It's not because I don't have a program for my computer to do it, or something portable to store them on while I'm away from my computer—quite the contrary! On the IIGS, I have several programs that can store such data: HyperCard IIGS, HyperStudio, and AppleWorks (Classic and GS). There are also other products I could buy, like Addressed for Success. On the portable side, I have a Sharp electronic organizer (which is in the process of being replaced with a Newton MessagePad 100), and a regular Day Runner. No, something to store all this stuff is not the problem. What I need is something *easy to use* so I can access this data whenever I need it. The Newton should solve this on the portable side, and a program I just got should do the same for my IIGS. That program is Contacts GS.

What is it?

Contacts GS is a new desk accessory

(NDA) that was written by "Burger" Bill Heineman and was originally sold by Simplexity Software. (The original Contacts GS was reviewed by Mark Ranes in *GS+ V4.N1*.) Joe Kohn of Shareware Solutions II recently acquired the publishing rights to this program, and he took it upon himself to improve it. So, he set about re-working the documentation, and he had Will Nelken write a TimeOut module (called TimeOut ContactsMover) for Classic AppleWorks owners.

Contacts GS acts like a Rolodex—you use it to store all of your names, addresses, and phone numbers. Since it is a new desk accessory, it makes this information instantly available to you from any desktop program. Toss in some powerful search routines and the ability to use your external modem or IIGS speaker as a telephone dialer, and you have a pretty well-rounded new desk accessory.

Contacts GS puts its data in a plain text file, which means that just about any IIGS database program can import this data or export its own data in a format that Contacts GS can use. If you use Classic AppleWorks versions 3.x and 4.x (and, by the time you read this, version 5.0), there's a program included in the Contacts GS package to make your life a touch easier. TimeOut ContactsMover automates the process of moving data between Classic AppleWorks and Contacts GS.

Mr. Kohn didn't improve Contacts GS by just adding TimeOut ContactsMover, either. He completely rewrote the manual (and, as he proudly notes, the entire manual was written and printed entirely on the IIGS). He's also done a thorough job of explaining how to install Contacts GS

(especially for IIGS users without a hard drive), and there are complete explanations of how to use both the new desk accessory and TimeOut ContactsMover.

Now that we've had a general look at what you get when you buy Contacts GS, let's have a closer look at the new desk accessory part of the package.

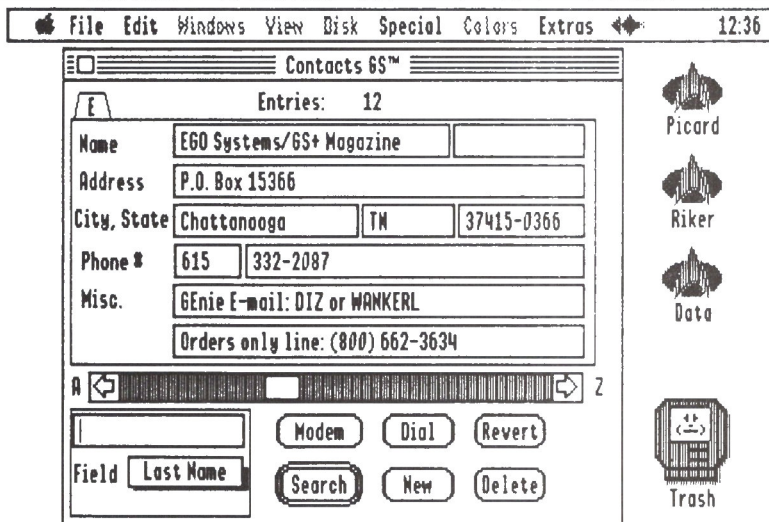
The Contacts GS new desk accessory allows you instantaneous access to all of your important address and phone data. A Rolodex style screen allows you to view current data, search for data, or enter new data (see screen shot). The search routines are nice, allowing you to search for data in several fields, including: Last and first name, city, area code, and the two miscellaneous fields.

Using Contacts GS is simplicity itself. To add new information, just open Contacts GS from the Apple menu, click on the New button, and start typing in the data for that "card" of information. When you need to refer back to that information, you can simply scroll to the card you're looking for, or use the search feature to find the data that's eluding you.

At only 17K, Contacts GS is slim and trim enough to fit onto a floppy-based system disk. But since the data file that Contacts GS creates must also be in the `*:System:Desk.Accts` folder, what little room you do have on a floppy will quickly get eaten up if you put in very much data. However, since everyone either has or plans on getting a hard drive, that won't be a problem, will it?

I don't have Simplexity's original version of Contacts GS, but from what I've gleaned from reading Mark Rane's review of the original, there's not a whole lot of difference between it and the new version of the desk accessory. The main new feature in this version of Contacts GS seems to be the addition of the TimeOut ContactsMover utility for AppleWorks owners.

Speaking of TimeOut ContactsMover, it's an add-on module for Classic AppleWorks (enhanced with TimeOut) which makes it a snap to move data between Contacts GS format and AppleWorks format. It comes in no fewer than four flavors: One for users of AppleWorks 3.0 and UltraMacros 3.x, one for AppleWorks 3.0 and UltraMacros 4.x, yet another for those with AppleWorks 4.x, and by the time you read this, a brand new one for owners of the



recently released AppleWorks 5.0. I can hear all you AppleWorks users now! "Big deal," you say. "I can do everything that ContactsMover does now by printing my current AppleWorks database address file to disk as a text file." This may be true, but it would be a pain to merge that data with your Contacts GS data.

With ContactsMover, it's really easy to use your AppleWorks data to replace or add to your **Contacts.Data** file. Step-by-step instructions in the manual make it so simple even I was able to figure it out. Using ContactsMover, you can merge, create and replace data in either the **Contacts.Data** file that the Contacts GS new desk accessory uses or in an AppleWorks database file of your choosing. And, unless you're using AppleWorks 3.0 with UltraMacros 3.x (see below), you can "set and forget" all the boring stuff like what the pathnames to the **System** folder and your AppleWorks database file are, and where you want the converted data saved.

Problems With Contacts GS

There's something I don't like about Contacts GS, but it's the phone company's fault. You'll only run into it if you use the Modem or Dial commands in the new desk accessory (and are as picky as I am about how you want your data stored). A little over a year ago, we had to start including the area code with *all* in-state long distance calls that we make. This was done so they could add more area codes. Nevertheless, it was a pain. Local calls however, still must be dialed *without* the area code. The problem with Contacts GS comes in if you have the area code typed in and you want to dial a local number. I like to have the area code listed for all my entries, but I can't do that and still dial them with the modem or speaker (unless I feel like hearing a recorded message telling me how stupid I am). But, since I'll rarely use the Modem or speaker dial options, I won't really run into this problem often. However, some of you might, so I thought it merited a warning. (Our own peerless publisher suggested the best idea I've heard to fix this problem: Allow the user to select the digits they want dialed by highlighting them. If nothing is highlighted, the entire number is dialed. This might also make things easier for international owners of Contacts GS, since almost all exchanges outside North America do not use the "(xxx) xxx-xxxx" format for telephone numbers.)

The only other thing you should really be aware of is the fact that Contacts GS works in 320 mode, but only about two-thirds of the new desk accessory fits on

the screen. So, you should always use this program in 640 mode unless absolutely necessary.

Other Problems - ContactsMover

If you transfer your data file from Contacts GS into AppleWorks, add some entries to it, then resave in Contacts GS format, you *must* choose the replace option. Otherwise, you wind up with two copies of the data that was in the old file.

Sometimes when taking data from your old AppleWorks database files to add to the Contacts GS file, you'll have to do a *lot* of reformatting of your old files in order to get them in a state that Contacts GS can easily deal with. For example, most of my AppleWorks files of phone/address data have the last and first names in one category, instead of splitting it into separate first and last name fields the way Contacts GS does it. So, I have to split this field up *before* I use ContactsMover to export the data.

Buyer Beware

The manual is very good about warning you about potential problems. (Note that most of these problems are the result of flaky AppleWorks patches. Of course, most AppleWorks patches work fine, but some of them can make AppleWorks as jumpy as an ex-football star in a double-murder trial!) The main thing to remember is that although the ContactsMover program has been tested with all current TimeOut modules, this does not mean that it will be compatible with everything under the sun ever created for AppleWorks. One thing the manual specifically warns you about is a problem that bit me the first time I ran ContactsMover. That problem is the fact that some "patcher" programs that change the way AppleWorks looks and operates can make ContactsMover choke. Since I use a copy of AppleWorks 3.0 that was modified by John Link's SuperPatch to not require a press of the return key after selecting a menu item, ContactsMover blew up in a most impressive manner the first time I tried it. A clean install of AppleWorks and ContactsMover set things right.

There is another gripe I have, but all it really means is that it's time to upgrade to a later version of AppleWorks or UltraMacros. I got tired really quickly of having to tell TimeOut ContactsMover the same information about the name of my boot volume (which is where the **Contacts.Data** text file is stored in the ***:System:Desk.Accs** folder), location of the AppleWorks database file I want to use, etc. After griping and cursing about it, I went back to the manual and found

that this only occurs in the version of ContactsMover for AppleWorks 3.0 and UltraMacros 3.1. All versions of ContactsMover for later versions of AppleWorks and UltraMacros save configuration information in a text file called "contax" in the **AW.INITS** folder. Still, I don't see how it could've been *that* hard to add this same capability into the version for the AppleWorks 3.0 and UltraMacros 3.1 combo.

Using AppleWorks 3.0 with UltraMacros 3.1, I had little trouble converting data from AppleWorks to Contacts GS format. I had little success, however, in doing the reverse when I have an AppleWorks database file already created that I wanted to add data to. At least, I had little success in doing it until I was *trying* to mess it up intentionally (in order to figure out why it was not working). I don't know if it was a TimeOut problem or a ContactsMover problem, but I installed ContactsMover on a fresh copy of AppleWorks 3.0 with virgin copies of TimeOut Desktools and UltraMacros 3.1 installed. My guess is, I wasn't doing something right, and in reading the manual, I stumbled upon the solution without realizing it. (So like any software, if things aren't going as expected, read the manual. Then sit down and read it again. I didn't really become proficient with ContactsMover until I sat down and read its section in the manual backwards and forwards.)

The Last Word

With the additions of the Newton to my portable arsenal and Contacts GS on my IIGS, I'll hopefully have solved my problem of keeping up with all of this data—once I finally get it all entered into both the Newton and Contacts GS. Sigh... it would be *so* nice if I could keep the two synchronized automatically... (Is anybody listening to this suggestion? There's money to be made here!) At any rate, Contacts GS is a powerful, yet easy to use program, and the addition of TimeOut ContactsMover makes it an even better deal for users of Classic AppleWorks. If you're not currently using Classic AppleWorks, and already have Contacts GS from when Simplexity sold it, you can probably live without upgrading. If you're looking at Contacts GS as a new user, and you're always losing Post-It™ notes with addresses and phone numbers on them, enter the data into Contacts GS and forget about using the notes. If you're as perennially disorganized as I am, then run, don't walk, to the mailbox with a check to mail to Joe Kohn for Contacts GS. GS+

FAXination v1.0

Program by Steven R. McQueen

Price: \$79. \$189 with 14.4 FAX modem.

Requires System Software v5.0.4 or later, 2MB RAM, a hard disk and an external FAX modem. More RAM is *strongly* recommended. Installation requires at least 105K of disk space.

Vitesse, Inc.
P. O. Box 929
La Puente, CA 91747-0929
(818) 813-1270

Reviewed by Steven W. Disbrow

For those of you that don't know what FAXination is, it is combination of a new desk accessory and a printer driver for the IIGS that allows you to send and receive FAX transmissions from inside any IIGS desktop program.

To send a FAX, you simply create your document as you usually would, then you use the Direct Connect control panel to select the FAXination printer driver. Then, you simply print the document as if you were printing it out on your standard printer.

To receive a FAX, you either tell FAXination that you want it to be on the lookout for incoming FAXes (in which case FAXination will assume every incoming call is a FAX), or you can manually tell FAXination to receive a FAX as a one time event.

In addition to the basic functions of sending and receiving FAXes, FAXination is intended to let you:

- Maintain a list of frequently called FAX numbers.

- Defer the sending of FAXes until sufficient memory is available to send them.
- Maintain a log of incoming and outgoing FAXes.
- View FAXes on the screen before you send them or after you receive them.
- Print FAXes out on your printer.
- Automatically answer the phone and receive a FAX.
- Automatically create and attach a cover page to any outgoing FAX.

That's Great!

As you can see, FAXination has a really cool feature list. But, there is one *small* problem . . .

Sending and receiving FAXes almost never works!

What do You Mean by That?

Well, when I say that "Sending and receiving FAXes almost never works" what I mean is that I've gotten it to work exactly once using my standard system setup. (Actually, it only sent the cover page successfully. The rest of the FAX I was sending was lost. And yes, I've tried sending dozens of FAXes with it.) I have found a way to make FAXination send FAXes reliably, but it involves disabling *everything* in my system *except* FAXination! This is *not* good!

