GS+®

September
October
1993

Volume 5
Number 1

The *First* Apple IIGS® Magazine + Disk Publication!

## Fourth Anniversary Issue!

So You Bought a Hard Disk! Now What?
AppleTalkin'
An Introduction to Object Oriented Programming
The Winners of the Cool Cursor Contest

## Reviews

Applied Engineering 3.5-inch High Density Drive
ORCA/Pascal v2.0.1• SoundMeister
TypeSet

## Plus

Updates To Cool Cursor and Anna Matrix
File Dump

# Writer's Block

By Steven W. Disbrow

### Congratulations!

First and foremost, all of us here at *GS+* Magazine want to congratulate our own Michelle Bell on her September 18th marriage to Raymond Ribaric. The bride (hereafter known as Michelle Ribaric) and groom (hereafter known as Dustin Hoffman) honeymooned in Cancun, Mexico where they were treated to a week of fun, sun, and near-death experiences. I'm told that Raymond almost got hit by a bus (didn't anyone tell him not to walk on the sidewalk?), and that Michelle almost drowned. They both almost contracted hypothermia after being caught in a rainstorm, and Michelle severely sunburned her, um, upper torso protrusions during an extended hike through the lovely Mexican countryside. Sounds to me like they got their honeymoon package the same place as President Clinton. At any rate, good luck with the marriage!

### Speaking of Which . . .

I'd just like to take this opportunity to mention that this October marks my second wedding anniversary. To celebrate, Noreen and I will be taking a second honeymoon later this year, back to the same place we took our first honeymoon, the Bahamas.

### Speaking of Anniversaries . . .

Believe it or not, this issue of *GS+* Magazine marks the start of our *fifth* year of publishing! Amazing.

### Typeset

Amazingly, TypeSet is finally out; it's been getting good reviews in all of the user group newsletters I've seen, and it's been selling pretty well to boot! Best of all, the outside reviewer we hired to review it for us actually liked it! (See the review elsewhere in this issue, and then go buy a copy! After all, I have to pay for that second honeymoon somehow!)

### Other Projects

With the success of TypeSet, we've begun to concentrate on some of the other projects that we had put on hold. As soon as this magazine is done, we might even get our back issue reprints off of the back burner.

Beyond those, we've got two other super cool new projects that we are trying to finalize. I can't tell you about them yet, but when you do find out about them, I can almost guarantee a total loss of bladder control!

### Change of Focus?

A couple of issues ago, I wrote that we were going to begin publishing more applications in *GS+* Magazine (as opposed to the accessories and extensions that we usually publish). Those plans are still on track, and you should be seeing the first of these new applications in our next issue. Two of these projects are continuations of our Scavenger series of articles: one lets you convert MIDI files from other computers for use on the IIGS, and the second is a program that lets you get to files on ISO 9660 CD-ROMs that you might not otherwise be able to use.

Of course, we'll still be publishing the occasional desk accessory and Finder extension.

### Thanks Zak!

Finally, I'd like to thank our good friend Bryan Pieterzak for giving us such a glowing write-up in the latest issue of Softdisk G-S. Normally, when we get mentioned in another Apple II publication, they mention us in passing and forget to tell folks how to contact us. But, Bryan remembered to include *everything*! To return the favor, I'd just like to say that if you like *GS+* Magazine, you'll probably get a kick out of Softdisk G-S too. If you aren't already a subscriber, you should give it a try. For more information, contact:

Softdisk G-S
P. O. Box 30008
Shreveport, LA 71130-0008
(318) 221-8718

That's all for this time! Here's a wedding picture to hold you till our next issue.

Diz

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# GS+ Magazine

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## On The Cover

Our own Bell witch shows how we come up with all the stuff in each issue of *GS+* Magazine!

Her recipe:
Tie of Wagner, Eye of Newton, Tongue of Sculley
(and a pinch of salt)

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# Letters

Dear *GS+*:
. . . I just recently read your May/June (V4.N5) issue and I found it quite informative. I would like to respond to the fact that some subscribers are upset over all the advertisements. Personally, I love the advertisements because they are my only link to Apple II merchandise. Computer stores in my area, which is somewhat rural, do not carry any Apple II products anymore. In fact Macintosh products are also hard to find. Now I'm not out in the middle of nowhere, there are dozens of computer retailers, but they are almost all IBM; so keep those advertisements rolling.

Finally, I am a soon to be college student who is a little short on funds to buy a much needed hard drive until next summer. I do have one 3.5-inch drive and one 5.25-inch drive. Some of my software, like AppleWorks GS, require that I load the System disk first before I boot. I am getting really annoyed with swapping disks every time I load. Can I put some kind of program launcher on a 5.25-inch disk to boot my 3.5-inch software programs? If this can be done, please tell me how, I am unsure of what files I can delete off the system disk so that it will fit an a 5.25-inch disk. My hope is that by placing a program launcher on a 5.25-inch disk, I will be able to limp along until next summer.

Christopher P. Barron
Stevensville, MI

*Well Chris, there is* no way *to delete enough stuff off the System.Disk to make it fit onto a 5.25-inch disk. [And believe me, we've tried! - Editor] The IIGS System software just barely has room to run on a 3.5-inch 800K disk! The only thing we can really recommend until you buy that hard drive is to run System 5.0.4 instead of System 6. Most applications will work just fine under System 5.0.4, and it's a little more forgiving to floppy-only systems. You didn't tell us how much RAM you have, but if it's under 2MB, make sure you get it up to two megs, and consider getting at least four. (For more info, see the article "The Basic IIGS" in GS+ V4.N2.) One year ago, I was in your shoes almost exactly (with a bum power supply to boot)! By getting a 4MB RAM card, a 40MB hard drive, and System 6, my IIGS became a joy to use again.—Bill*

Dear *GS+*,
A few comments regarding your advice to Marjorie B. Hale (in the July-August 1993 issue). First off, bravo on your advice to stick with and upgrade her IIGS! Some folks will forever chase after the newest thing in computing . . . while us wiser and craftier sorts will take our hardware to the edge and beyond. Keep up the evangelism!

But I do have a comment to make on your choice of printer. First off, what did IIGS users always tease early Mac users about? Color! As in, "Where is it?" So why recommend a monochrome printer? I am using a Hewlett-Packard DeskWriter 550c on my IIGS with stunning results (Vitesse's Harmonie is the software package go-between). How ironic that we finally get a printer worthy of the IIGS, *6 years* after the IIGS is introduced! It has the same 300-dpi print quality as the LaserWriter that you recommended, *absolutely brilliant color* [typed in blue - Ed.], *and it costs several hundred dollars less!* [Typed in green - Ed.] Now all of us who use BeagleWrite GS have a use for the color table. Fellow hard-core GS'ers, give this color printer your serious consideration. *You will not be disappointed.* [Typed in red - Ed.] Have faith Marjorie. My IIGS is every bit the computer that the Mac LC II I use at work is.

Okay, now I have a question. I love my IIGS . . . and I use it constantly. But now I want to know more. I've done some fiddling around in BASIC, but I know that serious GS/OS programs are best done in a more powerful language. What is the best package to learn with? I have extensive computer experience, but no formal training. Everything I've read suggests that C is the language of choice, but what do *you* recommend for the beginning programmer.

Matt Federoff
Tumacacori, AZ

*Thanks for the letter Matt. I'm sorry that I didn't mention the DeskWriter 550c, but I don't have any experience with it (although my wife is seriously thinking about buying one for her Macintosh), so I really couldn't give a recommendation for it.*

*As for which IIGS programming language to start with, I would probably recommend ORCA/Pascal and the tutorials: Learn To Program in ORCA/Pascal (see review in GS+ V3.N4) and Toolbox Programming in Orca/Pascal. All of which are available from the ByteWorks (505-898-8183)—Diz*

*GS+*:
In regards to the cover [of *GS+* V4.N6]: Some of us are *not* young males, but rather females! My aren't you being sexist! So is the next cover going to be for the women in your audience? . . . .

In regard to Your Money Matters [reviewed in *GS+* V4.N6]: We have been using this program and like it. You are frequently talking about how important it is to support IIGS products—well here one is and the summary of the review is extremely negative. Maybe part of the author's problem was having used another money program. When we switched from Publish It to Graphic Writer III, there were some very frustrating times and it took a while to adjust to it. Yes, there are some things I would like to change on YMM (like have an amortization area—we use Smart Money for that), but overall think it is a good program. Sorry to see that your reviewer didn't think so!

Otherwise, thanks for your IIGS support. We enjoy your magazine.

Randy and Patty DeGraw
via America Online

*In the immortal words of David Letterman, "It took two people to write this letter . . . ."*

*Seriously though, we felt that the cover to GS+ V4.N5 was our beefcake cover for the ladies (well, maybe it was more like beef jerky), and so we did the V4.N6 cover for all of the strapping young lads out there.*

*As for the review of Your Money Matters . . . most of the response we've gotten has been in agreement with the review (see the next letter for an example). All I can say is that while we do have a responsibility to encourage IIGS owners to support IIGS software publishers, we would be doing a real disservice to our readers if we weren't completely honest in our reviews. Just because the IIGS market is small, that doesn't mean IIGS owners shouldn't expect the same quality that owners of other computers get in their software.—Diz*

Dear Sir:
I have read your review of Your Money Matters (YMM) [in *GS+* V4.N6], and find some things omitted from it. In

addition, I agree with some of the points made.

I have searched far and wide for the "perfect" comprehensive home financial package that can track various checking, money market and savings accounts, and at the end of the year provide meaningful reports for my personal use as well as for my personal tax return. The package should [also] provide an easy method of doing bank reconciliations.

My search has taken me to Quicken, On Balance, Dollars and Sense, and finally Your Money Matters. Prior to YMM, the best program I worked with was Dollars and Sense. It provided three packages of accounts to start with, easy means of tracking many types of accounts and complete reports to be used for tax purposes. It did *not* provide multiple sorting for report purposes nor ease of adding accounts in the middle of entering new transactions.

YMM does let the user interrupt the recording of checks without leaving the register, add new accounts or recurring items, and return to the check register to finish the entries. Another great feature of YMM is the ability to do multiple sorts and print out a combined report. For example, suppose you want the complete list of medical and dental expense, drugs and medicine and insurance reimbursements paid against these items. Your Money Matters lets you list the items by themselves *or* combine them into one concise report.