Sadly, I'm not the only person that seems to be having problems with FAXination. In fact, I know of only one other person in the world (one of our subscribers [Cleeeee—tus!]) that's gotten it to work at all. I say this after spending a lot of time cruising the Internet, looking for user comments on FAXination. FAXination is a fairly hot topic on the Internet, and all I've seen thus far are complaints. (In fact, when I mentioned that I had actually sent a FAX almost successfully, I received a

few e-mails from folks that flat-out didn't believe me!) Of course, I don't think anyone on the Internet has taken the drastic measures I did to get it to work!

It's also important to note that I'm only talking about *sending* a FAX! At this point, I don't know of *anybody* that's been able to *receive* a FAX with FAXination. I haven't even been able to get it to work after disabling everything in my system!

Bummer

Now at this point, you might be thinking, "How worthless!" I must admit that until I tried disabling everything in my system, I was in 100% agreement with you. However, now that I've found a way to get FAXination to reliably send a FAX, I'm not quite as disappointed as I was. (You should have seen the first draft of this review! I almost brought back the old Trash Can Award!)

Of course, this is a mixed blessing. On the one hand, I *can* send a FAX from my IIGS, but, until I can figure out exactly which system extension (or extensions) is (are) conflicting with FAXination, it's simply more trouble than it's worth. I've already disabled a lot of extensions, with no luck so far. The worst part is, almost everything in my system is either something that Apple created, or (Oh! No!) something that we created for GS+ Magazine!

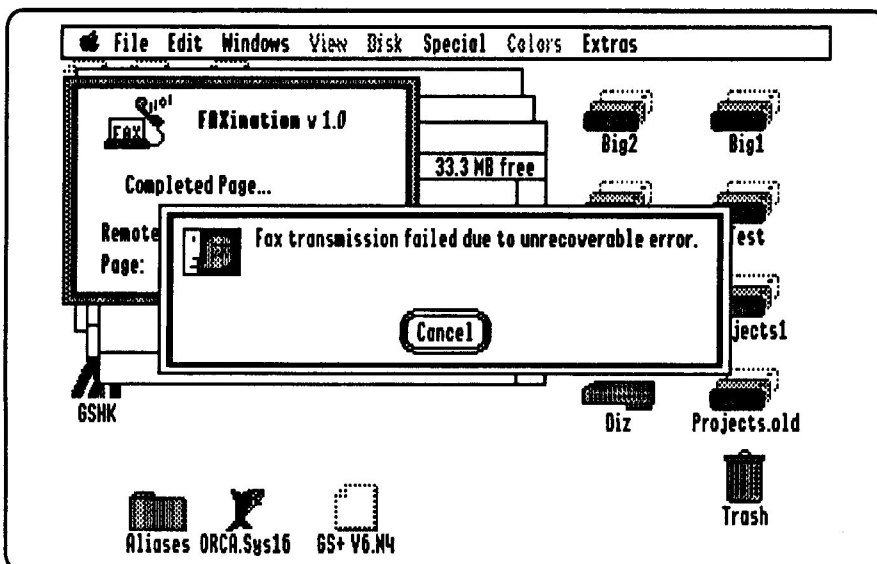
So, if you already have FAXination (or you are thinking about buying it), what should you pull off of your system? In general, anything that disables interrupts will cause FAXination to choke. In specific, that includes programs like our own Cool Cursor. Unfortunately, even disabling Cool Cursor didn't make my copy of FAXination work reliably, so there has to be something else in my system (something that I don't realize is disabling interrupts) that is causing trouble. (Note that as we go to press, I'm still going through my system trying to find the conflict, so be sure to check the a.Read.Me file on your GS+ Disk for the results of my search.)

Of course, I still don't have *any* clue as to what's wrong with FAXination's Receive option.

Other Problems?

As if this flaky behavior wasn't bad enough, there are several other problems with FAXination that I have to tell you about . . .

First of all, one of the most useful features that was advertised as being part



of FAXination simply isn't there. Specifically, there is no "Printer Picker" desk accessory to allow you to quickly switch to and from the FAXination printer driver. So, you have to go through the Direct Connect control panel whenever you want to send a FAX.

Second, when FAXination is actually engaged in the process of sending a FAX, there is no way to cancel that operation! In my opinion, this is a *very* bad thing!

Third, FAXination can't send FAXes in landscape mode. This is actually a minor gripe if you consider the overall trouble that FAXination has sending *any* FAX.

Finally, FAXination has a tendency to simply hang up my computer. At first, I thought this was another conflict with a system extension, but I've had FAXination hang up my computer even with everything else disabled!

Other Stuff . . .

Of course, all is not gloomy with the FAXination package. In fact, if you get the optional modem that Vitesse offers for FAXination, you'll find that it's a really neat little modem. Actually, it's one of the least expensive (and smallest) 14.4 FAX modems I've ever seen. Best of all, the modem *does* seem to work with all of my other communications software.

The only problems I've had with the FAXination modem are that it sometimes

emits a strange whistling sound (like when you are riding in your car and the window is slightly open), and it sometimes refuses to be reinitialized by my communications software. Fortunately, both of these problems can be solved simply by turning the modem off and back on again. (Another strange thing about the FAXination modem is that it is the very definition of a "no-name" product. There is no manufacturer listed on the box, on the modem, in the documentation, or even on the warranty registration card!)

Of course, you don't have to use the modem that Vitesse sells. FAXination is supposed to work with any standard external FAX modem. Unfortunately, no matter which modem you use (I've tried a couple of different ones) you'll have the same problems with sending and receiving a FAX. (I should also note that FAXination won't work with the old Applied Engineering DataLink FAX modem. But that's OK, it's not *supposed* to work with that modem!)

Documentation

I suppose the best part of the FAXination package is the documentation that comes with it. The FAXination manual is actually quite good and it even includes a very interesting discussion of the history of FAX technology. (Did you know that FAX technology was invented in 1843? Now you do.) The manuals that come with the FAXination modem are very

good also. (Actually, they may be some of the best modem manuals I've ever seen.)

So, Should You Buy It?

Well, if you have just about any system extensions installed on your IIGS or you want to actually *receive* a FAX, I'm afraid that my answer would have to be *no*. You should definitely wait until Vitesse comes out with a new, more stable version of FAXination, or at least until they come up with a list of system extensions that are known to conflict with FAXination. Vitesse says that an update will be available very soon—perhaps even by the time you read this. (Vitesse also plans to make updates available via a dedicated BBS. This will be a *very* cool thing.)

However, if you bought both the FAXination software and the modem (like I did), you *did* get a very nice and very inexpensive modem, and the update to the software is going to be free, so don't think of it as a total loss.

When I review a product, I always like to balance the bad points of a product with the good points. Unfortunately, with FAXination, I haven't been able to really *use* the software, so all I've been able to see are the bad points. Hopefully Vitesse will do what we all fully expect them to do and turn this into a terrific product. Until that happens however, my advice is to steer clear of FAXination. GS+

Second Sight Ships March 1!

Good news for those of you who have been waiting patiently for your Second Sight VGA interface for your Apple IIGS computer. Shipping begins March 1! They say that good things come to those who wait so we've decided to reward you for your patience. We've added optional 24-bit color capability to Second Sight! If you've already ordered your card from Sequential Systems, or if you order one before April 1, the upgrade is yours at no additional charge! We believe that when you see what Second Sight can do for your IIGS system you'll agree that it's been well worth the wait.

Thanks for your patience!

SECOND *sight*™


More Information?

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SEQUENTIAL SYSTEMS

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GNO/ME - \$89

GNO/ME stands for the "GNO Multitasking Environment." GNO/ME is a command shell that brings multitasking to your IIGS. Using GNO/ME, you can start up multiple tasks (like compiling different parts of a program) and have them execute concurrently! GNO/ME can also be used as a replacement for the ORCA command shell and is compatible with all of the ORCA utilities and languages

System requirements: System 6.0 or later, 2MB of RAM and a hard drive. (More RAM is strongly recommended for multitasking!) Price includes First Class shipping to U.S. Surface mail shipping to the rest of the world is an additional \$5. Air Mail shipping to the rest of the world is \$10.

Splat! - \$39.95

Splat! is a *source level* debugger for use with ORCA/C, ORCA/Modula-2, and ORCA/Pascal. With Splat! installed, you can step or trace through your program's source code while your program executes! You can also view and set the values of variables and you can even view complex data structures, like Event records, and watch their contents change as your program executes! If you program the IIGS, you need Splat!

System requirements: System 6.0 or later, 2MB of RAM, a hard drive and either ORCA/C, ORCA/Modula-2 or ORCA/Pascal. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$4.

Switch-It! - \$39.95

Switch-It! is a program switcher and launcher that allows you to have more than one IIGS application in memory at the same time.

You can switch between these applications instantly, just by picking the application you want to work with from the menu bar at the top of the screen! Switch-It! also comes with several new desk accessories (NDAs), that allow you to easily copy data from one application that you have in memory, and then paste it into another application.

System requirements: System 6.0 or later, 2MB of RAM and a hard drive. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$4.

Pick 'n' Pile - \$20

Pick 'n' Pile is a great game for your IIGS that would probably remind you of Tetris, if Tetris had walls, flowerpots, wildfires, bombs, and death heads! In Pick 'n' Pile, your job is to clear the screen of various colored balls, by stacking them on top of each other. As you try to accomplish this task, some helpful items appear to make your job easier (like the bombs), and other items appear to make your job more difficult (like the death heads). It's extremely addictive, and a lot of fun!

System requirements: System 5.0.4 or later, 1MB of RAM. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$3.

ZipGS Accelerator - \$189

Are you tired of waiting on your IIGS? Well then, plug in a ZipGS accelerator card and get ready to blow the doors off of your favorite programs! With a ZipGS 8/16 accelerator installed, your IIGS will run at a snappy 8MHz instead of the wimpy 2.6MHz it's running at now. The Finder will run faster, AppleWorks GS will run faster, EGOed will run faster, in fact, just about *everything* that you do with your Apple IIGS will happen faster!

And the ZipGS is simple to install! All you have to do is remove the CPU chip, plug the ZipGS into the CPU socket, plug the ZipGS circuit board into either slot 3 or 4 and then you are ready start computing at ludicrous speed!

System requirements: A ROM 01 or ROM 03 Apple IIGS and a burning desire to go faster!
Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world.
Air Mail shipping is an additional \$5.

Addressed For Success - \$35

Addressed For Success is the *only* IIGS-specific label design and printing application available! With it, you can quickly and easily create and print labels on any IIGS-compatible printer, using any font that you have. Addressed For Success comes with dozens of pre-made label templates for use with Avery brand labels, or you can easily design your own templates for use with other brands of labels. Addressed For Success also performs bulk sortations for reduced postage costs, prints postal bar codes, and allows you to include up to three different graphics on each label!

System requirements: System 6.0 or later, 2MB of RAM and a hard drive. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$3.

The Very Fine Print

All product names are trademarks of their respective owners. Orders for in stock items are shipped no later than the next business day. We accept Visa and MasterCard. Personal Checks and Money Orders (made payable to "EGO Systems") are also accepted. Overnight shipping is available at additional cost, call for details! Product support and warranties are provided by the manufacturer, however, we will replace any defective merchandise, and we will give a refund for anything that you decide you don't want, provided that it is returned to us with all materials intact. (Sorry, shipping charges are *not* refundable.) You can FAX your order to us at 1-615-332-2634, 24 hours a day.

Our hours are 9 a.m. to 5 p.m. Eastern time, Monday through Friday. To order, call:

1-800-662-3634 or 1-615-332-2087

EGO Systems, P. O. Box 15366, Chattanooga, TN 37415-0366

The GS+ FAQ File

By Steven W. Disbrow

Each day, we get asked a lot of questions related to the IIGS. Some of these questions get asked more frequently than others, so we've decided to answer them once and for all in this, "The GS+ FAQ File." If you have a question about your IIGS, take a look at the following questions and at the file GSP.FAQ that is on your GS+ Disk in the Documentation folder. (The GSP.FAQ file contains the previous installments of this department and your question may very well be answered there.) If you can't find an answer to your question, give us a call or send us a letter and we'll try to answer it as quickly as possible! (By the way, just in case you were wondering, "FAQ" stands for "Frequently Asked Questions," and it is pronounced "fack.")

Q: Can I use Windows TrueType fonts with Pointless on my IIGS?

A: Not without some work. You see, Pointless was intended to use only TrueType fonts for the Macintosh. While it is true that the information in a Windows TrueType font is basically the same as what is in a Macintosh TrueType font, the way this information is stored on

disk differs significantly between the two kinds of files. So, to use a Windows TrueType font with Pointless, you would have to first convert it from Windows to Macintosh format. Once you've done this, you can use the new Macintosh font with Pointless just as you would any other Macintosh TrueType font. At this point, there is not a IIGS utility that can do this, so you will have to use a shareware Macintosh program called TT Converter. This program is available direct from the author for \$10. For more information, contact:

Chris Reed
3409 Clearview Dr.
San Angelo, TX 76904-8108
Internet: chrisreed@aol.com

Q: What are "carriage returns" and "line feeds"?

A: Back in the early days of computing, one of the more popular input/output devices was the teletype. Basically, this was a typewriter with a fast printer attached to it. To help control this device, two special character codes were defined: The carriage return and the line

feed. Whenever a carriage return was sent to the teletype, the print head (i.e. the "carriage" that travelled from side to side on the page) was returned to the left hand side of the page. At this point, the print head would be back at the left hand side of the page, but it would still be on the same line (vertically) that it had just finished typing. This is where the "line feed" character code came in handy. When a line feed was sent to the teletype, the teletype would respond by advancing the paper up one line. So, the net effect of a carriage return and line feed would be to advance to the start of the next line on the page. (These two character codes were especially handy for printing out text files on the teletype!) As the years passed and computing made the leap from teletype to video display, carriage returns and line feeds continued to be used—after all, even on a video screen you need some way to specify a return to the left and an advance to the next line.

Unfortunately, when the Apple II came along, it's designers decided that since carriage returns and line feeds almost always appear together, it would save a lot of space in the long run to

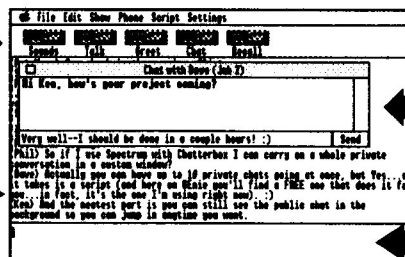
"Thank you for the great new Spectrum!"

Spectrum is a graphics-based telecommunications program for the Apple IIGs. Being IIGs-specific lets Spectrum do things never done before in Apple II telecom software...for example, Spectrum and the Balloon NDA (advertised elsewhere in this magazine) cooperate so files that received files are *automatically unpacked!*

Also, Spectrum's scripting language is easy to use, but fast and powerful enough to do almost anything. For example, scripts can take advantage of "external commands" (XCMDs) that add tremendous new capabilities to Spectrum. For example, take a look at what one "RoundTable Chat" script (available free on GENie) has done with some basic scripting commands and XCMDs in Spectrum v2.0:

The script "freezes" the first few lines of the Online Display, uses the *Draw Icon* command to display some fancy icons, then waits for lines to arrive from GENie.

The script displays regular messages in the main window.



Private messages are put in a custom "Chatterbox" window where you can scroll back through an entire private chat while composing a reply.

The Online Display's chat line (editable with the keyboard) is used to compose a public reply.

SPECIAL! Order Spectrum before 5/1/95 for only \$75!

If you're already using some other telecom program, trade-up to Spectrum for only \$60!

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Internet: *sevenhills@aol.com*

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automatically treat each carriage return character as if it were paired with a line feed! So, on the Apple II (and the Macintosh) carriage returns have the same effect as a carriage return and line feed pair did on the old teletype machines! Due to this, you almost never find line feeds in Apple II or Macintosh text or word processing files. However, if you convert a text file from another computer (like the PC) for use on the Apple II, you will almost certainly find carriage return and line feed pairs at the end of each line of the document. In this case, line feeds show up on the Apple II either as "empty box" characters or as inverted question marks at the end of the line. Worst of all, the presence of line feeds can cause some Apple II text editors to behave really strangely.

Fortunately, there are several public domain and shareware utilities, File Fixer by Morgan Davis comes to mind, that can easily strip line feeds from files. Some editors (like the editor in the Spectrum telecommunications program) also have this feature built in to help you more easily edit files with line feeds in them. Check with your user group or favorite online service to find a copy of File Fixer, and check the documentation of your text editor to see if it can strip line feeds.

Q: My IIGS tends to crash when I print. I am using the ImageWriter CL driver that came with AppleWorks GS . . .

A: You should *never, ever* use the ImageWriter CL driver! This driver was written a *long* time ago and it was intended specifically for use with the old System Software v4.0. It is *not* safe to use with anything later than System 4.0!

So, if anyone out there is still using the ImageWriter CL driver, *get rid of it and start using the ImageWriter driver that comes with the latest System Software!*

Q: What CD-ROMs can my IIGS use?

A: At this time, there are relatively few CD-ROM titles that can easily be used with the IIGS. In general, the CD-ROMs you can use with the IIGS fall into four categories:

1) Apple II software "collections." As you might guess, this type of disk contains a collection of public domain, freeware and shareware programs for use with the Apple II and IIGS. These disks are intended specifically for use with the Apple II, and should work with no hassle whatsoever. The problem is that there are only two or three of these disks currently available, and much of the material on them can be fairly old. However, they can provide you with an instant collection of Apple II software! (Two such disks were reviewed in GS+ V4.N2 and V6.N2.)

2) DiscQuest compatible disks. Sequential Systems' DiscQuest and

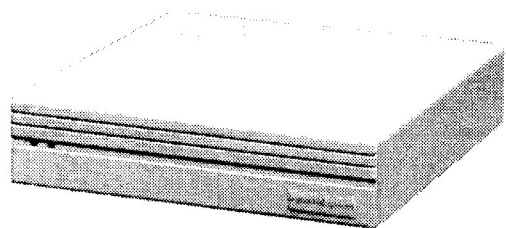
DiscQuest Encyclopedia software allows the IIGS to easily access a total of 17 different CD-ROM titles, one of which is Compton's New Century Encyclopedia. For more information on the DiscQuest software and the CD-ROM titles it supports, read the reviews we published in GS+ V5.N5 and GS+ V6.N1, or contact Sequential Systems at (303) 666-4549.

3) Macintosh TrueType font collections. If you have WestCode's Pointless installed on your IIGS, you can easily use any TrueType font that was intended for use on the Macintosh, including those stored on a CD-ROM. Simply copy the fonts you wish to use off of the CD-ROM and then install them in Pointless just as you would any other TrueType font. (You can even use the fonts directly from the CD-ROM if you want.) The only thing you should be sure of is that the CD-ROM you are buying was intended for the Macintosh and that the fonts on it are not compressed in any way. (For more information on this, refer to our article "The Scavenger," and our review of the KeyFonts Pro CD-ROM, both of which are in GS+ V4.N5.)

4) Everything else. Any other type of CD-ROM disk you try to use on your IIGS is probably going to require a great deal of work on your part. The reason is that the data on these disks was never intended to be used on the IIGS, so you will probably have to run it through some

420M SCSI2 HD. Can you guess how much?

Sequential Systems has available a limited quantity of 420 Megabyte FAST SCSI2 "AV" Hard Disk Drives. These drives are (\$319) manufactured by Quantum, they are brand new and carry a 1-Year replacement warranty. We've taken this High- (\$319) Performace HDA and mounted it in a quality, plated steel, 2-connector enclosure with a top quality, internal (\$319) switching power supply. The result is a hard disk unit that will enhance your Apple IIGS system now and can give you the performance and capacity you'll need when (\$319) you upgrade your system. This unit is such a great value that we hate to tell you how much it costs. Can you guess?



More Information?

1-800-759-4549

SEQUENTIAL SYSTEMS

(psst... add a RamFAST for just \$129^{95!})

sort of conversion program to be able to make sense of it on your IIGS. Unfortunately this is a very complicated subject, so it's impossible to give it a proper treatment here. Fortunately though, we've already published an in-depth article on this very subject! It was called "The Scavenger" and as noted above, it can be found in *GS+ V4.N5*.

Q: What is "Magic Routing?"

A: As you probably know, the IIGS System Software uses lots of different types of files to create the IIGS "computing experience." For example, there are new desk accessory files, font files and tool set files. (There are a lot more types, those were just examples. By the way, files like the ones just mentioned are usually referred to collectively as "system extensions.") As you might also know, each of these different types of files must go in a specific folder on your startup disk for them to be properly used by the IIGS System Software. For example, new desk accessories go in a folder named *Desk.Accs* and fonts go in a folder named *Fonts* (how surprising!). In addition to that, each of these folders must go inside *another* folder, called the *System* folder. If these folders aren't inside the *System* folder, and if the *System* folder isn't present on your startup disk, your IIGS won't work properly.

So, what does all that have to do with "Magic Routing?" Another good question! To answer it, let's pretend that you've just downloaded a new permanent initialization file ("PIF" for short) from an online service. Now, a PIF is another one of those system extension files that *must* go into a specific folder inside the *System* folder in order to work properly. But, which one does it go into? Actually, it should go into a folder called *System.Setup* inside the *System* folder; so, you would normally use the Finder to open your startup disk, then open the *System* folder, then copy the file into the *System.Setup* folder. In fact, you would normally have to do this for every different kind of system extension that you wanted to install in your system. This is where Magic Routing comes in!

With Magic Routing, all you have to do (using the Finder) is open your startup disk and then drag the files *on top of* the *System* folder. The *Finder* will look at each file that you are copying into the *System* folder and determine if it is a system extension and, if so, which folder it should be copied into! If there are files that need to go into special folders, the *Finder* will tell you so and you can then

tell it if you want it to copy those files into the appropriate folders or not! This is a very slick feature and a great time saver.

Q: Well, that is cool . . . but what is this Magic Routing bug that I keep hearing about?

A: Well, the problem with Magic Routing is that it only works once! Before I can explain why that is, we need to back up a bit and discuss the *System* folder a bit more. You see, *any* folder can be named "system", but only the folder that is named "system" and is on your *startup* disk is special to the *System* Software and the *Finder*. (Apple refers to this as the "blessed" folder.) In fact, you may have noticed that in the *Finder*, the *System* folder on your startup disk has a special icon (which looks like a white folder with a six-colored apple in it) that is different from every other folder icon in your system—even other folders named "system"! So, that's the *only* folder that the *Finder* performs Magic Routing for. So, if you drag a bunch of system extensions onto a folder named "system" that's on a disk other than your startup disk, the *Finder* won't do anything special.

So, the problem that exists with Magic Routing is that, when you drag the first file (or group of files) on top of the blessed *System* folder, the *Finder* will magically route it just fine. However, right after it finishes, the *Finder* will "forget" that the *System* folder you just dragged that file onto is on your startup disk! In fact, it will even *re-draw* the *System* folder using the normal folder icon! Because of this "memory lapse," the next time you try to use Magic Routing, the *Finder* will think that you are simply copying files into an "ordinary" folder, that just happens to have the name "system" and so it won't perform Magic Routing. To only way to get the *Finder* to remember that this folder is the blessed *System* folder is to close the window showing the *System* folder and then reopen it by opening your startup disk again.

Q: That stinks! Is there a way to fix this problem?

A: Yes! In fact, there are two ways around this problem!

The first is to simply drag your blessed *System* folder out of its window and onto the desktop, and then leave it there. As long as the *System* folder is on the desktop, Magic Routing will work just fine! (In fact, this is how this bug got

past Apple's testers, they all had their *System* folders on their desktops!)

The second solution is more permanent, but it is also a bit more complicated and it requires you to have access to a utility (like the *NoDOS* utility that was last published in *GS+ V4.N4*) that can change a file's type and auxiliary type. Actually, all you have to do is change the *auxiliary* type of the blessed *System* folder (i.e. the *System* folder that is on your startup disk) to the value 2. For some reason, this change keeps the *Finder* from forgetting that the blessed *System* folder is actually blessed and so Magic Routing will then work correctly 100% of the time!

Of course, you might not know an auxiliary type from a file type, so, assuming that you are using *NoDOS*, here are some step by step instructions on how to fix the problem.

First, install *NoDOS* and restart your IIGS. (Instructions for installing *NoDOS* will be in the issue of *GS+ Magazine* that *NoDOS* came in.) When you get to the *Finder*, pull down the Apple menu and pick *NoDOS*. When the *NoDOS* window opens, click on the *Info* button. This will present you with a *Standard File* dialog that you use to pick the files you want to get information on. Click on the *Disks* button and then open your startup disk. At this point, *NoDOS* will present you with a list of the files that are on your startup disk. Scroll down the list until you see the folder named "*System*". Click on this folder *once* so that it becomes highlighted, and then click on the *Accept* button. *NoDOS* will then present you with a window showing you some information about the *System* folder. The first item, the file type, should be given as "*DIR*" and it should be highlighted. Press the tab key once to move to the next item, the auxiliary type. Now, in the auxiliary type box, type "\$00000002" (without the quotes). Now click on the *OK* button. That's it! You've fixed the Magic Routing bug!

Q: Are you guys still in business?

A: Yes!

GS+

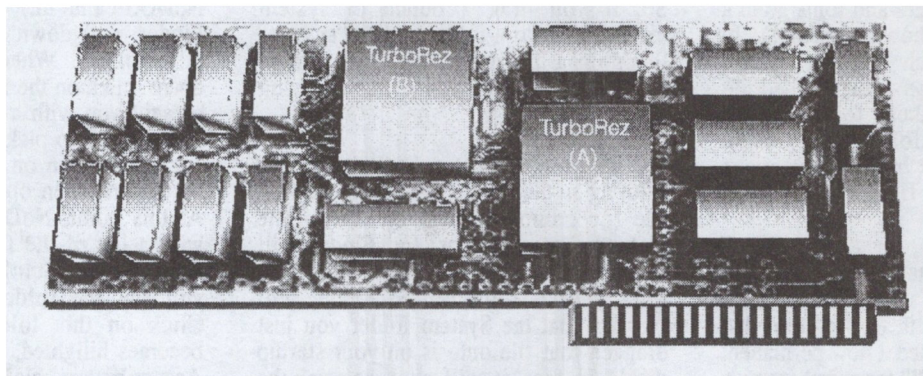
TurboRez GS

The Animation Machine

High Speed Video for the IIGS!