I agree with the reviewer that the window scroll bars are irritating. In addition, when you are in the insert mode (entering new transactions into the check register), and then quit the insert mode, the register does not remain in the order you just finished recording them. The last may be in the middle of the page, not at the end. Going into the insert mode again does not list the checks in ascending order unless you do a needless sort first.

The reviewer commented on the lack of information in the manual. I agree. Mr. Peterson, the author, was helpful to me in getting started. He also said that he is in the process of revising the manual. (Although, no date for this revision was mentioned.)

I too encountered crashes that occurred randomly and unpredictably. That is the only serious problem I find with the program. I have been able to document some of the crashes and Mr. Peterson was kind enough to fix them and send me an updated disk.

Omitted from the review was the printer problem. The present version of the program only allows you to print out reports in the *text* mode with the Imagewriter II printer. I have the Epson printer and cannot get reports to print in text mode. I have to do one of two things: a) Export the report to AppleWorks, which is annoying and time consuming, or b) Accept the report in the very slow graphics mode. Mr. Peterson has agreed to add text printing in his next update (no date was given).

In summary, except for the serious crashes, I find the program has all the bells and whistles I have been looking for to produce any report I could desire. Hopefully, the printer and manual reference problems will be fixed. With documentation of those problems, Mr. Peterson could fix the bugs which are annoying, to say the least.

Robert G. Levy
Great Neck, NY

Dear *GS+*:
. . . Does System 6.0.1 have drivers for the StyleWriter II? . . . I ask because you didn't mention one way or the other about it in your article in *GS+* V4.N6.

Also, in one of the local computer stores, I've seen disks with collections of TrueType Fonts for Windows. Would I be able to move these fonts to my IIGS? I also have a Mac PowerBook with the Apple File Exchange program, and my IIGS is running under System 6.0.

Jim Dorigatti
Rhein-Main AB, Germany

*Sorry, but System 6.0.1 does not have a driver for the StyleWriter II. At this point, I do not think Harmonie has one either.*

*As for the TrueType fonts, I don't think you can use TrueType fonts for Windows with either the Mac or the IIGS, without first running them through a font conversion utility. My advice is to just stick with font collections specifically for the Macintosh or the IIGS.—Diz*

Diz,
I wanted to thank you for your Scavenging Infocom Games article. [This was included with our review of the Lost Treasures of Infocom Volume 1, in *GS+* V4.N6 - Editor.] Although I was very happy with the Lost Treasures of Infocom Volume 1 from Big Red, I was disappointed that the game, Bureaucracy, was not included, being a big Douglas Adams fan.

After reading your article, I went to the local Software Etc. looking for the Mac version of the Lost Treasures of Infocom Volume II, but it was nowhere to be found. However, the CD-ROM section had it. I bought it and used the university's Centris 650s to transfer the files. For your information, the IBM *.DAT;1 files work best, because the Mac files somehow have the interpreter attached to each file. I changed the filetype to $F5 and auxiliary type to $8003 like you said . . . and viola! Thanks again. A bonus is you get Arthur, Shogun and Journey for a Mac or IBM. Too bad there's no way to scavenge them. By the way, I got the CD-ROM for $30.

Micah Johnson
via the InterNet

*Glad to be of help Micah! In fact, you aren't the only reader that was interested in the Lost Treasures of Infocom Volume II. In fact, Doni Grande of Baton Rouge, Louisiana, bought it, and was kind enough to send me his list of each adventure and the version of the interpreter that you need to run it. So, here they are! (To use these games, follow the instructions outlined in last issue's review of The Lost Treasures of Infocom. Also, the reason the Mac versions are bigger is that they have the actual interpreter in the resource fork of each file.)*

*Version 3 Games (Use Lost1.sys16 from Lost Treasures of Infocom: Volume 1 to run these games)*
*Plundered Hearts, Seastalker, Wishbringer, Cutthroats, Hollywood Hijinx*

*Version 4 Games (Use Lost2.sys16 from Lost Treasures of Infocom: Volume 1 to run these games)*
*Bureaucracy, Nord and Bert . . ., Trinity, A Mind Forever Voyaging*

*Version 5 Games (Use Lost2.sys16 from Lost Treasures of Infocom: Volume 1 to run these games)*
*Border Zone, Sherlock Holmes*

*Now, having said that, I need to let everyone know a few other things surrounding this whole subject. First of all, if you buy the Lost Treasures of Infocom Volume 2 on CD-ROM, make sure that you have access to a Macintosh or a PC with a CD-ROM, because your IIGS* will not *recognize the CD-ROM! This is due to an apparent bug (which we have reported to Apple) in the High Sierra FST, which makes GS/OS unable to read ISO 9660 CD-ROMs that have spaces in the names of the disks! So, in*

*the case of this disk, which has a name of ":Lost Treasures II", you simply won't be able to get any files off of it using your IIGS! (If the name of the disk was ":Lost.Treasures.II" [note the periods] it would probably work just fine.)*

*Unfortunately, any ISO 9660 CD-ROM with spaces in its name will have the same problem. (To tell what the name of a CD-ROM is, put it in your CD-ROM drive, open up a Standard File dialog and click on the Disks button. Even though the CD-ROM won't show up in the Finder, it should show up in the list of disks that are on line.) However, Joe and I have found a way around this problem, and I'm working on a program that will let you copy files off of most of these ISO 9660 CD-ROMs. Look for it next issue of* GS+ *Magazine.—Diz*

Dear *GS+*:
. . . I have a suggestion about a series of articles I would like to see, hopefully in your magazine as it is the only one that supports those of us interested in learning more about the Apple IIGS. What I would like to really see is a series concerning one of the new features of ORCA/Pascal: Object Oriented Programming on the IIGS. Also, if you are really ambitious, you might think about something like MacApp, but for the IIGS; that would support this new feature of ORCA/Pascal.

Robert Hollingsworth
Houston, TX

*You got it! For our first article on Object Oriented Programming with ORCA/Pascal, see the article "An Introduction to Object Oriented Programming" elsewhere in this issue.—Diz*

Dear *GS+*:
I just read Bill Moore's article on moving sounds in *GS+* V4.N6. It is really great to have a comprehensive resource like this, and I plan on keeping it for future reference. However, I was surprised that there wasn't more mention of the options available with Sound Shop. For example, Sound Shop doesn't have a 64K size limit, but it does offer a "compliment" feature to 2's compliment sound files, and it also recognizes AIFF and AIFC files. Anyway, I'm sure the other programs have some unique features that they offer, and I have not spent any time with them. So that I can be better informed on all this, I'd be very appreciate of any comments about Sound Shop and handling Mac files that you might be able to send me. Thanks!

Roger Wagner
Roger Wagner Publishing

*Well, to be quite honest, Sound Shop was going to be the application I was going to primarily recommend in the article, until I got to play with Econ's DigitalSession (DS). And, the main reason I recommended DS over Sound Shop was the fact that DS allows you to work with more than one file at a time, and that DS is "expandable" (additional modules can be written to import and export files, and to change the sounds—things like Filters and Effects can be written and added). I've only seen a version .9 beta of DS, and it has some very annoying quirks. (These quirks will be expounded upon in the review of the SoundMeister board that is in this issue.)*

*Also, neither Sound Shop nor DigitalSession can directly open a Macintosh Sound resource file (Mac filetype "sfil"). Only MacSoundGrabber (MSG), to my knowledge, can open these files directly. (Unless, perhaps, there is a new version of Sound Shop that can that nobody has told me about.) In fact, no program, except MSG, can open an HFS resource file—this includes Mac Hypercard sounds. Although sounds that have been stored in the data fork are no problem.*

*Don't get me wrong, I like Sound Shop a lot, and said so in the article. But it does need some additions if it's going to keep pace with DS. Primarily, I feel that the user needs to be able to work with multiple files, which the current version of Sound Shop doesn't allow. (I have version 3.14.) Also, with the release of the HFS and MS-DOS FSTs, users are going to be moving sounds over from these platforms to their IIGS. I feel you need to write the functionality of MacSoundGrabber into Sound Shop (i.e., make Sound Shop able to open a Mac resource file to get sounds.) In fact, it would be possible to make a sound application on the IICS that can automatically import sound files from the Mac and the PC very easily. As I said in the article, PC .WAV files are seen by the IIGS as plain data files, once they're converted. A properly written program could do the conversion for the user, saving a step. The same goes for sound files in the data fork on a Mac—filetypes like FSSD can be directly imported into Sound Shop. (This was also mentioned in the article.) The problem is sound data stored in a resource fork, whether it is an sfil or a HyperCard sound. Someone needs to provide a way to let the user open these files directly.—Bill*

Sir or Ma'am:
I recently ordered a trial issue of your magazine (disk and magazine), and I was pleased with what I saw. I was encouraged to see such interest and support for the IIGS still present. Enclosed, you will find my check for $36 for a year subscription to the magazine and disk . . . .

My only regret is that it took me this long to hear of this magazine, and if I have not, there are probably many other *frustrated* IIGS users out there who haven't heard of you who should.

All I can say is keep up the excellent work, *and scream a little louder*! I finally heard of you and subscribed almost immediately. I'm sure there are many others who would follow me too . . . once they hear of you.

Once again . . . *Bravo!*

William J. Tripp
Troy, AL

*Thanks for the letter William. I'm glad we were finally able to find you! Your point is well taken, and we are doing everything we can to scream as loudly as possible that we are here. However, with all the mailing lists we buy, most of our new subscribers still come from word of mouth, so please be sure to talk us up to your fellow IIGS owners!*
*Diz*

If you have a question, comment, or criticism about *GS+* Magazine, we want to hear it! Due to space limitations, we cannot answer every letter here in *GS+* Magazine.

*If you want a personal reply, please include a daytime phone number, or enclose a self-addressed, stamped envelope with your letter.*

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# I fired *InCider**

Dear Apple II Enthusiast,

*InCider* magazine has gone the way of the dodo bird. But I haven't! I'm Cindy Field. And I'm pleased to be able to offer you a special deal on ready-to-use templates for **AppleWorks GS, AppleWorks 3.0**, and **Publish It!**

Originally sold by *inCider* for a princely sum, my templates can still help you get the most from your Apple II. Except now you'll have money left over to spend on other great products mentioned in *GS+*. Or maybe take the kids to a fast-food joint for burgers.

Either way, each of these Apple II packages includes a disk with ten templates and ready-to-run samples. Templates are word processing, database, spreadsheet, or desktop publishing files that are set up and ready to go. All you have to do is customize them for your own use. Each template package comes with clear documentation, either on disk or in booklet form. Those who have read my articles in *inCider* know that muddying the waters just isn't my style.

Neither is shortchanging folks. That's why I guarantee you'll be satisfied with the template packages you order through this ad. If one of my products doesn't live up to your expectations, return it within 30 days for a prompt, courteous refund. (Sorry, shipping and handling charges are not refundable.)

Hope to hear from you soon!

Cindy

* OK, so I didn't exactly "fire" *inCider*. It was kinda the other way around. But these templates are still a great deal. Order today!

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# So You Bought a Hard Disk . . . Now What?

By Bill Moore

"OK, OK! I'm tired of you pinheads yelling about hard disks!" you bellow, and to shut us up, you buy a hard disk to enjoy the full benefits of modern software like System 6.0.1. Congratulations! (And if you don't have one, *BUY A HARD DISK!*) No peripheral you buy for your Apple IIGS will be more useful to you than a hard disk. The combination of speed and storage capacity will make you wonder how you managed without one. However, after years of using just floppies, you've probably developed some bad habits that are going to have to be unlearned, otherwise the only thing you're going to put on your new hard drive is a huge mess. With this article, I'm going to show you what needs to be done to keep life with a hard disk sweet and fun.

The difference in storage capacity between a floppy disk and a hard drive is like comparing a drinking glass to a fifty-five gallon barrel. Even the smallest hard disks (usually 20MB) will store as much data as over twenty-five 800K 3.5-inch floppies. And larger disks (such as a 240MB model that I'm casting a covetous eye at) will hold many times that amount (in this case, as much as three hundred and seven floppies!) If you've been a floppy-only person up until now, this can seem a bit overwhelming, but I'll do my best to help. Well, go unpack your new hard disk and let's get busy!

### As the Partitions Turn. . .

If you have a hard disk that's larger than 32 Megabytes, you're going to have to subdivide the disk into chunks small enough for ProDOS to handle. (ProDOS can only work with devices 32,768K in size or smaller.) This technique is called *partitioning*, and it makes your IIGS see that 100MB hard drive as two 20MB disks and two 30MB disks. Of course, that's just an example—you can set as many partitions as you want, and they can be of whatever size you wish. One thing to remember, though—partitioning is an irreversible step. If you repartition a drive, you lose *all the data that was previously on the disk*!! *Don't* repartition a drive unless you've backed up the drive completely, or don't care about the data you'll lose. This is why it's important to think about how you're going to use your hard drive, because once a drive is partitioned, it can't be easily changed.

What do I do, you ask, if my hard drive shows up from the factory already partitioned, with the System software already installed and oodles of programs already on the disk? In most cases, the factory partitioning scheme should work for most users. The decision to partition is the first of many judgement calls you're going to have to make. An exception to this (obviously) is when you buy a hard disk formatted and set up for the Macintosh. In this case, you can repartition without fear of losing any data (at least, data that the IIGS cares about). We'll delve a little deeper into the logical use of partitions later.

### ProDOS or HFS?

With the release of System 6, Apple introduced IIGS owners to the world of HFS, the file system used by the Macintosh line of computers. This created a quandry for IIGS owners. HFS offers unlimited disk size (no 32MB partition size limit like ProDOS) and wonderful versatility in naming its files. Trouble is, you can't boot your IIGS from an HFS partition, and ProDOS 8 programs will not work with (or on) an HFS disk. ProDOS, which limits you to a disk size of 32 MB, and filename lengths of fifteen characters, works fine with 8-and 16-bit applications on your IIGS. Deciding whether or not to use HFS is a personal choice. If you're going to be working with 8-bit programs like AppleWorks Classic (and some of the flakier 16-bit programs, like America Online), then keep adequate space in a ProDOS partition to handle your needs. A properly written GS/OS application shouldn't care what kind of partition it's on.

If, you decided to go with an HFS setup, a possible way to go would be to set up a small (say, 10MB) boot partition that's ProDOS. Then, you'd set up another partition that you'd format as an HFS disk. You have to set up the ProDOS partition, because the IIGS currently must boot from a ProDOS disk.

### Data Management

The most important lesson you'll have to learn when working with your new hard disk is how to keep everything organized in an orderly manner. Without some foresight and planning, you'll wind up not having any clue where things are on your hard disk, and you'll have megabytes of space wasted on redundant files. Most older programs for the IIGS had no Installer included, so folks would just copy the disk over to their hard drive, resulting in several files being copied over that weren't needed, such as a duplicate **System** folder—sometimes in several places on the same disk! If a program doesn't have the Installer included, it usually gives very specific hard disk installation instructions, or at least a list of files that are absolutely necessary for a program to work. Sometimes, you just have to figure out what files are needed by a program by trial and error. Check the manual of your programs. Later in the article, I'll discuss my idea of good disk management.

### Dave Folderman—Your Hard Disk Friend

The first and simplest concept to understand about using a hard disk is the fact that you need to place things in different folders—sometimes even nesting things in several layers of folders. If you've only used floppies up to this point, you might be saying "What's a folder?" Put simply, a folder is like a real file folder—you place documents into it to keep things tidy. The difference between a computer folder and a real folder is that a computer folder can hold anything: documents, applications, additional folders, datafiles, sounds, etc. For example, let's take a look at the Figure, which is a screen shot showing the primary data partition on my hard drive, called Spock. (The boot volume is, appropriately enough, called Kirk.) Notice how everything in the main directory is a folder. There's a good reason for this: since a ProDOS disk can only have 51 items in the main (root) directory, I'd rapidly run out of directory space if I *didn't* place things in folders. Also, by placing everything in folders, my data and programs are stored in a much more logical manner. (Yes, the pun was intended, Trekkies.) HFS volumes do not have the 51 item limit, but it's still a very good idea to manage data using this protocol. By storing your programs and data in logically arranged and named folders, you stand a much better chance of remembering just where in the world everything is.

### Data, Data Everywhere

Another important thing to do is to set up your new hard drive so that data files are kept separate from your programs—certainly in their own folder, perhaps in their own partition. Don't think you'll have a lot of data files? Heh,

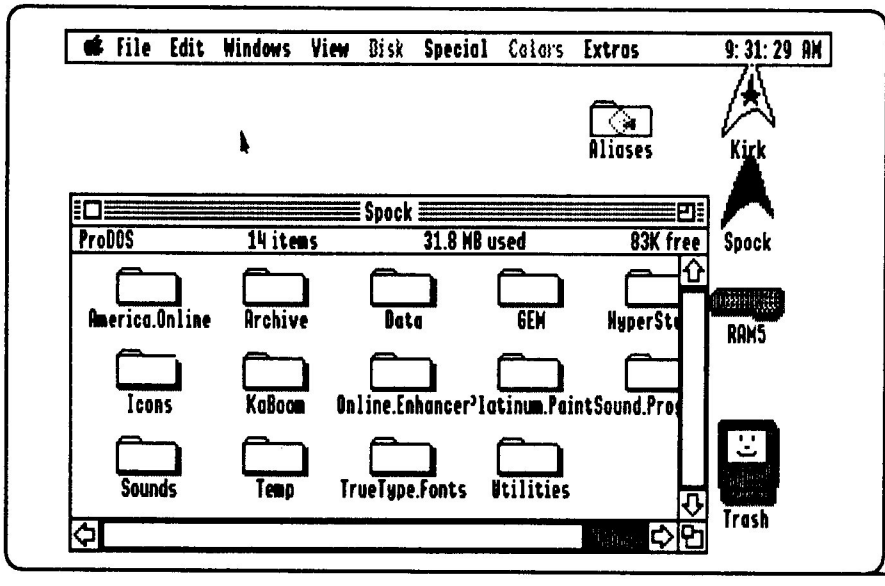
heh . . . foolish mortal. In less than three months, I filled my 40MB hard drive, and at least 70% of the files were data files! To me, it is *essential* to keep files like this in their own, separate area, primarily to make backups easier. This also keeps you from having to hunt all the way through your hard drive to find a file. For example, you might make a partition named **Data**, then place various folders in the partition to store various kinds of data files, such as **AppleWorks**, or **Budget.1993** In other words, store the data to fit the way *you* work. These are just recommendations, and as such, are not cast-in-stone. A very helpful aid for this was included in System 6—a new desk accessory (NDA) called **Find.File**. Calling up this NDA presents you with options asking you what you wish to search for, and where you want the computer to look. This is a good way to find, say, all files that include "1993" as part of the filename. FindFile only works with filenames, by the way. It won't search for a particular passage of text inside a file, for example.

Another useful tool to keep things neat and organized is the Finder Extension **EasyMount**, which was included with System 6.0.1. This program has been around since System 6.0, but it was expanded when 6.0.1 was released. Easy Mount allows you to create *aliases*, which are small files that "point" to applications, disks, or folders. This way, you can set up a folder with aliases and keep it on your desktop to open your most frequently used programs folders, and files. For more info on Easy Mount, see Steve's article "System 6.0.1—For Users" in *GS+* V4.N6.

In addition to your new hard drive, there's one more thing you'll need to buy that's just as important as the SCSI card—a hard drive management utility. With several good programs out there at reasonable prices, there's simply no reason not to have one. And you have a fairly good array of choices, too. Apple offers Archiver, a backup and restore-only program that comes with System 6.0 and 6.0.1. Econ offers Universe Master (reviewed in *GS+* V4.N2), the heavyweight in the category. Vitesse offers the former champ, Salvation: Supreme. (Vitesse is working on upgrades to the Salvation series, so consider Supreme to be like George Foreman: a former champ in training for a comeback. We've never reviewed all the Supreme products at one time, but separate reviews can be found in our back issues. The most recent, Deliverance, was reviewed in *GS+* V4.N4.) And finally, Glen Bredon offers ProSel (see *GS+* V4.N3), a non-standard program that probably offers the most options of the four. I'm not going to spend time talking up the good and bad points of each of these, mainly because they have all been reviewed at one time or another in previous issues of *GS+* Magazine. But get at least one of them. Each package offers many features that you will need sooner or later working with a hard disk, such as backup utilities.