Graphics Accelerator



Brilliant Color AND Dynamic Full-Screen Animation on your IIGS ? Don't settle for less! Bring your system up to speed with TurboRez GS, the powerful video enhancer & graphics accelerator board from RezTek. Experience multimedia the way it was meant to be :

- 256 color displays (in 320 and 640 mode) and up to 7000+ colors in extended palette mode.
- High Speed Blitter (16 Megapixels/Sec with .5 meg of TR ram, 32 Megapixels/Sec with 1 meg of ram) The Blitter has built-in hardware scaling to allow shrinking or stretching a source bitmap as it's being drawn. The hardware also handles "transparent" source bitmap pixels automatically.
- MultiPlane Technology which allows multiple image planes to overlay each other. This feature eliminates the need to redraw overlapping objects (as in a single plane system).
- Hardware Line Drawing, coupled with the Scaling Blitter, is the key to fast texture mapping.
- Display List CoProcessor ● Full Screen OverScan ● Fill Mode in all Planes ● Interlace Mode
- TurboRez is not slot specific and is transparent to normal GS operations. Standard video port used.
- Shipped w/ paint, viewer, utility and toolbox applications.



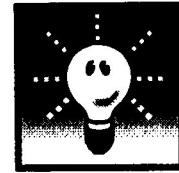
Reserve a TurboRez card now. Contact us by phone or Email and place your order. Do not send money ! You'll receive a shipping queue # by mail appx 3-4 weeks after your order. Shipping should start in about 60-90 days and will initially be handled via C.O.D. only.

\$239⁹⁵

(w/ .5 meg ram)

Does not include shipping or C.O.D. charges (or California State Sales Tax).

TurboTalk GS



AN OVERVIEW

The TurboRez GS card is a circuit board that plugs into one of the 7 peripheral slots inside the IGS. Its RGB video output (Turbo HiRes or THR) is merged with the SHR video on the GS motherboard. They both leave on the standard RGB video port at the rear of the GS. Until the TurboRez card is activated by an application that's aware of its presence, it stays in the background and doesn't interfere with normal GS operations. Which brings up the question: Are existing applications automatically enhanced by the TurboRez card? The answer is no and the main reason is that when those applications were originally written, cards like the TurboRez didn't yet exist.

TurboRez can generate a 256 color display (That is, it can display up to 256 colors on a line versus the stock GS's 16 color per line limitation). This applies to both the 320 and the 640 mode display modes. There's also an extended palette feature that allows up to 7000+ colors onscreen. This done in a somewhat similar fashion as the "3200" color mode used on the stock SHR display, except that with TurboRez it's totally handled by the hardware (so no software loading). Here, you have the advantage of additional shading capability and yet retain the ability to do palette-cycling for "cheap but fast" animation (Something you give up when using a "True-Color" display).

In addition to the standard 200 line (vertical) display mode, there's also an interlaced 400 line mode available. This works a stock GS RGB monitor. There's also the ability to switch into a true Overscan mode. This makes it possible to extend the display to fill up the monitor screen completely (Extra pixels are added to do this). Note: A 640 mode VGA adaptor will be announced at a later date.

MULTIPLANE TECHNOLOGY

On a typical Single Plane display system, animated "sprites" or "shapes" pass over or under each other, or in front of or behind fixed scenery in the background image. To make all of this appear seamless, the application software has to stay very busy not only erasing and redrawing the sprite of interest every time it's to be moved, but also any other sprite or scene element that it happens to overlap (even if those other objects are not due to be moved during this frame). As you might imagine, all of this activity slows the CPU down tremendously.

On a MultiPlane display, there can be several separate images that overlay one another. Modifying one of them doesn't affect the contents of the others. This reduces or eliminates the duplicated and timewasting gyrations necessary on a single plane system.

A BLITTER, YOU SAY ?

The term "blitter" comes from an obscure acronym used on earlier graphic hardware. It's commonly accepted meaning is basically the act of efficiently moving groups of pixel data from one place in memory to another. During this process, the pixel data can be modified if needed. For instance, "transparent" pixels could be detected and not written, or the source bitmap could be scaled as it's being read. The key is to move image data as fast as possible. A higher transfer speed means larger shapes can be drawn and/or higher animation frame rates can be maintained (i.e. "smoother" motion).

Now, a CPU chip can execute code and operate as a "software blitter" but, as is the case with other functions, dedicated hardware can easily outperform it. As an example, the Second Sight's onboard CPU is capable of software blitting at about 4 megapixels/sec (1 pixel= 1 byte). On a TurboRez card with .5 meg of ram, the hardware blitter can transfer at 16 megapixels/sec, about 4 times faster. On a TurboRez with 1 meg of ram, the blitter can achieve 32 megapixels/sec, or about 8 times as fast.

In the above example, we're only dealing with straight blitting. That is, we're only talking about reading pixels from one place and writing them to another without doing any kind of modifications. For a software blitter, this is as good as life gets because, to modify the pixel data as we "bli" it, means adding more instructions for the CPU to execute (per pixel). In the case of the transparent source pixel detect or in the process of scaling a source bitmap (shrinking or expanding it), the software blitter takes a big hit in performance. Now, instead of 4 megapixels/sec, we drop to about .5 megapixels/sec (with the software blitter)..

Ah, but even while performing scaling or transparent pixel detect operations, the TurboRez's hardware blitter still operates at its normal speed, it doesn't suffer from the "extra" workload. So comparisons now reveal TurboRez performance as being anywhere from 32 (16/.5) to 64 (32/.5) times faster than the Second Sight, under these conditions.

LINE DRAWING, SCALING AND ROTATION

The TurboRez's hardware line drawing feature shares the blitter circuitry and so it has similar performance specifications. Again, this is because the process of drawing a sloped line involves a heavier workload for a software blitter, whereas a hardware blitter takes it in stride. Because the TurboRez line drawing hardware can scale (shrink/expand) a source bitmap as it draws, we gain the ability to Scale with Rotation. This is extremely useful for many drawing and animation tasks. It allows us to use a master set of bitmaps and then modify them in "real time" as they're being drawn. Say, for instance, a spinning object that approaches and recedes.

This Scaling and Rotation capability also comes in handy for "texture mapping" operations. This is a process where a source bitmap is applied to the face of an onscreen object, much like sticking a decal on a plastic model. In this way, a pseudo 3D scene can be built up onscreen in a very rapid manner. Many popular games on the PC ("Doom", for one) use techniques similar to this generate virtual worlds for gameplayers to explore and interact with. With TurboRez's fast hardware drawing power, GS users will be able to experience full-screen, high frame-rate, texture mapped environments.

Why the overriding concern with drawing speed? Think about it: A 320 by 200 byte-per-pixel display is about 60K in size. A 640 by 400 display is 4 times that, a whopping 240K! Since realistic animation demands frame rates of 15 per second and higher, dealing with display memory buffers this big requires some pixel moving muscle. And that's where TurboRez comes in....

EGO Systems' Policies

By Robert A. Ribaric

I got a call the other day from a man who wanted to order some back issues. Here's how the conversation went:

"GS+ Magazine, this is Rob, may I help you?"

"I'd like to order some back issues."

"No problem, I'll just need your customer and credit card numbers."

"How much will it be for magazine and disk?"

"Ten dollars each."

"I want the sale price!"

"I'm sorry, that promotion ended on December 22nd."

"You should still give me the sale price!"

"Today is January 6th, there's not much I can do."

"Then we can't do business!"

"I'm sorry . . ."

<CLICK!>

Needless to say, I was bothered by that. In fact, this kind of thing happens all too often (see the "Writer's Block" department in GS+ V5.N6). That's why I'd like to take this time to set the record straight by listing and explaining all of our policies here at EGO Systems.

Yes, we *Are* a Business!

I'd like to start this off by confirming a nasty rumor about EGO Systems: We are indeed in this business to make money. While it would be nice to think that we're here out of the kindness of our hearts to help out the little guy, the truth is that our owner saw a relatively untapped market where he thought some money could be made. Yes, we do fill a fairly unique niche, but the whole idea was, and is, to put food on the table. I think this is where we all have something in common. Steve, Joe, and I live from paycheck to paycheck just like most of you. That's why I hope everyone will understand the things I'm about to discuss. So, with that said, here they are in no particular order:

Sales and Special Promotions

This seems like the logical place to start. Whenever we offer a special price or free item for a particular purchase, we always list when the promotion ends. Think of this as an "expiration date." We are not obligated in any way to extend the sale for any reason. All mail and on-line orders must be post-marked by this date, while phone and FAX orders must be received by closing time (5:00 p.m. Eastern time) that day unless otherwise stated. It's as simple as that.

Why are we being so strict about this? Well, every time we offer something like this, we risk (and often expect) losing money with the hopes of drumming up future business. Some of these sales are literally "loss-leaders," so we suffer a loss when people only order the bare minimum. So, to lose as little money as possible, when a sale is over, it's *over!*

It's in Tomorrow's Mail!

This is a policy we just started recently that applies to all non-subscription orders. This currently includes orders for things like: GNO/ME, Splat!, Switch-It!, Pick 'n' Pile, ZipGS Accelerators, Balloon, AutoArk, and Addressed For Success. This means that if you order one of these products by closing on one day, and we have it in stock, it will leave our office no later than closing on the next *business* day. Remember however, *this only applies to items we have in-stock*. If an item isn't in stock, we'll order it that day, but, we don't have any control over the speed of our suppliers, so we can't get it to you until they get it to us! Finally, of course, once we do ship something, it's out of our hands. (Trying to explain that we aren't part of the Post Office is one of the most annoying things about this job!) But, if you don't get the stuff you have ordered within a week or two, *let us know* and we'll do our best to take care of it!

How Long?!

We know what it's like to wait forever for something you have ordered. That's one of the main reasons for our "It's in Tomorrow's Mail" policy. However, this policy doesn't apply to GS+ Magazine subscriptions. Of course, some people *really* get upset because they have to wait a while to get their first magazine. However, it is clearly stated on our order forms that, because GS+ Magazine is published bi-monthly, you should allow up to twelve weeks for delivery. Why twelve weeks? Well, it's because we get new subscription orders every day, even on the day after we send out the current issue of the magazine! So, for those subscription orders, it's two months (eight weeks) before we mail out the next issue, and then up to another four weeks (although it's usually less) for that issue to arrive. This is why we offer optional first class delivery for \$2 an issue. If you pay for this option we'll start your subscription with the current issue and get it out to you in a protective envelope. If you get your whole subscription this way, you'll always get your magazine before everyone else! And, since our foreign

subscribers are also paying extra for shipping, we always start foreign subscriptions with the current issue and mail them in a protective envelope.

The decision to handle subscriptions this way is purely an economic one. We get a *big* discount for sending out each issue by bulk mail. Also, we don't have to pay for envelopes or the labor necessary to prepare them. By the way, our friendly postal service has everyone thinking that all the rates only went up a few cents, but they neglected to publicize that they changed single-piece third class to be the same price as first class for most weights! With these new postage rates, sending out single magazines actually costs us a lot more than the postal service would have you believe! (But, it does force us to send them out by first class mail, which gets them to you faster.) So, the bottom line is this: It costs almost *five times* as much to send a copy of the current issue individually as it does to hold that issue until the next bulk mailing! So, unless you are willing to pay for First Class delivery, please be prepared to wait up to 12 weeks for the delivery of the first issue of your subscription.

Bad Disks and Missing Issues

We send out thousands of magazines and/or disks to people in all fifty states and over fifteen different countries. Things get bent, torn, opened, squashed, x-rayed, and of course, misdirected! There's nothing we can do about that. However, we do know that our disk duplication process is far from fool-proof, so we will replace any bad disk free of charge! All you have to do is write or call. And even though we shouldn't be held responsible for mail service screw-ups, we will even replace issues that you never got or that arrived mangled!

We can afford to do this because, fortunately, it doesn't happen all that often. All we ask is that you wait a reasonable amount of time (like maybe twelve weeks since you got your last issue) before complaining about missing issues. If it hasn't been several weeks, we'll ask you to wait a little more before we send out a replacement. I can recall numerous times where someone has insisted that we forgot about them, only to receive two issues for the price of one a few days later. (Along that same line, you'd be surprised by the number of people that try to pull a fast one by complaining about not getting stuff they never ordered. That may work at fast food

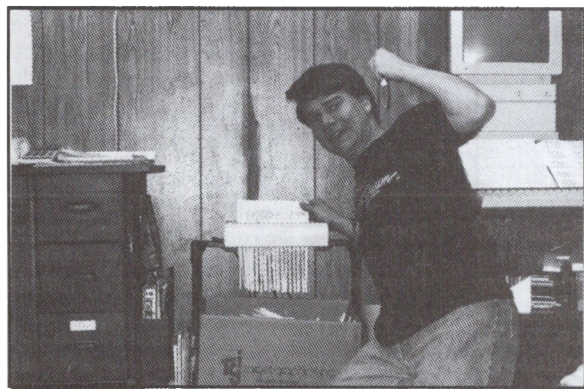
restaurants, but we have a very good database system here, so I can tell if someone's trying to pull a fast one on me!