### Did Someone Say Backup?

Funny I should mention that, because backup is one of the most important things you need to do to your hard drive, *on a regular basis*! I've found backing up a hard drive to be like flossing—everyone means to do it, but few actually do. The first time your disk crashes horribly and you lose megabytes of important data that's not backed up and can't be easily recreated, you'll learn. I'm trying to keep you from a lesson by the sternest of all teachers, experience. Even a close call (such as one I had recently when the Finder wrote a corrupt **Finder.Data** file), can make an atheist learn to pray (or drive a priest to drink). Later, we'll discuss the basic options you have for devices to backup data on.




### Optimus Prime

Another regular thing for your "to do" list: file optimization. It's a curse of most modern operating systems that, most of the time, files are not written to the disk all in one place. To use Steve's example from his review of Salvation: Renaissance (*GS+* V2.N2), "...suppose you are working with a file that is 15K in size. You try to save the file, and the first block of free space on the disk you are saving on is only 12K big. The operating system will write out 12K worth of information, see that it is out of room, and then find the next free space on the disk, which may or may not be big enough to hold the remaining 3K of your file." Enough of this, and your hard drive spends more time shuttling back and forth between disjointed segments of data rather than doing any real work. This is known as fragmentation, and it'll happen to you, too. (**Important:** Do file optimization *only after* backing up your hard disk! You also might consider running a repair utility [such as Deliverance] to ensure your disk is in good shape. If an optimization program encounters a bad file, it usually hangs and leaves a mess on the hard drive.)

### What About Other Maintenance?

Aside from file maintenance, about the only other thing you need to do is keep your drive fairly clean, allow adequate room for air circulation, and keep any ventilation holes clear. We're not practicing what we preach here, but other things (such as pets), or activities (like smoking), should be curtailed around the computer. Stuff like pet hair and/or smoke can be detrimental to computer equipment. Today's typical hard drive is incredibly reliable, with factory burn-in standard. Drive failure is very rare, and with most drives having a Mean Time Between Failures (MTBF) of around 60,000 hours, you could run your hard drive eight hours a day, five days a week, fifty weeks a year for thirty years! If you turn on a hard drive and use it continuously until it failed, it probably would still run for seven years!

You have several options for devices to backup your data. The slowest, but cheapest, option is your trusty 800K 3.5-inch disk drive. With a small hard drive and compression of the archived data, you just might be able to backup to floppies and escape with your sanity somewhat still intact.

The best options, in my, somewhat, humble opinion, are removable hard drives. In this arena, there are two options. The SyQuest drives are very reliable hard drives in their own right (we use two 44MB drives here at the office, and a Machead friend of mine uses one as a primary hard drive). Because they are removable devices, they are also perfect to do double duty as a secondary hard drive, as well as back up your primary drive. SyQuest devices are available in a variety of sizes, ranging from 44MB through 105MB per cartridge.

Another device that can perform as a second hard drive, as well as a high density disk drive, is the new floptical drives that have burst upon the scene in the past year. With the ability to store 21MB of data on a single 3.5-inch disk, plus the ability to read, write, and format 1.44MB disks in ProDOS and HFS, (plus read 720K and 1.44MB MS-DOS disks), these devices are mighty tempting for a second hard drive. In fact, when I can afford one (not anywhere in the near future!), I'll be plunking down some cash for one of these little jobbies myself.

The last option on this list is the traditional tape drive. Although attractive in price (I've seen Apple 40MB tape drives advertised for as little as $149), these can *only* be used for backups. Also, tapes use a sequential system during backup, making it a royal pain to restore individual files. (Imagine the difference between a compact disc and a cassette tape to illustrate the difference between hard disks and tape cartridges. Just as it's harder to find a certain song on a cassette, it's harder to find an individual file on a tape cartridge.)

### An Example...

Now we'll try this out hypothetically. John Q. Apple has just bought a shiny new 100MB drive for his Apple IIGS. He decides to partition his drive into a 10MB ProDOS boot volume, a 40MB HFS partition, and two 25MB ProDOS partitions. The HFS partition will store his 16-bit data (sound files, clip art, Teach files for EGOed, and GWIII files), and his stable GS/OS programs. One of the 25MB volumes will hold his flaky 16-bit apps, and his 8-bit programs and data. He's keeping the other partition formatted but unused for now, allowing him to expand into it when he's ready. He's using EGOed and GraphicWriter III to write his Great American Novel. He backs up his data religiously. He uses Universe Master to keep everything organized, and he backs up regularly. [Editor's note: *GET THE HINT?!*] In this example, we've shown how a user can set up their hard drive to keep things arranged today, and to logically expand into the remainder of the drive later.

### (Hard)ly the End

Well, that should give you enough basic information so that you don't leave things in a huge mess on your new hard drive. If something sounds unfamiliar to you in this article, check out the sidebar "Hard Disk Glossary" or the **Glossary** file on your *GS+* disk. If you're *still* in the dark, I'm available for help online. Just E-Mail me at **BilMo** on America Online (preferred), **BilMo@AOL.com** on the Internet, or **BILL.MOORE** on GEnie. AOL users can leave a message for me in the *GS+* Magazine section on AOL (Keyword GSMAG.) If you don't have online access, feel free to write or call me at *GS+* ((615) 843-3988; remember that the 800 number is orders only). *GS+*

# A Hard Disk Glossary

### Cache RAM

Cache RAM (sometimes referred to as a "RAM cache" or just a "cache") is a small block of RAM where a copy of something is kept. Frequently accessed items are kept in cache RAM so that the system can retrieve them faster. Exactly what is kept in a RAM cache depends on what you want to speed up. For example, in a disk cache, frequently accessed disk blocks would be kept in the cache RAM so that the operating system could retrieve them without actually having to access the disk.

### File System Translator (FST)

File System Translators allow GS/OS to access different types of diskettes. At this point in time, FSTs exist that allow GS/OS to access ProDOS disks, High-Sierra CD-ROMs, Macintosh HFS disks, MS-DOS disks (read only), and AppleShare file servers.

### Hierarchical Filing System FST (HFS FST)

This is a File System Translator that allows GS/OS to access Macintosh disks. The name of the Macintosh file system is the Hierarchical Filing System, thus the abbreviation HFS FST.

### Partitioning

The act of splitting one hard disk into several smaller chunks, called partitions, that your IIGS will see as separate disk drives. Partitioning is required if a hard disk larger than 32MB in size is hooked up to an Apple IIGS, due to the fact that the boot disk ***must*** be a ProDOS disk, and a ProDOS volume cannot be more than 32 MB in size.

### SCSI Device

A SCSI device is any device that uses the Small Computer Systems Interface (SCSI) to talk to other devices.

### SCSI Terminator

Like all other computer equipment, SCSI devices communicate with each other using electrical signals. When these signals come to the beginning or the end of the chain of SCSI devices, they need to be stopped, or they can "bounce back" to the other end of the chain and confuse the other SCSI devices. The job of a SCSI Terminator is to stop those signals before they can bounce back. Both the first and last device in a SCSI chain should have terminators. Devices in the middle of the chain should not have a terminator.

Some devices are internally terminated (that is, the terminator is inside the device case),while others require an external terminator to be attached to one of the devices external SCSI ports. The best way to tell if a device is internally or externally terminated is to check the manual that came with it.
(Also see "Small Computer Systems Interface" below.)

### Small Computer Systems Interface (SCSI)

Put simply, the Small Computer Systems Interface is a standardized way for computers to communicate with peripherals (hard disks, scanners, etc.) Because it is a standard, a single SCSI device can be used on many different types of computers. For example, most SCSI hard disks can work "out of the box" with both the Macintosh and NeXT computers. With the appropriate SCSI adapter card, the same drive could be used on a IIGS, IIe, Commodore Amiga, or IBM PC clone. The SCSI standard also allows devices to be be daisy-chained together so that you can have more than one SCSI device online at a time.

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# Apple (Jive) Talkin'

By Josef W. Wankerl

Actually, the other working title for this feature was "Putting your Apple IIGS computer (and other things such as printers and file servers) on an AppleTalk network," however that was a bit large to fit at the top of the page. If you're in the least bit interested in networking your IIGS, then this article is for you. If networking scares you, then this article is for you. If you could care less about networking and you think this article is junk, then you can probably just turn the page and I won't be offended (well, not too much).

### Who Should Network

Before I go into what networking is and what you need to do it, I first want to address the types of people who should be interested in putting their equipment on a network. These are the people who have: more than one printer or more than one computer. That's right, if you have more than one, chances are you're a prime candidate for setting up a network. How would you like to be able to print a document on any printer you own without shuffling cables? How would you like to be able to transfer a file from one computer to another effortlessly? If you answered "I would!" to either of the previous two questions, then good! Networking is what you're looking for.

### Why Networking Is So Cool

The reason people create networks is exactly for the two reasons mentioned before: the ability to share information between computers, and the ability to print a document on any printer on the network. Of course there are a lot more reasons for networking, but as a IIGS owner, you're probably only interested in these two prime aspects of networking. Just imagine this: You sit at your IIGS, type up a document in EGOed, then print out a rough draft on an ImageWriter II. You look over the printout, make a few changes, then print out a final copy on a LaserWriter. You then put the file up on a file server where it is instantly accessible to anyone else on the network. Any other computer on the network can read the file, make changes, print it to any printer on the network, and then save it back to the file server for anyone *else* to play with. This is way cool.

### Some Terms You Need To Know

Before you delve into the dark hidden secrets of networking, you'll probably want to take the foreign language course so you can talk like a pro. OK, here's Networking Lingo 101 by Professor Joe:

### Network Lingo 101

| | |
|---|---|
| **AppleShare** | AppleShare is the program that runs on a Macintosh computer that enables file sharing to take place. AppleShare is a $1000 program. |
| **AppleTalk** | AppleTalk is the networking protocol built into every Macintosh and Apple IIGS computer. It describes how two devices can talk to each other over physical connections such as LocalTalk or EtherNet. |
| **EtherNet** | EtherNet is a means of connecting two devices together. This comprises the physical hardware of coaxial cables and the like. EtherNet is a very fast connection medium. |
| **File Sharing** | File sharing is the ability to exchange files between two computers. The AppleShare program that runs on the Macintosh, as well as the personal AppleShare software built-in to Macintosh System 7, enables file sharing to take place. |
| **LocalTalk** | LocalTalk is a means of connecting two devices together. LocalTalk is built into every Macintosh and Apple IIGS computer. LocalTalk is not as fast as EtherNet; however, since LocalTalk comes out of the box with your IIGS and most other Apple products, it is widely used. |
| **PhoneNet Connector** | A PhoneNet connector uses standard RJ11 (telephone) wire to connect two connector boxes together. A PhoneNet connector is part of LocalTalk. |
| **Printer Sharing** | Printer sharing is the ability for a single printer to be accessed by multiple computers. |
| **RJ11** | A RJ11 cable is a simple telephone cable that you can buy at any Radio Shack or K-Mart. If you're using PhoneNet connectors and RJ11 cable, make sure that you get cable that has *all four wires* connected. Some cables only have the inner two wires (and are cheaper). These will not work since PhoneNet connectors use the outer two wires to connect two devices together. The phone lines in your house use the inner two wires for phone lines. This means that you can (surprise) run your phone and your AppleTalk network on the same telephone lines! You can also run your AppleTalk network through the phone jacks to route your network from one room to another without running a dedicated cable from room to room. Be careful, though, because if your signal has to travel too far it will become too weak to receive. |

### Net Connectors

To connect devices together on a network you need connection boxes and cables to tie all the connection boxes together. In the old days, the connection box was supplied by Apple—it was a box with two ports where you could connect cables similar to the one you'd run to an ImageWriter II. The connection boxes were expensive. The cables were expensive. To set up a network, you had to spend a lot of money just for connections. Luckily there's a better solution: using standard RJ11 wire (the kind that you attach to your everyday ordinary telephone—*very* inexpensive). When you use RJ11, you also get to use a non-Apple (PhoneNet) connection box. The box will still have two ports where you can connect the cables, but the box itself will be a lot cheaper than Apple's. One thing you have to be careful with when using RJ11 wire is the number of wires present in the cable. RJ11 cable contains four wires. The telephone system only uses the inside two wires—the outside two wires are not used at all (unless you have a two line phone). The PhoneNet connection box uses the outside two wires to carry the AppleTalk signals. Some RJ11 wires were meant to be used only with one line phones, and to cut costs, the outside two wires are not present. Do not use these kinds of wires. The only other thing you need to worry about with PhoneNet connectors is whether they're self terminated or not. Usually the more expensive connectors are

self terminating. This means that you can plug one RJ11 wire into the connector and leave the other socket in the connector empty. If the connector is not self terminating then it cannot have an empty socket. You either have to have two RJ11 wires in the connector or one RJ11 wire and a terminating resistor plug. A terminating resistor plug looks like a RJ11 connector with a resistor sticking out the end instead of a telephone cable

### Setting Up A Network

Now for the fun part: actually setting up a network. All you need is a couple of connection boxes, a couple of cables, and a couple pieces of equipment to put on the network. For this simple example, I'll show how to connect two Apple IIGS computers and an ImageWriter II printer together with a network. First I'll give you the theory, then I'll give the concrete example. Now for the theory: the simplest AppleTalk network (the only case I'll describe) is a daisy chain. You need at least two devices to form a network. You put a connection box on each device and then connect the connection boxes together with a cable (see Photo 1). To connect another device, just put a connection box on the new device, and then connect the new device to the connection box at either end of the network (see Photos 2 and 3). Now for the example: For this example, you'll first need two IIGS computers and an ImageWriter II printer. You'll also need three (one for each item that will be on the network) connection boxes and two (total number of items on the network minus one) cables to connect the connection boxes together. The final piece of equipment you'll need is LocalTalk option card for the ImageWriter II printer because the ImageWriter II does not come out of the box with AppleTalk capability. First we'll do the easy part: connecting the IIGS computers. Here's how you do it, step by step:

1) Plug a connection box into the printer port of the first IIGS
2) Plug a connection box into the printer port of the second IIGS
3) Plug one end of a cable into the connection box on the first IIGS
4) Plug the other end of the cable into the connection box on the second IIGS

That's all there is to it. Pretty simple, huh? Now for the hard part: connecting the ImageWriter II printer to the existing network. OK, here's how that goes, step by step:

1) Install the LocalTalk card in the ImageWriter II printer (the difficult part)
2) Make sure the DIP switches on the printer are set for AppleTalk (SW2-4 must be closed)
3) Plug a connection box into the ImageWriter II
4) Plug one end of a cable into the connection box on the ImageWriter II
5) Plug the other end of the cable into one of the connection boxes connected to a IIGS

Difficult? I didn't think so. If you want to add another device to the network, just plug a connection box to the new device and then plug a cable between the last device in the current network and the new device.

### Net Worth

So it looks like you're going to have to purchase connection boxes, connection cables, and LocalTalk option cards for ImageWriter II printers, right? Absolutely correct. For every device you're going to put on the network, you're going to have to get a connection box and a connection cable. Connection boxes usually run from $12 to $30 and you can pick up standard RJ11 telephone cable at any quality store for just a few dollars. LocalTalk option cards for ImageWriter II printers will run you about $100 or so. That's relatively cheap compared to setting up networks for other computers.

### Configuring Your IIGS

OK, even though you have your IIGS physically on the network, you really can't do anything with it yet. You need to tell your IIGS that it's actually networked. The first thing you need to do is change your slot settings using the control panel. If you have a ROM 01, change slot 1 from "Printer Port" to "Your Card," then change slot 7 from "Your Card" to "AppleTalk." If you have a ROM 03 you have a bit more freedom of slot settings in that you don't have to change slot 7—all you need to do is change slot 1 from "Printer Port" to "AppleTalk." If you want to, you could use slot 2 instead of slot 1, and then instead of plugging the connection box into the printer port, you'd plug it into the modem port. Most likely you'll want to use your modem port for a modem, though, and so the printer port is the most logical choice. Also, since all your printers are going to be on the network instead of directly connected, it makes even more sense to use the printer port.

Now that your IIGS knows it's on a network, you need to install a bit of software to take advantage of the network. Of course you'll want to use the System 6 (or 6.0.1, or even 5.0.4 if you haven't upgraded yet but are going to as soon as you possibly can [hint, hint!]) Installer program. With the System 6 (or 6.0.1) you'll want to do a custom installation.

If you want to use file sharing (discussed a bit later) then you'll want to select the AppleShare installation. If you want to simply share printers, you'll select the type of printer you want, but you want the AppleTalk version. For example, "AppleTalk: ImageWriter" for a networked ImageWriter II printer. If you have a laser printer there is only one installation script, "LaserWriter," which is automatically a network installation. You'll probably also want to read up on chapter 12 of the *Apple IIGS System 6 User's Reference* which describes networking your IIGS.

After you've installed all your network software, reboot your IIGS. You'll get a new dialog when you boot asking you to name your IIGS. Each device on the network must have a unique name. Just give your IIGS a good name (perhaps your name?) and then the boot process will continue. After you have named your computer, you never have to name it again, unless you want to change its name.

### Printing

Now that you have your AppleTalk network set up and you have all the network software installed on your IIGS, you probably want to see if you can print something over the network. First make sure your printer is plugged it, turned on, and is online (the three most common cases for printing not working). Next you'll want to choose the printer you want to print on. With a directly connected printer, you used to use the "DC Printer" control panel to choose the printer driver and the printer port to print on. With an AppleTalk printer, you use the "Net Printer" control panel (or the "LaserWriter" control panel in System 5.0.4) to select the printer you want to print with. Once your printer is selected, all you have to do is print like you normally would with a directly connected printer.