Bad disks are another matter. If you get a bad disk with your *GS+* Magazine (or as part of a back issue or stand-alone product order), *let us know*, and we'll get a new one out to you in the next days mail!

Renewals and Address Changes

This is a related topic, but I thought it deserved special attention because of the different way we handle these. If someone moves and forgets to tell us, this is really not our fault, so we are not obligated to replace missed issues. We keep all change of address cards for a year, so there will be no mistaking whether or not we received them. To avoid this problem simply make sure that you tell us when you move, and be sure to have the post office forward your mail. (The post office is *supposed* to forward *GS+* Magazine, but they can't do it if there isn't a forwarding order in effect at the subscribers end!) Of course, every now and again, we *do* screw up and leave people out of mailings. (This is *very* rare, however.) If it is our fault, we'll take action and send out a replacement magazine right away. If, however, someone simply forgets to tell us that they moved, or neglected to get a forwarding order, tough luck!

A similar policy applies to renewals. We only send out two renewal notices: The first goes out about two months before your last issue is mailed and the second goes out immediately after your last issue is mailed. The second notice gives a date that you should renew by to keep from missing an issue. If we get your renewal by that date, we *guarantee* that you won't miss an issue! However, if we *don't* receive your renewal by that date, you probably *will* miss the next issue! Of course, if you *do* miss an issue, you can always buy it as a back issue. Or, if you only missed a single issue, we can start you back up with that issue for the additional \$2 mailing fee. As you can see, it pays to not wait!



One last thing about renewals, when you renew, please remember to *circle* the renewal options that you want! If you don't, we don't have any way to tell what kind of renewal that you want! (This is especially true for foreign subscribers!) If you don't circle anything, we simply assume that you want the same type of subscription and delivery method as before, and charge you for that.

State Sales Tax!!!

This is one of my pet peeves. I can't believe how many Tennessee residents don't add the proper tax amount. We have always mentioned it on all our subscription and renewal forms. At first, we thought it might be our fault, so we moved the message to a more prominent place on the page. When that didn't help, we double underlined it. Still nothing. So, I started personally highlighting this note with a bright, fluorescent yellow marker. Even with all these extra measures, only about half of our in-state customers include sales tax!

We get taxed for everything we sell to other Tennessee residents. Therefore, we have to collect tax from Tennessee residents. Since I live in Chattanooga, I know how odd it is to mail-order something from elsewhere in Tennessee and pay tax! Like you, I'm used to ordering most things from California or New York and *not* paying tax. But, we do have to pay sales tax on these sales, so that means that we have to collect it too!

Phone Numbers

We have three phone numbers. One for orders, one for technical support, and one for our FAX machine.

Our order number (which is toll-free) is for orders *only*, and works for all U.S. and Canadian residents. To be blunt, the toll-free line is for people who want to give us money. So, if you want to subscribe, renew, or buy something and you live in the U.S. or Canada, go ahead and call this number. If you live in another country, please use the technical support line.

Our technical support line is for questions, comments, foreign calls and, if you can't remember the other number, orders. So, if you have a question or a comment about one of our products, give us a call on this line and we'll be happy to talk with you about it! (However, please do try to restrict your questions to *our*

products. We don't mind talking about the IIGS market in general, but we can't afford to stay on the phone and answer questions about other people's products! Of course, we can try to help you get in touch with the people that would know those answers.)

And of course, our last number is for FAXes only. (We also recommend the FAX number for foreign orders. It will be cheaper than a voice call to the states, and you don't have to worry about what time of day it is here!) We also use this line for outgoing modem calls, so keep trying if you get a busy signal.

If you hate the phone, you can also use any of our e-mail addresses to contact us. All of these addresses are listed on page two of this magazine, and they are also in the *a.Read.Me* file on the *GS+* Disk.

System 6.0.1

Since our programs always utilize the latest System Software, it is important that all of our magazine and disk subscribers have it. So, several years ago we got Apple's permission to distribute the IIGS System Software to our magazine and disk customers. Since the System Software now takes up five disks, we can't afford to send it out to each and every subscriber, but we can, and will, copy it off for those magazine and disk subscribers that request it. If you're a subscriber to our magazine and disk, all you have to do is send us five, formatted disks and a self-addressed return mailer with the correct postage. Just do that, and we'll get System 6.0.1 right out to you! (See "How to Get System 6.0.1" elsewhere in this issue for details.)

Thank You!

Well, that's about all I can think of right now. If something else gets on my nerves, I'll let you know. Seriously, I hope no one takes offense to anything I've said. This is the way things are going to have to be if we are going to keep supporting the Apple IIGS. It's a tough market and getting tougher, so we're going by the book from now on. If you have any questions about these policies, give me a call (ask for the Operations Director), and I'll do my best to help.

I also want to give a big "THANK YOU" to everyone out there for keeping me employed! If it wasn't for all you guys, we'd have gone under a long time ago! And don't worry, if you continue to give us your business and follow these guidelines, we'll be here for a lot longer.

Anyway, that's our story and we're sticking to it! **GS+**

Finder Binder v1.0.1

By Josef W. Wankerl

When Finder Binder came out over a year ago (in *GS+ V4.N6*), it was destined to be the neatest Finder extension in history. I mean, who really likes that "An Application can't be found for this document" dialog the Finder presents? Not me, I can tell you that much. So Finder Binder was born, and it thrived. However, after its initial period of connecting dangling data files up, Finder Binder became inert. (How can use you it after everything's been connected, eh?) So there I was programming the Special Edition new desk accessory for this issue and I ran into a big problem. When the Finder told Special Edition that someone tried to open an edition file, the data the Finder was sending was bad. I couldn't believe it! A bit of hunting led me to Finder Binder, since it has to re-broadcast the request that someone wants to open a file. Finder Binder was sending that request incorrectly! (It was sending the dataIn parameter as dataOut and vice versa. Ouch!) Of course that problem had to be rectified immediately. I'm actually surprised it took so long for me to find it! Since I had to put a fix in Finder Binder, I figured I could add something new in there, too Previously when you cancelled the initial connection dialog, you were returned to the Finder without any other prompting. This meant that even if the data file you were trying to open had one of them new-fangled fancy comments in it that the Finder would normally display when the file couldn't be opened, those comments would not be shown. Finder Binder v1.0.1 will show those comments to you if they exist. If you already know what Finder Binder is and how to use it, then you're all set! Install it and go. If you've never seen

Finder Binder before and you are wondering what it is, read on!

Finder Binder is a Finder extension that ends forever the cursing, weeping, etc. that accompanies the least liked dialog box the Finder presents: The one that says "An Application can't be found for this document" (See first screen shot). We here at the *GS+* offices got incredibly tired of that dang dialog box, so I wrote Finder Binder to accomplish what everybody thought the Finder in System 6 would do to begin with.

Installing Finder Binder

To install the Finder Binder Finder extension, refer to "How To Use Your *GS+* Disk" in this issue. Finder Binder can only be used with System 6.0 or later. If run under an earlier System, it won't hurt, but it won't do anything, either.

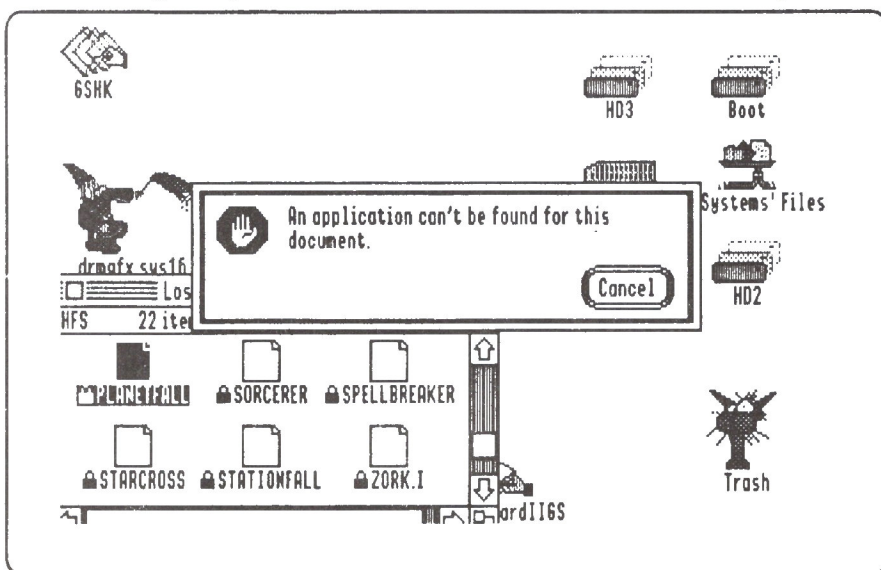
Finder Binder In Action

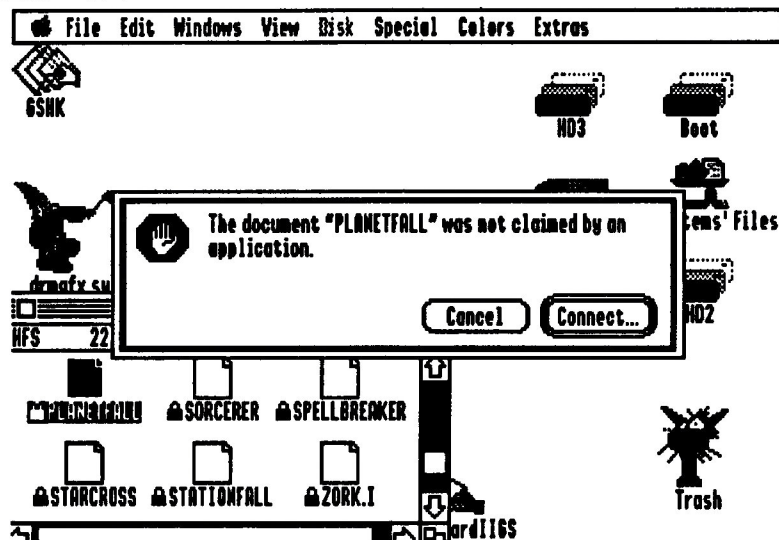
When you double-click on a file that has no association to an application, the Finder normally displays a dead-end dialog with one option: Cancel. With Finder Binder installed, instead of letting the Finder bring up the dead-end dialog, Finder Binder takes over and puts up a new dialog instead (See second screen shot). The Finder Binder dialog will ask you if you want to connect the "dangling" data file you've selected with an application of your choice. If you select the "Cancel" button, the dialog disappears and you're left in the Finder, just as you would have been if Finder Binder wasn't installed. The real magic, however, takes place when you click on the "Connect" button. If you select the "Connect" button, a Standard File dialog box will

come up in order for you to select the application you want your "dangling" data file associated with.

After selecting the application you want to connect your dangling data file to, a second dialog will appear (See last screen shot). This dialog lets you decide how you would like to have your file connected. There are three types of connections that can be made. The first type of connection is a one-time-only connection. You select this connection by clicking on the "Launch without making a connection" radio button. What this means is that the application you selected will be launched and the data file you initially wanted to open will be opened by the application. However, since this is a one-time-only deal, the next time you try to open the data file from the Finder, you'll get the Finder Binder dialog again. The second type of connection is a connection by name. You select this connection by clicking on the "Connect to this file only" radio button. As before, the application you selected will be launched and the data file you initially wanted to open will be opened by the application. However, the connection between *that* data file and the application will be remembered so the next time you open *that* data file from the Finder, the application you chose will be launched—no muss, no fuss. The connection is only made with the file that you selected, though. The connection is made by matching the file's name and type. The third type of connection is a connection by type. You select this connection by clicking on the "Make connections with all files of this type" radio button. A repetitive theme continues: The application you selected will be launched and the data file you initially wanted to open will be opened by the application. However, the connection between the data file's type and the application will be remembered. Note that this kind of connection is by type only, *not* by name and type as is made when connecting to one file only. The next time you open a data file of the same type as the data file you initially opened, the application you chose will be launched.

How does Finder Binder force the Finder to remember the connections between data files and applications, you ask? The same way this sort of thing's been done since 1986—with an icon file. Finder Binder creates a file called *Binder.Icons* and places it in the Icons folder of your





startup volume. This is a normal, everyday icon file (i.e. an "old style" icon file) that can be edited manually if you so desire by such programs as IconEd or DicEd. When you make a connection, the icon used is whatever the Finder currently had on record for that file.