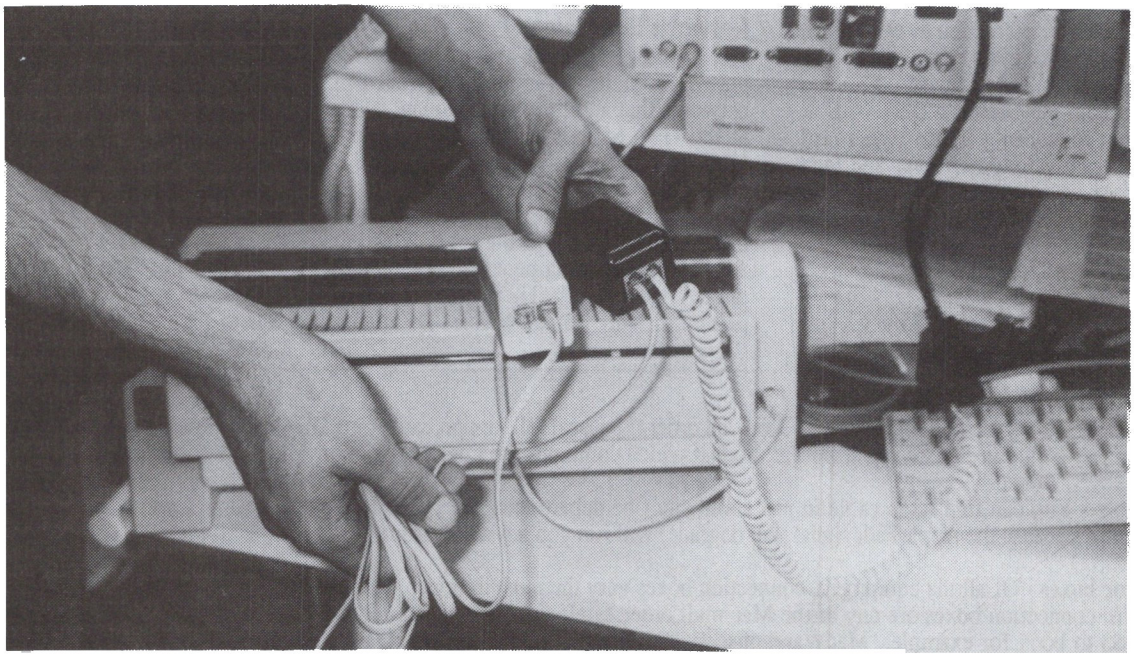
### Using File Servers

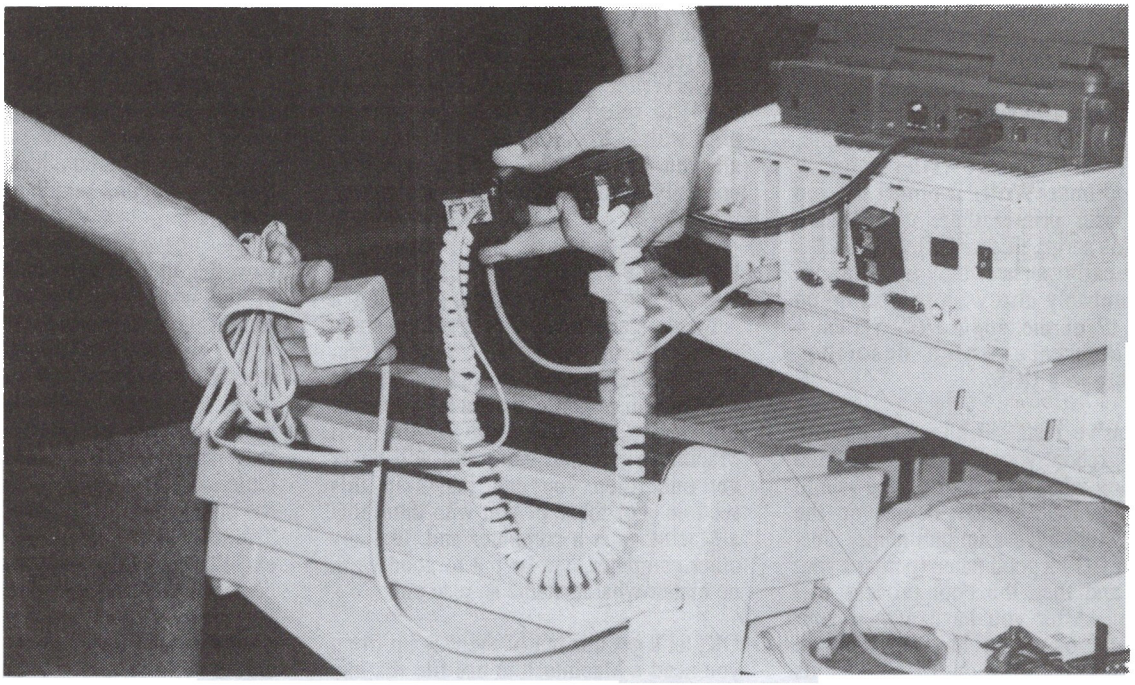
One of the most fun parts of using a network is accessing file servers to share files among multiple computers. Unfortunately, if you want to use file servers, you're going to need a Macintosh. For those of you who think that Macintosh is a bad word and will never get one, then you can just skip this section. For those of you who think that a Macintosh is a computer and, like any other computer, can be put to good work no matter what its name is, read on!

OK, let's get this out of the way up front: you need a Macintosh to use file sharing. Why? Because Apple says so. Why else? Because nobody has written file sharing software for the IIGS. (There are a few rumors out there that say that Apple actually had file sharing software written for the IIGS but it was too slow. Other rumors are along the lines that Apple didn't want the IIGS to compete with the Mac in the file sharing arena. You can pick your favorite. The fact remains that there isn't any software.) If you're a programmer and feel this is wrong, then by all means, go ahead and try to write some file sharing software for the IIGS! If you do, I'm sure that *GS+* Magazine will pay you a bundle for it! (Believe me, I've tried my hand at writing some extremely simple AppleTalk code, and while it's not really all that difficult, it's no romp in the park, either. You have my sympathy if you try to write a file server! Let me know if you try, though, I'll give you all the help I can, which probably isn't much.)

Now that the "why Macintosh" part is out of the way, let's get to the fun part: setting up a file server. If you're crazy, you'll go and spend $1000 for dedicated AppleShare software for the Mac. Don't do it. That's just plain stupid unless you really, really, *really*, need the flexibility and speed of a dedicated server. Otherwise, just get System 7. System 7 has built-in personal AppleShare software. The manuals for System 7 have an excellent section on how to set up a personal file server—just follow along. Of course, you have to put the Macintosh on the network. Once the Macintosh is on the network and you have file sharing turned on, then the fun begins!

Go to your IIGS and pull up the "AppleShare" control panel. (You don't see an "AppleShare" control panel? You forgot to install AppleShare—launch the Installer and select the AppleShare script to install all the files necessary for you to use file sharing and reboot.) Select the file server you want to connect to and click on the OK button. A new dialog will appear asking your for your password. Once you've given your correct password, a final dialog will appear showing you all the available shared





volumes. Select the ones you want to mount (and check the boxes next to the ones that you want to automatically mount when you reboot) and then click on the OK button. If you're in the Finder, you'll then see your selected volumes appear on the desktop. You use them just like you would any other hard drive. However, an AppleShare volume is special: multiple users can access it simultaneously. Go to another IIGS on the network, mount the shared volume, and then have some fun! Create a file on the server, go the the first IIGS, and then read it in. Change it. Save it out. Go back to the other IIGS. Read in the changed file. Maybe print it out. Fun, huh? OK, now get this: go to the Macintosh. If you're just working with a plain text file, the Mac can play with it, too! If you're working with a HyperCard stack, you can run HyperMover and then run the stack on your Mac. Of course GIF files work great on the Mac, too.

### Maintaining A Network

Maintaining an AppleTalk network is extremely simple. Once you've got everything plugged in you can pretty much leave everything alone. The only time you'll need to touch the network is when you want to add a new device to the network or when you want to remove a device from the network. Removing a device from the network is simple. Just unplug the connection box from the device. Your network will still function properly even if a connection box is not plugged into a device. If you want to remove the connection box from the network, just connect the two connection boxes on either side of the connection box you're removing together.

### Network Examples

Just to show you some examples of a few networks, here's a couple of real-life networks that are in existence today. Here at the *GS+* Magazine offices, we have a fairly extensive network. There are four IIGS computers connected to two Macintosh computers (one runs the customer database and the other is acting as a file server using personal AppleShare under system 7). There are also two printers: an ImageWriter II and a LaserWriter IINT. Sometimes I'll bring in my PowerBook from home and just daisy chain it on to the existing network—great for taking my work home with me. Speaking of home, at home I have a rather groovy setup: two PowerBooks, two IIGS computers, and two ImageWriter II computers. Hopefully I'll add a Newton MessagePad on there before long. Half this setup is my personal equipment and the other half belongs to my roommate, but it's pretty fun sending printouts to his room. We can share new files we download from online services via file sharing, too.

### Butterfly Net

OK, so I'm not really going to say anything about butterflies. I just thought it was a cute name for a heading. And, like a butterfly collection, setting up a network in your home can impress your friends and family. For effect, you can throw some bare wires around the room, mess up your hair, and put some baking flour on your face. You're the only one that has to know how painless it actually was to set up. *GS+*

## Network Supplies List

**ImageWriter II/LQ LocalTalk Option** - You can order the LocalTalk option card from The Apple Catalog (1-800-795-1000) for about $120. Quality Computers also sells a similar product which combines the LocalTalk option with a 32 printer buffer.

**RJ11 cable** - You can find RJ11 cable in just about any fine department store. Small lengths of cable ( you won't want extremely long cable lengths because the AppleTalk signal will degrade) will run you anywhere from $2 to $3.

**Connector boxes** - Of all the equipment, connection boxes vary the most in price. You can find a box anywhere from $12 to $30. Good sources fro connection boxes are any of the Mac mail order catalogs. Most Mac mail order firms will also give you overnight shipping for only $3 to boot, for example: MacWarehouse (1-800-255-6227). It's a good idea to shop around for connection boxes since prices vary so much.

# GS+ Back Issue Information

### Sep-Oct 1989 (V1.N1)

- System Software 5.0 Compatibility Chart
- NoDOS - A file utility New Desk Accessory
- Graphics Galore - Drawing "how-to" with pictures on disk
- Reviews: Arkanoid II (new custom levels on disk), Crystal Quest, ORCA/C, Rocket Ranger, Silpheed, Test Drive II, TransWarp GS, Turbo Mouse ADB

### May-Jun 1990 (V1.N5)

- AppleFest Report
- Beginner's Guide to System Disks - Part 1
- GS/OS prefixes - PreFixer CDev
- Brush with Greatness - How your IIGS makes colors
- Reviews: CMS 45MB Removable Hard Drive, S&S-RAMCard, DataLink Express modem, Visionary GS digitizer, GraphicWriter III, ZapLink, McGee, Math Blaster Plus IIGS, The New Talking Slickybear Alphabet, ZipGS

### Sep-Oct 1990 (V2.N1)

- Brush With Greatness - Making the most of your digitizer
- Interview with Brian Greenstone (programmer of Xenocide)
- PING - Video table tennis program
- Shuffle - An INIT that shuffles desktop windows
- Battery Brain - A CDev that saves BRAM parms
- Reviews: GS Sauce memory card, Salvation—Wings, World GeoGraph, Orange Cherry Talking Schoolhouse series, QIX, Solitaire Royale, InnerExpress

### Jan-Feb1991 (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 CDev that allows you to rename RAM disks
- *GS+* program updates: Battery Brain v1.1, EGOed v1.32c, Teach Translator for GraphicWriter III v1.1
- Reviews: ZipGSX, LightningScan, Design Your Own Home, Print Shop Companion IIGS, Your IIGS Guide, Dragon Wars, 2088: The Cryllan Mission - Second Scenario, Space Ace, Sinbad & the Throne of the Falcon

### 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 4: QuickDraw II
- FGS - A desktop program that generates Fractals
- *GS+* program updates: EGOed v1.36, Autopilot v1.1, NoDOS v1.6
- Reviews: two 100MB hard drives, Nite Owl Slide-On Battery, ORCA/Integer BASIC, ORCA Talking Tools, Storybook Weaver: World of Adventur HyperBole, HoverBlade, Shareware: DeskTop Painter, SoundSmith, IIGS Classic: Bard's Tale IIGS

### Jan-Feb 1992 (V3.N3)

- How Printing Works - An article by Matt Deatherage
- Working with the Toolbox - Part 6: The Resource Manager
- Buying & Using Mac Hard Disks
- Cool Cursor - A Control Panel that replaces the old watch cursor with an animation
- Replicator - A desktop-based disk duplication program that works with any GS/OS device and file system
- *GS+* program update: EGOed v1.4
- Reviews: MacLand 105MB Hard Drive, Tulin 120MD Hard Drive, SuperConvert, Signature GS, Learn to Program in C, 4 shareware reviews

### 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. **Requires 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.**
- *GS+* program updates: EGOed v1.7 **(requires System 6)**, Quick DA v2.0 **(requires System 6)**, Replicator v1.3
- 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.**
- II 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
- *GS+* program updates **(require System 6)**: Autopilot v2.0 , Quick DA v2.1, EGOed v1.7.1
- Reviews: ContactsGS, GSymbolix, Kangaroo, ORCA/Debugger, UltraCat, Storybook Weaver: World of Make-Believe