An Example

So, let's say that you recently purchased the Lost Treasures Of Infocom package (see the review in *GS+* V4.N6) and you want to play the Planetfall adventure. You're in the Finder and you double-click on the Planetfall data file. Oops, the Finder doesn't know what to do! No custom icons are provided with the Lost Treasures package. Without Finder Binder, you'd be stuck. You'd have to find the interpreter application, launch it, and then open the Planetfall adventure file via a Standard File dialog. That's the kind of thing that the Finder was supposed to circumvent! With Finder Binder installed, however, you're in for a treat. Instead of the dead-end dialog, the

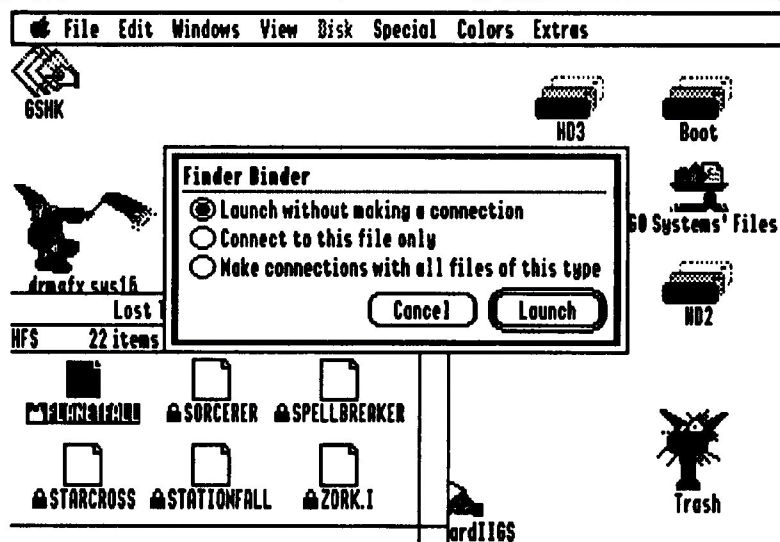
Finder Binder dialog will appear. You can then click on the "Connect" button, use the Standard File dialog to select the adventure interpreter application, and then choose the "Make connections with all files of this type" connection option. Finally, you click on the "Launch" button to launch the interpreter and begin playing Planetfall. Finder Binder will copy over the icon for an Infocom game file into the Binder.Icons file with the application information you've specified (in this case, that the application to launch is the Infocom game interpreter) and that the application should be launched for every Infocom game file of that type. Now, the next time you're in the Finder and you want to play Planetfall, all you have to do is double-click on the Planetfall data file. The connection is remembered, and the Infocom game interpreter will automatically be launched and you'll be playing Planetfall again. If you wanted to, instead, play Stationfall, simply double-clicking on the Stationfall data file will launch the interpreter because you

made the connection with all Infocom games that have that file type and auxiliary type.

Icons Icons Everywhere

Since Finder Binder creates an old-style Finder icons file, you can use this to your advantage whenever you need to create some new icons. Simply have Finder Binder connect the icons up to the application of your choice, then use an icon editor to edit the icons. You don't have to worry about knowing the file types or auxiliary types or anything like that. So, going back to the Lost Treasures Of Infocom example, you can launch your favorite icon editor and easily change the icon that is associated with Infocom adventure files.

That about covers the bases on how to use Finder Binder, and how it works. If you encounter any problems, please fill out a problem form and return it to us here at *GS+* Magazine. **GS+**



GS+ Back Issue Information

Sep-Oct 1989 (V1.N1)

- Less than 15 copies left!
- Reviews: Arkonoid II, Crystal Quest, ORCA/C, Rocket Ranger, Siphed, Test Drive II, TransWarp GS, TurboMouse ADB

May-Jun 1990 (V1.N5)

- Less than 20 copies left!
- AppleFest Report
- Beginner's Guide to System Disks - Part 1
- Brush with Greatness - How your IGS makes colors
- Reviews: CMS 45MB Removable Hard Drive, S&S-RAMCard, DataLink Express modem, Visionary GS digitizer, GraphicWriter III, ZapLink, McGee, Math Blaster Plus IGS, The New Talking Sockbear Alphabet, ZipGS

Jan-Feb 1991 (V2.N3)

- AppleFest/Long Beach '90 & Apple II Achievement Awards
- Interview with Jim Carson of Vitesse, Inc.
- Introduction to System Software v5.0.4
- RAM Namer - A CDv that allows you to rename RAM disks
- Reviews: ZipGSX, LightningScan, Design Your Own Home, Print Shop Companion IGS, Your IGS Guide, Dragon Wars, 2088: The Crylan Mission - Second Scenario, Space Ace, Sinbad & the Throne of the Falcon

Sep-Oct 1991 (V3.N1)

- Protecting Your Investment - A Guide to Surge Protection
- A Conversation with Roger Wagner - Part 2
- Working with the Toolbox - Part 8: QuickDraw II
- FGS - A desktop program that generates Fractals
- Reviews: two 100MB hard drives, Nine Owl Slide-On Battery, ORCAInteger BASIC, ORCA Talking Tools, Storybook Weaver: World of Adventure HyperBole, HoverBlade, Shareware: DeskTop Painter, SoundSmith, IGS Classic: Bard's Tale IGS

Jul-Aug 1992 (V3.N6)

- KansasFest 1992
- Introduction to 3-D Graphics - Part 3: Speeding Things Up
- Working with the Toolbox - Part 8: The Control Manager
- Understanding FSTs
- Using rBundles in Your Programs
- Quick Folder - A Finder Extension that allows you to open folders from the Finder's Extras menu. *Needs System 6.*
- Extra Bits - A Control Panel that lets you change the new Battery RAM parameters that System 6 didn't provide a Control Panel for. *Requires System 6.*
- Reviews: ZipGS (10MHz CPU/64K Cache), Gate, Space Fox, Utility Launch & Utility Works

Sep-Oct 1992 (V4.N1)

- Apple EXPO East
- Open From Desktop - A Finder Extension that allows you to open any item on your desktop from the Finder's Extras menu. *Requires System 6.*
- If Notes - A 20-page NDA notepad. *Requires System 6.*
- Miscellaneous Library - A collection of useful routines to use from any programming language that supports linking to standard libraries
- Reviews: ContactsGS, GSymbolix, Kangaroo, ORCA/Debugger, UltraCat, Storybook Weaver: World of Make-Believe

Nov-Dec 1992 (V4.N2)

- Understanding Accelerators
- The Basic IGS
- Working with the Toolbox - Part 9: The Menu Manager
- Font Reporter - A program that lets you display and print out any font in your system. *Requires System 6.*
- Reviews: AutoArt, 1990 GEM Apple II CD-ROM, IGS System Transport Case, Out of This World, TrueType Font Collection, Universe Master
- Review updates: Desktop Enhancer v2.0, Pointless v2.0

(All programs after V4.N2 require System 6.0.1, unless otherwise noted)

Jan-Feb 1993 (V4.N3)

- The World at Your Fingertips
- Understanding the Desktop
- Batt Reporter - A program that generates plain English reports from battery RAM configuration files
- Rainbow - Change the colors of your Finder device icons
- GS+ program updates: Battery Brain v2.0, Open From Desktop v1.0.1, Rebuild Desktop v1.1, EGOed v1.9
- Reviews: CV-Ram Memory Card, StyleWriter printer, ProSel-16, TransPro III v1.1, Ant Wars, FloorTies, Quest for the Hoard

Mar-Apr 1993 (V4.N4)

- Beginner's Guide to Finder v6.0
- Working with the Toolbox - Part 10: LineEdit
- LASERbeam - A program that lets you download PostScript files to a PostScript printer
- Font Memories - A control panel that lets you keep your bit-mapped fonts on a disk other than your startup disk
- EGOed lite - a smaller, faster version of EGOed
- GS+ program updates: Rainbow v1.0.1, NoDOS v1.8
- Reviews: Salvation—Deliverance, DreamGraphics, The Manager, The Passport House Letter, The Lost Tribe, DuelTris

May-Jun 1993 (V4.N5)

- The Scavenger - Use CD-ROMs from other computers on an IGS
- Apple EXPO West Report
- Anna Matrix - a Cool Cursor Editor
- GS+ program update: Cool Cursor v2.0, Miscellaneous Library
- Reviews: Apple Desktop Bus Mouse II, Baccarat, Key Fonts Pro CD-ROM, MAZER II: The Ghost of Mordaine, Pick 'n' Pile, Shanghai II: Dragon's Eye, Solarian GS, Twilight II, TypeWest

Jul-Aug 1993 (V4.N6)

- System 6.0.1—For Users
- KansasFest 1993
- Catch the WAV: A Guide to Scavenging Sound Files
- Secrets of Writing Twilight II Screen Blankers
- Finder Binder: Avoid the "An application can't be found for this document" dialog by connecting documents to an application
- GS+ program updates: AutoSave v2.0, EGOed lite v1.0.1, Extra Bits v1.0.1
- Reviews: Castle Metacast, HardPressed, The Lost Treasures of Infocom, Treasures From Heaven: Quest for the Hoard 2, Your Money Matters, Zip Drive

Sep-Oct 1993 (V5.N1)

- So You Bought a Hard Disk... Now What?
- Apple (Live) Talkin'
- An Introduction to Object Oriented Programming
- File Dump: A complete Object Oriented Programming example
- GS+ program updates: Anna Matrix v1.0.1, Cool Cursor v2.0.1
- Reviews: Applied Engineering's High Density Disk Drive, Apple II SuperDrive Controller Card, MODZap, soniqTracker, ORCA/Pascal v2.0.1, SoundMeister, TypeSet

Nov-Dec 1993 (V5.N2)

- IGS Maintenance—Part 1: The Mouse and Keyboard
- SCSI ("Simple Connections," Says Igor.)
- Balloon v1.0: A finder extension that lets you extract files from ShrinkIt Archives
- CD-Roam: An application that scavenges files off CD-ROMs
- KaBlooi! A IGS version of the game Minesweeper
- Reviews: 3D Logo, Focus Drive Hard Card, Prism, Tulin Floptical Disk Drive

Jan-Feb 1994 (V5.N3)

- IPC (Igor's Playful Code) - A guide to using IPC on the IGS
- EGOed v2.0: Read and write RTF files, plus a new color menu
- MIDI Surgeon: Convert MIDI data files to MIDI Synth format
- Reviews: Ancient Glory, Apple Extended Keyboard, AudioClips, GNO/ME 2.0, HP DeskWriter 550C Printer, HyperLogo, NCS Pro 240 Hard Disk, Pedigree

Mar-Apr 1994 (V5.N4)

- Programming the IGS - Part 1: Getting Started
- Playful - A Finder extra that plays ALL rSounds in ANY type of file!
- What Is This? - A Finder extra that gives you information on any icon you select.
- LASERbeam v1.1 - Now, download PostScript files and FONTS to your PostScript printer!
- Miscellaneous Library - Now you can read Macintosh resources!
- Reviews - Addressed for Success, ORCA/Debugger vs. Splati, ORCA/Module-2

May-Jun 1994 (V5.N5)

- Programming the IGS - Part 2: Programming the IGS
- Mr. Priceguide Looks at Hard Disks - Advice on buying a hard disk mechanism.
- FLJ Convert - An application that converts PC FLJ animations into PaintWorks animations!
- MoreSound - An application that lets you change the events in the Sound control panel.
- Reviews - DiscQuest, MS-DOS File Utilities, Salvation: Backup v2.0, Spectrum

Jul-Aug 1994 (V5.N6)

- Programming the IGS - Part 3: GSOS and the Toolbox
- So You Bought a Hard Drive Mechanism. Now What?
- Working With the Toolbox - Part 12: Standard File
- Clip On - View the System Clipboard from any desktop program
- Sun Dial - A great new clock NDA
- What To Do - NDA to do list manager
- Reviews - Six Pack, The Tines

Sep-Oct 1994 (V6.N1)

- Halloween Fun With Your IGS
- All About IGS Graphic Formats
- Find Original - Easily locate the files your Finder aliases point to
- Table Scrapes - The best IGS scrapbook program yet
- Reviews: DiscQuest Encyclopedia, Quick Click Calc

Nov-Dec 1994 (V6.N2)

- Programming the IGS - Part 4: Program Building Blocks
- Everything you need to know about buying a laser printer
- Working With the Toolbox - Part 14: The TextEdit Tool Set
- Copy Icon - Copies icons from the Finder desktop
- Elucidation - Edits Finder File Type Descriptor files
- Geeker - Edits the Finder's "geek" preferences
- Unlimited I - An Ultima I game and character editor
- Reviews: AJGE CD #1, The SimpleScript Workbook, Ultima I - The First Age of Darkness

Jan-Feb 1995 (V6.N3)

- How to shop for a modem
- All about Nifty List
- Working With the Toolbox - Part 15: The Print Manager
- The GS+ XCMD for Spectrum v2.0
- ElkieFont - View any font, just by double-clicking on it!
- GS+ program updates: Cool Cursor v2.0.2, AnnaMatrix v1.1
- The GS+ FAQ File
- Reviews: Financial Genius, GS Invaders, Stalactics, Switch-It!

Back Issue Prices

\$5 For Each Magazine

\$6.50 For Each Disk

\$10 For Each Magazine and Disk Set

All prices include postage and handling. (Orders will be sent First-Class to the U.S., Air Mail to Canada and Mexico, and surface mail to all other countries. For Air Mail to all other countries, add an additional \$3 per issue. If you pay by credit card, you will be charged only for the additional postage needed.) *Tennessee residents must add 7.75% sales tax.* Mail back issue requests to: **GS+ Back Issues, c/o EGO Systems, PO Box 15366, Chattanooga, TN, 37415-0366; or call 1-800-662-3634 (or 615-332-2087), Monday through Friday, 9 a.m. to 5 p.m. Eastern Standard Time, to order or verify availability. Please include your phone number on all orders placed by mail (in case we are sold out of an issue)! For MasterCard or VISA orders placed by mail, also include your credit card number, expiration date, and signature. Any issues not listed are sold out!**

[Editor's Note: The Miscellaneous Library is not a stand-alone program! It is a programming tool that we think advanced readers of *GS+* Magazine will find very useful. It is intended for those doing advanced IIGS programming. The information provided here is an overview of what's *new* in the Miscellaneous Library and does not provide complete documentation for all of its calls—if you plan to use the Miscellaneous Library, you *must* read the *MiscLib.Docs* file (which is on your *GS+* Disk) for complete information!]

The Miscellaneous Library (MiscLib) is a collection of various routines I have found myself using over and over. They can be used from any language that supports linking to standard libraries, such as ORCA/C, ORCA/Pascal, and ORCA/Modula-2. For detailed assembly language stack diagrams on how to make the calls, and for a short description of the parameters, see the figures in the *Figures* file. (This file is located in the *GSP.V6.N4.SEA* self-extracting archive that is on your *GS+* Disk.)

Uncallable Support Routines

I got a call the other day from a subscriber who wanted to use one of the routines in MiscLib which was documented as uncallable. For the most part, you can't do this. A lot of the support routines are called via JSR and transmit parameters both ways using registers. MiscLib is meant to be used by everybody, especially high level languages, so calling support routines is pretty much impossible unless you use assembly language and you really know what you're doing. However, there are a few routines (the ones in the Mac Resource section come to mind) which you can call via JSL, pass the parameters on the stack, and receive results in the A and X registers. To call these routines, it's best to use assembly language, just make sure that case sensitivity is turned on. You will need the source code in front of you so you'll know what parameters to pass and what the routine returns. I make no guarantees as to how well the support routines will work outside of the MiscLib context, but you have the source code and you can look through it to see if there will be any snags in meshing the support routine with your programs. And on that note, you *do* have the source code in front of you, so you can take that uncallable support routine and massage it into whatever your program needs. (Source code is meant to be modified, isn't it?)

About Control Hits

If you're using the MiscLib "About" routines in your programs, you may have noticed that hits on controls in the About window are being reported to your program. If you are expecting this and just ignore the hits, everything works fine. However, if you only expect to receive hits from controls in windows that your application directly controls, confusion may result. To remedy this, I simply inactivated all the controls in the About window. This was accomplished by setting the high byte of the flag word in all controls to \$FF in the *MiscLib.Rez* file. Since all the controls in the window are static text controls (except for the icon control, which worked fine in the first place) inactivating them doesn't have any effect on the appearance of the window.

New Edition

The Edition section of the Miscellaneous Library has changed a bit to accommodate some new atom types. The very first version of the edition file specifications only had PBLs and PROG atoms in the file. I made a comment to Mike Westerfield (the author of the edition specifications) that these atoms were only Pascal strings, not GS/OS class 1 input strings, and running under GS/OS, some pathnames could overflow the 255 character limit on Pascal strings. After that, two new atoms, PBGS and PRGS, were added to take the place of the PBLs and PROG atoms. For the Edition section of MiscLib to keep in step, I had to change the *EditionNew* call so it could add the two new atoms, and I also had to add two new calls, *EditionGetPBGS* and *EditionGetPRGS*, so that your programs could get to the new atoms after opening an edition file. (These new calls are used by II Notes when publishing and subscribing to edition files.)

Name Count

In the last issue, I updated Cool Cursor to display a progress thermometer while the

Cursors directory was traversed. In order to properly scale the progression, I had to know how many files were in the Cursors directory. I already had a *namesHandle* containing all the files, but I didn't know how many files were in there. That made me want a routine that would count the entries in a *namesHandle*. So, as a result, I created the *CountNamesHandle* routine. Cool Cursor doesn't currently use it, but if there's ever another update, you can bet the *CountNamesHandle* routine will be used.

In Search Of . . .

My favorite new MiscLib routine is the *SearchMemRec* routine. You can now search through a sorted list of *memRecs* with the *SearchMemRec* routine to find a target member. A binary search is performed on the *memRecs*, so the *memRecs* *must* be sorted before you use this routine. (The Special Edition program from this issue uses the *SearchMemRec* routine when checking to see which editions have changed.)

Figure 1 shows the new MiscLib calls and gives a brief description of what each one does. For the specifics on how to use any of the Miscellaneous Library routines in your programs, break out the *MiscLib.Docs* and related files located in the *GSP.V6.N4.SEA* self-extracting archive on your *GS+* Disk.

If you have any questions about the Miscellaneous Library, send them in! I especially want to hear any suggestions you might have for additions to the Miscellaneous Library. Putting all of these routines in one place has already made my IIGS programming easier—I hope it does the same for you. *GS+*

Figure 1
The New Miscellaneous Library Calls

Call Name	Section	Description
<i>CountNamesHandle</i>	Names	Returns the number of entries in a <i>namesHandle</i> structure
<i>EditionGetPBGS</i>	Edition	Returns the PBGS atom in an edition file
<i>EditionGetPRGS</i>	Edition	Returns the PRGS atom in an edition file
<i>SearchMemRec</i>	List	Does a binary search on a sorted list of <i>memRecs</i>

What's New?

Compiled by Steven W. Disbrow

Well, 1995 seems to be shaping up to be a great year for the IIGS! First Big Red Computer Club decided to stick around (see "What's New?" in *GS+* V6.N3), and, judging by the press releases we've been getting, it looks like lots of neat new products are about to be released for the IIGS. (You should remember that what you are about to read was taken from press releases provided by the publishers of these products. So we can't guarantee the accuracy of the claims made.)

MicroDrive From SHH Systeme

SHH Systeme, the same folks that brought us the TurboIDE and BlueDisk controller cards have announced the availability of a new IDE hard drive controller for the IIGS (and Iie). (For those of you that don't know, an "IDE" drive is the type of drive that is usually found on IBM PC compatibles. This means that they are plentiful and fairly cheap.) This new card is called the *MicroDrive Card* and it can be used in one of two ways:

- 1) As a controller card for one or two *external* IDE hard drives.
- 2) As the controller for a single *internal* 2.5-inch IDE hard drive. This basically gives you a "hard drive on a card" that you simply plug into one of your expansion slots.

Among the MicroDrive Card's many features are:

- Fully GS/OS and ProDOS compatible.
- Works in any slot except slot 3.
- Can handle up to two 256MB external IDE drives
- Compatible with all existing hardware (ZipGS, PC Transporter, etc.)
- IIGS version is fully optimized for use with the IIGS and comes with a custom GS/OS driver for increased speed (when compared with Iie version).
- Can be used as a complete replacement for the Vulcan or Vulcan Gold controller card.
- Has been tested and found to work with a whole host of different IDE drive types. (It should work with *any* IDE hard drive.)
- One year limited warranty on "materials and workmanship."

- The MicroDrive Card has a thirty day money back guarantee.

- Free software updates and support via GENie's A2 bulletin board or Internet e-mail.

That's a pretty impressive list of features, but the most impressive feature of the MicroDrive Card is its base price, just \$69! However, this price does *not* include an IDE cable to connect a drive. Fortunately, these cables are fairly easy to find and they are very inexpensive. But, if you can't find one SHH Systeme will sell you one for only \$9 extra.

If you want to use the MicroDrive Card as a "hard drive on a card," you will also need to purchase the 2.5-inch drive mounting kit from SHH Systeme. This costs \$24 and would bring the total cost up to \$93, without a hard drive.

Of course, the whole point of the MicroDrive Card is that since IDE hard drives are dirt cheap, you'll want to buy your own separately. But, if you don't want to bother with that, SHH Systeme also has several "plug-and-play" versions that *include* a hard drive. Prices on these range from \$246 for a 20MB model to \$546 for a 250MB model. (Not too bad when you consider that Applied Engineering used to charge over \$1,000 for a 100MB Vulcan drive!)

And of course, since SHH Systeme is in Germany, it's going to cost a bit extra for them to ship the MicroDrive Card to you. Unfortunately, the MicroDrive Card and it's accessories have too many shipping options for me to repeat here, so, I've put the complete text of the MicroDrive Card press release on your *GS+* Disk in the *a.Read.Me* file. If you don't get the *GS+* Disk, drop SHH Systeme a line at one of the addresses below and ask them to send you the latest information on shipping costs. (Actually, due to fluctuating currency exchange rates, even if you get the *GS+* Disk it would be a good idea to contact them before you order, just to get the most current pricing.)

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The Quicker Clicker Calcer

The ByteWorks, Inc. has announced that it has begun shipping version 1.2 of their way cool IIGS spreadsheet program, Quick Click Calc. (See review in *GS+* V6.N1.) This new version of the program fixes all of the known bugs that were in the previous version and also adds several new features such as support for international monetary formats.

But the best news is that this update is *free* to registered owners of Quick Click Calc! So, if you've not yet gotten your free update, or if you just want more information about Quick Click Calc, contact:

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Albuquerque, NM 87120
(505) 898-8183
Internet: MikeW50@aol.com

Are You SCSI-2?

Sequential Systems recently announced the release of a new device driver that lets owners of the Apple High-Speed SCSI card take full advantage of CD-ROM drives that are based on the SCSI-2 standard.

Without this driver installed, SCSI-2 CD-ROM drives can only be used with the Apple High-Speed SCSI card as data drives. However, with this driver installed, the Apple High-Speed SCSI card can utilize these drives to play audio CDs! This driver will also allow Apple High-Speed SCSI card owners to finally take advantage of the audio features of Sequential System's DiscQuest software (when using it with a SCSI-2 drive!)

The package also includes a driver for the Media Control Toolkit, so that you can play audio CDs from inside any program using the Media Controller new desk accessory.

The price of the driver is \$24.95 and it's only available from Sequential Systems. For more information, contact them at:

Sequential Systems
1200 Diamond Circle
Lafayette, CO 80026
(303) 666-4549
Internet: bazyar@netcom.com

Spectrum v2.0 Ships!

Well, even though it was supposed to ship in time for our last issue (to coincide with our article "The *GS+* XCMD For

Spectrum"), I'm still extremely happy to report that Spectrum v2.0 *is* shipping! (Seven Hills Software swore that Spectrum v2.0 *would* ship in January 1995, even if it meant shipping at 11:59 p.m. on the 31st! And that's just about when it did ship!) Of course, it's been about a year since the first version shipped (see our review in *GS+ V5.N5*), so you might be wondering if it was worth the wait. Well, we've been beta-testing Spectrum v2.0 here at the *GS+ Magazine* offices and I can answer that question with an emphatic "Yes!"

Seven Hills Software didn't just fix the bugs (which were, frankly, quite minor), they added a *ton* of new features that will simply blow you away! I can't list all of those features here (the manual addendum describing the new features and changes is said to be about *60 pages* long!), but I will hit some of the highlights:

- Spectrum v2.0 plays its sounds by event number, which means you can use the Sound control panel to pick which sound is associated with each event. (This is a vast improvement from the "all or nothing" sound scheme of the original Spectrum.)

- Resuming ZModem transfers is now more reliable when receiving unique files that happen to be named the same.

- The Scrollback buffer can now be set to filter out control characters.

- Most Online Displays now support an *editable* chat line.

- Phonebook entries now remember your Online Display choice.

- Scripts execute up to 300% faster than they did in version 1!

Speaking of scripts, the Spectrum scripting language has had some *major* additions made to it, including:

- You can now use any number of *named* variables in your scripts!

- You can create up to 32 "HitZones" on the screen, so your script can respond to mouse clicks.

- As detailed in our last issue, Spectrum v2.0 supports the use of "External Commands" (XCMDs), which greatly expand Spectrum's capabilities. Spectrum v2.0 ships with several XCMDs, including:

- The Chatterbox XCMD that lets scripts display and manage private messages

while participating in a live online chat (like a GENie roundtable chat).

- The AlertWindow XCMD that gives script authors complete access to the AlertWindow tool call.

- The Debug XCMD that helps script authors debug their scripts.

- The Inform XCMD which can display the contents of a Teach file in a custom window.

- The Speech XCMD that works in conjunction with the Talking Tools (from the ByteWorks) to speak any string. You can even use this XCMD to create a script that will read out loud the proceedings of an online conference as it is happening!

- The Twilight II XCMD that controls the Twilight II screen blanker so it blanks only at appropriate times.

- The XLoader XCMD, which provides an easy way to activate and deactivate Spectrum XCMDs without having to quit and restart Spectrum.

When you put all these new features together (and I haven't even come close to describing everything that's new in Spectrum v2.0), you get one of the most powerful telecommunications packages and scripting environments available for *any* computer! (I'm not kidding!) In fact, Spectrum v2.0 comes with a "What's New?" script that, when you run it, acts a *lot* like a HyperCard IIGS stack!

So, what's all this wonderful new stuff going to cost you? Well, if you bought Spectrum v1.0 in December of 1994 or January of 1995, it won't cost you anything. Just contact Seven Hills (and include a copy of your dated sales receipt) and they'll send you the update for free. If you already own Spectrum v1.0 and you bought it before December of 1994, the cost to upgrade is only \$25. (Not too bad, when you consider that you get all those new features *and* another manual!)