### Nov-Dec 1992 (V4.N2)

- Understanding Accelerators
- The Basic IIGS
- 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.**
- Miscellaneous Library (updated)
- *GS+* program updates: EGOed v1.8 **(requires System 6)**, Replicator v1.3.1
- Reviews: AutoArk, 1990 GEM Apple II CD-ROM, IIGS System Transport Case, Out of This World, TrueType Font Collection, Universe Master
- Review updates: Desktop Enhancer v2.0, Pointless v2.0

**(All programs after this issue require System 6, 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 - A Finder extension that lets you change the colors of your device icons
- Miscellaneous Library (updated)
- *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, TransProg III v1.1, Ant Wars, FloorTiles, 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 the EGOed New Desk Accessory
- Miscellaneous Library (updated)
- *GS+* program updates Rainbow v1.0.1, NoDOS v1.8
- Reviews: Salvation—Deliverance, DreamGraphix, The Manager, The Passport House Letter, The Lost Tribe, DuelTris

### May-Jun 1993 (V4.N5)

- The Scavenger - Using your IIGS with CD-ROMs from other computers
- 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 Volume 1

### 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 annoying "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 Metacus, HardPressed, The Lost Treasures of Infocom, Treasures From Heaven: Quest for the Hoard 2, Your Money Matters, Zip Drive

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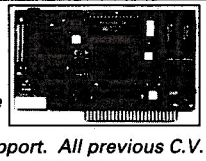

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# An Introduction to Object Oriented Programming

By Steven W. Disbrow

Back in my college days, I had to summarize an article from my area of study (computer science) for an English class. I selected an article on a new-fangled programming concept called object oriented programming. Although I got a good grade on the assignment, my instructor admitted that she had absolutely no idea what the article was actually about. Hopefully I'll do better this time, because I'm writing this article for programmers, not an English professor.

**Example 1**
**The shapeObject Class**

```
shapeObject = object( tObject)

    shapeRect : Rect;

    procedure SetShape( x1, y1, x2, y2 : integer);
    procedure Draw;
end;
```

### So, What Is It?

Object oriented programming (or "OOP" for short) is a very different way of thinking about your data and the programs that you write to work with that data.

Traditionally when you write a program, you try to figure out what your data is going to look like, and then you write a bunch of procedures and functions to manipulate that data. The problem is, if the structure of that data changes even slightly, you will probably have to completely rework the procedures and functions that you originally wrote. Programmers have worked this way for thousands upon thousands of years, but it's still a pain.

Object oriented programming, however, treats data, procedures, and functions as small parts of a larger whole: the object. Basically speaking, an object is made up of a data structure, along with the procedures and functions that are used to manipulate that data structure.

At this point, I have to stop and start giving you some terminology. First of all, in OOP terminology a particular type of object is called a *class*. A class is not an actual object, it is simply a template that describes what will be inside each object that belongs to that class. And, instead of saying "procedures and functions" over and over, object oriented programming terminology just lets you call these things *methods* and be done with it. As for the actual data fields inside a class, these are called *instance variables*. And now, believe it or not, it's time for an example (in ORCA/Pascal)! (See Example 1.)

Well now, that doesn't look too bad does it? Let's take it apart and see exactly what's what. (By the way, just about every OOP book I've seen starts out with a shape object of some sort or another, so this may look familiar to you if you done any OOP research before.)

First of all, the keyword "object" tells the compiler that we are defining a new class of object, and the equal sign tells the compiler that we want that class to be called "shapeObject". (Actually, it would be more logical if the keyword were "class" instead of "object", but them's the breaks....) The last part of the first line tells the compiler that `shapeObject` is to be a descendant of the class `tObject`. Don't worry what that means just yet, we'll come back to `tObject` later.

Moving to the second line, we see the instance variables for this class. In this case there is only one variable: a rectangle named `shapeRect`. This will be used to hold the x and y values that define our shape.

The next two lines are the methods that are used by `shapeObject`. We haven't actually written them yet, but it's pretty easy to figure out what they do just by looking at their names. So, let's go ahead and actually write the code to perform these methods. (See Example 2.)

Looking at these methods, you are probably wondering two things: 1) How does the compiler know which object to relate the instance variable to, and 2) Why is the method for `Draw` empty? Sorry, but I can't tell you that just yet. First we have to know how to create an object, and how you actually use methods.

**Example 2**
**The Methods of shapeObject**

```
procedure shapeObject.SetShape;
    begin
       shapeRect.left := x1;
       shapeRect.top := y1;
       shapeRect.right := x2;
       shapeRect.bottom := y2;
    end;

procedure shapeObject.Draw;
    begin
       { nothing to do here! }
    end;
```

### Creating Objects

To create an object, you first have to define its class, which is comprised of instance variables and methods. Then, once these are defined, you simply use the `new` function to set aside space for the actual object. Enough space is set aside to hold all of the instance variables defined for that class, as well as room for a "dispatch table" that points to all of the methods that are used by the object.

### Using Methods

In OOP terminology, you don't call a function or a procedure, you "pass a message" to an object's method. So, lets put these two new bits of information together into the program stub shown in Example 3, and go over it line by line.

First of all, we declare an object variable called `myShape` of class `shapeObject`. Next, we use the `new` function to allocate space for the

myShape object. When we create this object, it automatically "gets" its own copy of the instance variable shapeRect. It also gets the use of the methods SetShape and Draw. (Note that I didn't say that it gets *copies* of these methods. All objects of the same class actually *share* the code for their methods.) Note that myShape doesn't hold the object itself, it merely holds a *pointer* to the object. (Also note that most Macintosh object oriented languages use handles, and not pointers, in this situation.) Finally, we pass the SetShape message to the myShape object. When SetShape receives this message, it is also told which object it was called from, so that knows that it should work with the instance variables belonging to the object that sent it the message. (In other words, it knows that it should work with the variables in myShape, and not with any other object.)

### But Why Is Draw Empty?

Now we can go back to the mysterious Draw method. The reason that Draw is empty is because we don't know what kind of shape it will actually be drawing! How do we get around this? Why, by having a mess of descendants!

### Descendants and Inheritance

To help explain this, consider the class definitions in Example 4. In each of these definitions, we are specifying new object classes, both of which are descendants of the class shapeObject (that's what "object(shapeObject)" means). Since these classes are descendants of shapeObject, they automatically *inherit* all of the instance variables and methods of the shapeObject class! This means that, even though they aren't shown in the definitions, boxObject and ovalObject have the same instance variables and methods as shapeObject! (In other words, when you create a boxObject, it will have the instance variable shapeRect, as well as access to the methods SetShape and Draw.)

**Example 3**
**Creating an Object and Passing It a Message**

```
var
    myShape : shapeObject;

begin
    new( myShape);
    myShape.SetShape( 10, 10, 20, 20);
end;
```

Now you may be thinking, "Gee, that's stupid, you've got three classes that are the same except for their names." And, if that's all they were, you would be right. However, note that we've re-declared the Draw method for each of these classes, and that the keyword "override" appears after each re-declaration. This tells the compiler that, yes, we want to inherit everything in the shapeObject class, but we also want to create a *new* Draw method, that is usable *only* by *this* class! To see what I mean, take a look at Example 5.

As you can see, these are *extremely* simple methods—all they do is make an appropriate Toolbox call to draw the appropriate shape (a box or an oval). These methods are associated with a certain class in the first line of each method. When the compiler sees "boxObject.Draw" it knows to use this Draw method with the boxObject class, and when it sees "ovalObject.Draw" it knows to use that Draw method with the ovalObject class. It's important to note that the original Draw method that we defined in Example 2 is *never* called in either case! These new methods have completely overridden it for these particular classes.

### The Best Part

Remember at the start of this article when we were talking about how, using traditional programming techniques, you had to rewrite your functions when your data structure changed? Well, if you are using objects, that isn't necessary. For example, suppose that we want to define a box that is drawn with a colored outline. Do we have to throw away the boxObject we already have? Of course not! In fact, we can actually *re-use* the code we've already written for our boxObject to implement our new color box! Check out Example 6 for an example of what I mean.

Do you see what we've done? We've defined a new class that is a descendant of boxObject. (Which, you will recall, is itself a descendant of shapeObject—so this new class is *also* a descendant of shapeObject.) As before, we've overridden the Draw method. But, in addition to that, we've *added* an instance variable (theColor), and a method (SetColor) that are unique to this class. So, when we create an object of this class, we not only get the shapeRect variable, and the SetShape and Draw methods, we also get the variable theColor and the method SetColor!

However, that's not the really great part... the really great stuff is in the Draw method for the colorBoxObject. As before, we've overridden the Draw method and replaced it with new code. However, in this case, there's a new twist: we're actually calling the Draw method for the boxObject class from *inside* the Draw method for colorBoxObject! How? Look at the line that says "inherited Draw;". This line says that you want to call the Draw method of the class that is the *parent* of this class! So, when the Draw method for colorBoxObject is called, this is what happens: first, we use the Toolbox call SetSolidPenPat to set the color of the pen to the color we specified with the SetColor method. Next, we inherit the Draw method from our parent class and execute it. So, we immediately fall through to the Draw method for the boxObject class, which, as before, simply calls the FrameRect tool to draw the box specified in the shapeRect variable!

**Example 4**
**Decendants of shapeObject**

```
boxObject = object( shapeObject)

    procedure Draw; override;

end;

ovalObject = object( shapeObject)

    procedure Draw; override;

end;
```

Now, stop and think about what we've just done.... We've changed our data structure, without having to throw away or re-write the perfectly good code we had before! In fact, we were able to re-use some of the code that we had already written! Pretty cool, eh?

### Dispose, Free and tObject

The last point we need to cover in this part of our discussion is the fact that you must dispose of every object that you create with the `new` function. You can do this one of two ways: either by using the `dispose` function, or by using the `Free` method.

If you're familiar with Pascal, you're probably familiar with the `dispose` function. However, if you aren't, all you need to know is that `dispose` simply disposes of the memory that's required to hold the instance variables and list of methods in an object.