If you don't own Spectrum, but you *do* own another Apple II telecommunications program, you can "trade up" to Spectrum v2.0 for only \$65. When you order, just mention the program you are trading up from. If you don't have Spectrum and you don't have another program to trade up from, the cost is still only \$129.95 when ordered direct from Seven Hills Software. (Of course, none of these prices include the \$3.50 shipping and handling charge, and Florida residents have to add 7% sales tax.) For more information or to order, contact:

Seven Hills Software
2310 Oxford Road
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(904) 575-0566
FAX: 904-575-2015
Internet: sevenhills@genie.geis.com

Balloon v2.0

I'm *extremely* pleased to announce that on January 25th, 1995, EGO Systems began shipping v2.0 of our extremely popular program Balloon. (Balloon was last seen in *GS+ V5.N2*. However, Balloon v2.0 will *not* appear in *GS+ Magazine*!)

While the original Balloon was a simple Finder extension, Balloon v2.0 is a new desk accessory (NDA) that allows you to easily create and maintain NuFX (ShrinkIt) archives from within *any* properly written IIGS desktop application! Since Balloon is a NDA, you no longer have to run GS-ShrinkIt to extract files from archives! So, if you use a desktop telecommunications program, like Spectrum from Seven Hills Software, you can manipulate your ShrinkIt archives while still online!

Here are a few of Balloon v2.0's features (features in *italic* are new in Balloon v2.0 and were not present in v1.0):

- Balloon can extract files from ShrinkIt archives.

- *Balloon can create new ShrinkIt archives.*

- *Balloon can add/remove files to/from existing ShrinkIt archives.*

- Balloon recognizes and can open *self extracting archives* as well as ShrinkIt archives that are enclosed in Binary II, MacBinary and *America Online for Macintosh* "wrappers."

- *Balloon works properly in both 640 and 320 modes!*

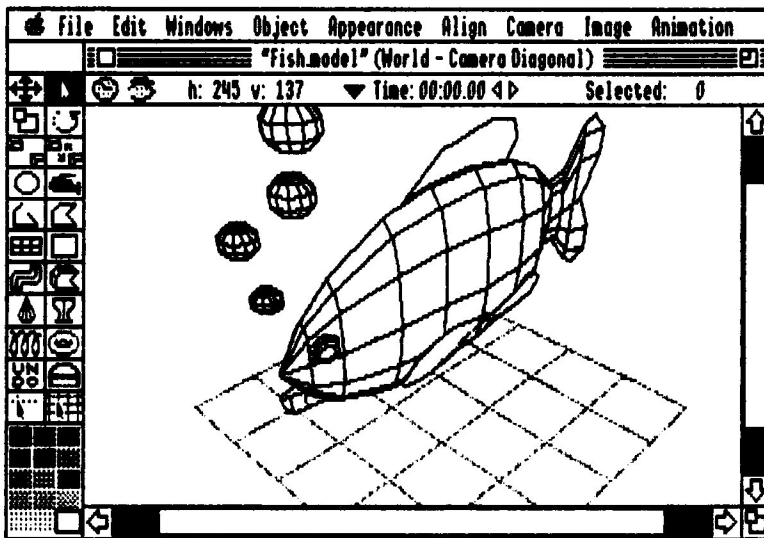
- *Balloon allows you to have multiple ShrinkIt archives and file information windows open at once.*

- Balloon is Finder friendly. Double-click on a ShrinkIt archive and Balloon opens it automatically! *Balloon can also communicate with other system extensions to automatically open files after they are extracted from an archive! (i.e. When you extract a text file, Balloon can automatically ask EGOed or EGOed lite to open it for you!)*

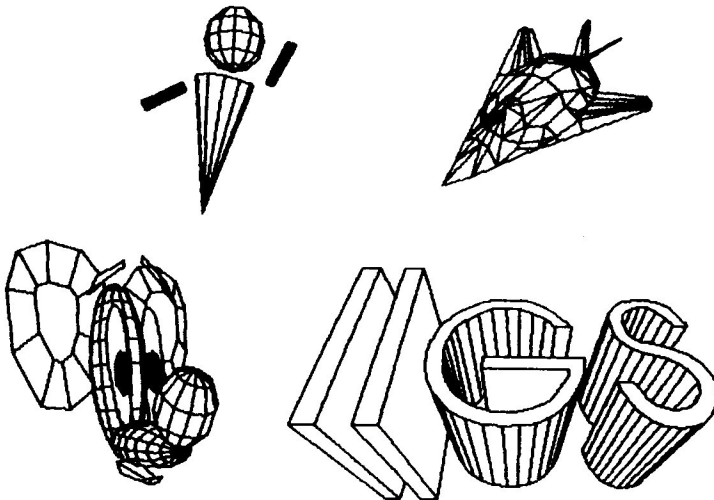
The Balloon v2.0 package also comes with the Balloon XCMD for Spectrum v2.0. By using this XCMD with

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Requires an Apple IIGS running System Software 6.0.1, 2MB of memory, and a color monitor. A hard drive, 4MB of memory, and an accelerator are recommended.

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Spectrum v2.0, you can have Balloon *automatically* expand the ShrinkIt archives that you download with Spectrum! You don't even have to open Balloon!

In addition, the Balloon XCMD for Spectrum v2.0 lets you write Spectrum scripts that give you full access to the Balloon new desk accessory and all of its capabilities. For example, you can write a script that will create a new archive and add files to it. Or, you could write a script that would open an existing archive and extract all the files from it to a folder that you specify.

As if that weren't enough great stuff, the Balloon v2.0 package also includes a copy of our popular new desk accessory text editor, EGOed lite. EGOed lite allows you to quickly and easily read and print text, Teach, AppleWorks Classic and AppleWorks GS word processor files. Balloon and EGOed lite will even work together to automatically open the word processing files that you extract from your ShrinkIt archives!

The regular price for Balloon v2.0 is just \$25! This price includes first class shipping to anywhere in the United States, Air Mail shipping to Canada and Mexico, and surface mail shipping to anywhere else in the world. (For Air Mail delivery outside North America, add \$3, for a total of \$28.) And, when you send in your Balloon registration card, we'll send you a *free* issue of *GS+ Magazine*!

Of course, many of you out there *are* *GS+* Magazine subscribers already, so you might already have Balloon v1.0. So, you get a special deal (in addition to the free issue). If you are a *GS+* Magazine subscriber, you can get Balloon v2.0 at a special introductory price of only \$20! When you order, just let us know that you are a subscriber and include your customer number (it's on your *GS+* Magazine mailing label above your name) to qualify for the special introductory price. But hurry! This special offer ends on April 28th, 1995!

Balloon v2.0 requires System Software v6.0.1, at least 2MB of RAM, and a hard drive. Spectrum v2.0 is required to use the Balloon XCMD for Spectrum v2.0, it will *not* work with earlier versions of Spectrum. (However, the Balloon new desk accessory *will* work with older versions of Spectrum.)

Only current *GS+* Magazine subscribers can purchase Balloon for the special introductory price of \$20. However, if you subscribe when you place your order for Balloon, you can get the special pricing. This special offer expires on April 28th, 1995. For more information, or to order, call us at 800-662-3634 (orders only please) or 615-332-2087. Or write to us at the address below.

AutoArk Ready to Roll

As I write this, AutoArk v1.1 is still undergoing final testing, but by the time you read this, it should be shipping. So, what's new in this version? Well . . .

• AutoArk is now 100% compatible with System 6.0.1 and the Finder. Specifically, you can once again double-click on an AutoArk file and it will be expanded and opened like it should be. (The previous version of AutoArk would re-compress the file before it could be opened.)

• Lots of small internal bugs have been fixed. This has given AutoArk a general improvement in overall compatibility. For example, one of these bugs prevented you from using the ORCA/Shell "edit" command to edit a file that had been compressed with AutoArk. This now works like it should.

• Previous versions of AutoArk only re-compressed files when you returned to the Finder. This proved to be inconvenient for users of other program launchers, like ProSel. To fix this, AutoArk v1.1 lets the user specify a "home" application. When the user returns to this home application, AutoArk will re-compress any files that have been expanded.

• If you don't like the idea of AutoArk re-compressing files while you are in *any* application, you can also set AutoArk v1.1 to wait until you shut down your computer before it begins to re-compress its files!

• The AutoArk new desk accessories have been enhanced to allow you to compress or expand entire folders and all of their contents.

• AutoArk now has additional Inter-Process Communication facilities to allow other programs to tell AutoArk to compress or expand a file.

• AutoArk v1.1 also comes with a new Finder extension, Smart Names, that works with AutoArk v1.1 to automatically compress or expand files simply by changing their names! For example, if you have a file named "Fred" and you change its name to "Fred.ark", Smart Names will instantly tell AutoArk to compress the file! If you delete the ".ark" from the end of the filename, Smart Names will tell AutoArk to expand the file! And, if you set up a folder with a name that ends in ".ark" Smart Names will tell AutoArk to compress any files that you copy into that folder! (If you have Balloon v2.0 installed, Smart Names will work with it also! Just use ".shk" instead of ".ark" and Smart Names will tell Balloon to compress the file!)

The regular price of AutoArk v1.1 will be \$35. As with our other products, this price includes first class shipping to anywhere in the United States, Air Mail shipping to Canada and Mexico, and surface mail shipping to anywhere else in the world. (For Air Mail delivery outside North America, add \$3, for a total of \$38.) However, until June 30th 1995, the price for AutoArk will be only \$30. (This special price is for everyone, not just GS+ Magazine subscribers!) As an added bonus for new AutoArk purchasers, when you send in your AutoArk registration card, we'll send you a *free* issue of GS+ Magazine!

If you are a previous owner of AutoArk, the cost to upgrade will be \$7.50 through June 30th, 1995. After that, the cost to upgrade will be \$10. For more information, contact us at (615) 332-2087 or write to us at the address below.

And Finally!

If you want to purchase AutoArk v1.1 and Balloon v2.0 at the same time, we have a special deal on that too. Through June 30th, 1995 the cost of the AutoArk & Balloon bundle is \$45. After June 30th, the cost will be \$55.

Send 'em In!

If you have a IIGS product or service that you want us to shamelessly plug, send your press release to:

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The deadline for inclusion of a classified ad in the next issue (Volume 6, Number 5) of *GS+* Magazine is April 3, 1995. Simply send your ad along with your name, address, phone number, number of issues to run, and payment (made payable to "EGO Systems") to *GS+* Classifieds, P. O. Box 15366, Chattanooga, TN 37415-0366; or call us at (615) 332-2087, Monday through Friday between 9 a.m. and 5 p.m. Eastern Time, to place an ad with your MasterCard or VISA. You can also FAX us your classified ad by calling (615) 332-2634.

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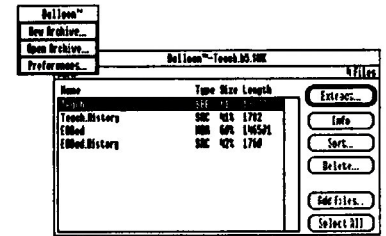
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Balloon™ v2.0

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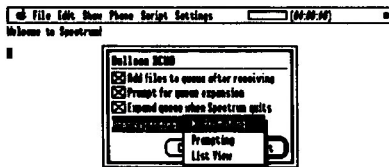
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So, how much does Balloon cost? Well, Balloon v2.0 will normally cost \$25. But, if you are a GS+ Magazine subscriber, you can get Balloon v2.0 at a special introductory price of only \$20! When you order, just let us know that you are a subscriber and include your customer number (it's on your GS+ Magazine mailing label above your name) to qualify for the special introductory price. But hurry! This special offer ends on April 28th, 1995!

To order Balloon v2.0, send a check or money order for \$25 (GS+ Magazine subscribers pay only \$20 through April 28th) in U.S. funds to: EGO Systems, P. O. Box 15366, Chattanooga, TN 37415-0366. You can also order with your Visa or MasterCard by calling us toll-free at 1-800-662-3634. Outside of North America, please call 1-615-332-2087. Or, FAX us at 1-615-332-2634. TN residents add 7.75% sales tax. System Requirements: Apple IIGS with System 6.0.1 or later, 2MB of RAM and a hard disk drive. More RAM is *strongly* recommended! Balloon was written by Josef W. Wankerl. Balloon and GS+ Magazine are trademarks of EGO Systems. ShrinkIt is a trademark of Andy Nicholas. Spectrum is a trademark of Seven Hills Software, Inc. America Online is a trademark of America Online, Inc. Apple IIGS & Macintosh are trademarks of Apple Computer, Inc.



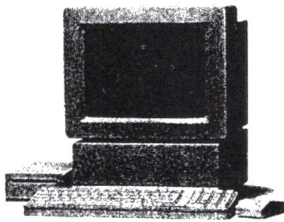
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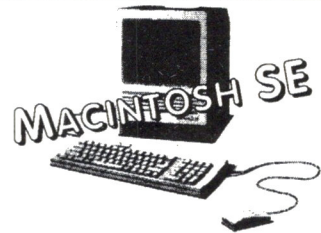
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