`Free` however, is a different story. If you are wondering where `Free` came from, take another look at Example 1. Note the phrase "object( tObject)". This tells the compiler that `shapeObject` is to be a descendant of the class `tObject`. Now, if you are thinking you missed something, you didn't. You see, `tObject` is a special class that is predefined for you. `tObject` contains four methods that allow you to copy and dispose of objects. By making your objects descendants of `tObject`, you automatically get access to these methods. These methods are `Clone`, `Free`, `ShallowClone` and `ShallowFree`.

### Free and ShallowFree

`Free` is a method that you can override and use to dispose of any additional memory that you allocate for your objects. For example, if one of the instance variables in your object is a variable that will hold a handle, and that handle ends up containing a 10K block of memory, you can't get rid of that memory simply by calling `dispose`. All dispose does is get rid of the *object*, so it won't get rid of the memory that the handle contains. By overriding `Free`, you can take care of these special cases before calling the original `Free`. (For an example of how this might work, see Example 7.)

`ShallowFree` is, basically, the `dispose` function. `Free` actually calls `ShallowFree` to get rid of the object. You should *not* override `ShallowFree`!

Finally, it's important to note that if you use `Free`, you do not and *should not* use `dispose`! And, if you use `dispose`, don't use `Free`!

### Clone and ShallowClone

These two methods are set up the same way as `Free` and `ShallowFree`, except they are used to copy an object. Again, `Clone` is there for you to override if you need to do some extra work to copy an object. To use the example we used for `Free`, if the object you are copying has an instance variable containing a handle, simply copying the object will just give you a copy of the variable, it *won't* give you a copy of the data in the handle itself. For an example of how you might write a `Clone` function, see Example 7.

For its part, all `ShallowClone` does is create an exact copy of the instance variables in an object. It's called by `Clone`, so you should *not* override `ShallowClone`.

### A Real Example

Now, let's pull what we've discussed together into a full program example (Example 8), and let's go through it one step at a time. (By the way, this code is on your *GS+* Disk in the **GSP.V5.N1.SEA** archive, and it does, in fact, compile.)

First, we define the classes `shapeObject` and `boxObject`. The `shapeObject` class is a descendant of `tObject`, so it inherits `Free`, `Clone`, `ShallowFree` and `ShallowClone`. It also contains the instance variable `shapeRect`, and the methods `SetShape` and `Draw`. The class `boxObject` is a descendant of `shapeObject`, so it also inherits the `tObject` class, as well as inheriting the `shapeRect` instance variable, and the methods `SetShape` and `Draw`. However, we will want to replace the `Draw` method with one specific to this class, so we override the original `Draw` method.

Next we write the actual code for each of these methods: `shapeObject.SetShape`, `shapeObject.Draw`, and `boxObject.Draw`.

Now we are ready to begin our main program. First, we create a new box object, called `aBox`, by using the new function. Next, we use the method `SetShape` to set the `shapeRect` of `aBox`, and then, finally, we draw the box by passing a `Draw` message to `aBox`.

**Example 5**
**Draw Methods For boxObject and ovalObject**

```
procedure boxObject.Draw;
    begin
        FrameRect( shapeRect);
    end;

procedure ovalObject.Draw;
    begin
        FrameOval( shapeRect);
    end;
```

**Example 6**
**A Colored Box Object**

```
colorBoxObject = object( boxObject)
    theColor : integer;

    procedure SetColor( newColor : integer);

    procedure Draw; override;
end;

procedure colorBoxObject.SetColor;
    begin
        theColor := newColor;
    end;

procedure colorBoxObject.Draw
    begin
        SetSolidPenPat( theColor);
        inherited Draw;
    end;
```

**Example 7**
**Some Examples of Overriding Clone and Free**

```
myObject = object( tObject)
    myData : handle;

    procedure Free; override;
    function Clone : myObject; override;
end;

    procedure myObject.Free;
    begin
        DisposeHandle( myData);
        inherited Free;
    end;

    function myObject.Clone;
    var
        newObject : myObject;
        dataCopy : handle;
    begin
        { copy the object itself }
        newObject := myObject( inherited Clone);
        { Copy the data in the handle }
        dataCopy := NewHandle( GetHandleSize( myData),
          MMStartUp, 0, nil);
        HandToHand( myData, dataCopy, GetHandleSize(
          myData));
        { Put the new handle in the copy of the object }
        newObject.myData := dataCopy;
        { and return the new object to the caller }
        Clone := newObject;
    end;
```

Finally, we clean up after ourselves by passing the `Free` message to `aBox`, and that's the end of our program!

### Those Were The Basics

If you were able to understand all of that, you now know just about everything you need to know to start writing OOP programs. Honest!

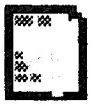
The next step is to take all this new knowledge and use it to construct a IIGS program complete with windows, menus, and controls. If you are interested in seeing my solution to this problem, flip on over to the File Dump article elsewhere in this issue. In it, I'll discuss how to build an honest-to-gosh IIGS application using ORCA/Pascal v2.0.1 and the concepts that we have discussed in this article.

Object oriented programming is something that's been a long time in coming to the IIGS. Frankly, it's a lot to learn, but it's worth it! Once you get used to OOP, you'll probably find that your mind will literally explode with neat new things to do with it. Hopefully, lots of you out there will take the plunge, and we'll see lots of neat new object-based software for the IIGS.

If you want to see more articles on this subject in future issues of *GS+* Magazine, let me know! I'm just itching to get into the really complex stuff! *GS+*


What do objects, spell checkers and turtles have in common?

Without Pegasus Pascal, ORCA/Pascal is only half the complier it could be. Our pre-compiler makes ORCA/Pascal the most powerful language for the IIGS.



Pegasus Pascal 2.0 knows all the latest features of ORCA/Pascal, including object-oriented programming. Misspelled identifier? Pegasus Pascal will correct it. It even comes with turtle graphics library especially designed for young programmers. And did we mention IBM cross-compiling, a manager for coordinating large projects, and that it's up to date for System 6.0.1? As our in-house language, PP is going to be supported for a long time to come.

If you're serious about the Apple IIGS, think seriously about Pegasus Pascal.

**Great Quest Winner:** Thomas Smith of Willowdale, Ontario, with a score of 10,640. He says: "I'm very surprised you did not get 10 entries... To all the other IIGS users out there: SAD! Get off your A** and support the GS!"

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**Get Programming!**

## Example 8
## A Simple OOP Program

```
program oops( input, output);

{You need these units to implement OOP}
uses common, objIntf,
 QuickDrawII;

type
 { First we define our classes }
 shapeObject = object( tObject)
    shapeRect : Rect;
    procedure SetShape(x1, y1, x2, y2: integer);
    procedure Draw;
 end;

 boxObject = object( shapeObject)
    procedure Draw; override;
 end;

{ Now we can declare an object variable }
var
 aBox : boxObject;

{ Implement the methods }
procedure shapeObject.SetShape;
begin
    shapeRect.left := x1;
    shapeRect.top := y1;
    shapeRect.right := x2;
    shapeRect.bottom := y2;
end;

procedure shapeObject.Draw;
begin
end;

procedure boxObject.Draw;
begin
    FrameRect( shapeRect);
 end;

{ Start the actual program! }
begin
 new( aBox);
 aBox.SetShape( 10, 20, 50, 100);
 aBox.Draw;
 aBox.Free;
end.
```


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# Rumors, Wishes & Blatant Lies

By Prof. G. S. Gumby

### System 6.0.1 Now Available

Just as we were about to start duplicating disks for our last issue, Apple's Software Licensing called to let us know that we could start shipping Apple IIGS System Software v6.0.1! We put the news in last issue's **a.Read.Me** file, but just in case you missed it, be sure to check out the "How to Get System 6.0.1" article for complete information on how to get your copy!

### But...

While System 6.0.1 is now shipping from just about everyone, the programmers information for System 6.0.1 is apparently still in limbo! A quick call to the Byte Works informed me that they are *still* waiting on Apple to provide them with the information needed to produce the 6.0.1 update to the Programmer's Reference for System 6.0! If you've already ordered your copy (like we have), don't worry, the Byte Works tells me that they will be shipping them out just as soon as they can.

### The Sound of One Board Shipping

ECON's much-anticipated SoundMeister Pro sound board has undergone a redesign. However, even with that delay, the board was scheduled to go into production at the end of September, and it should start shipping in the first week of October. ECON plans to have the board widely available by the end of October. More good news: DigitalSession v1.0 should be included with the SoundMaster Pro board.

### Too Much Good News?

Even as ECON prepares to ship the Sound Meister Pro, they have decided to discontinue both of their hard disk product lines: the internal Pegasus drive, and the recently announced X-Drive. Of course, ECON will continue to support current owners. Why did they do this? Apparently, the hard drive market is just too competitive for a small company like ECON, so they decided to concentrate on their software products and and other hardware projects (like the SoundMeister Pro).

### EXPO East Postponed

The day we went to press with our last issue, we learned that the EXPO East had been postponed until April of 1994. Unfortunately, we weren't able to print anything about it in the magazine or pull the ad for the EXPO. (However, we did place a notice in the **a.Read.Me** file on the *GS+* Disk.) Soon after the postponement was announced, we contacted Event Specialists to see why the show had been postponed. Basically, it seems that with the demise of *A+/inCider*, Event Specialists did not feel that they could adequately promote the show in the time that remained. So, they postponed it until next April.

That's all fine and good, but we recently began to get calls from readers saying that when they tried to contact Event Specialists, they were told that the number (the one from the ad that ran in the last *GS+* Magazine) was no longer in service. We tried calling the number and got the same message. At this point, we don't know *what's* going on with Event Specialists, but we are trying to find out. Be sure to check the **a.Read.Me** file on your *GS+* Disk for any last minute information that we get!

### The Big News!

Quality Computers has signed a contract with the Claris Corporation that gives them the rights to update and sell both AppleWorks Classic and AppleWorks GS! Quality has already announced AppleWorks 4.0 (which should be available now), and is actively soliciting user comments and suggestions for ways to improve AppleWorks GS!

### New Newton Products

Newton-mania has swept the office here at *GS+* Magazine, and, as the Newton community grows, Newton rumors have begun to make their way onto the electronic services. The first Newton product, the MessagePad, has already sold over 50,000 units (according to a report in *Newsweek* magazine), and Apple has already announced plans for two new Newton products before the end of the year. Rumors online suggest that the first of these will be an even smaller and lighter unit, that will be called the "ScratchPad." The second product is said to be larger (about the size of a legal pad), with a bigger, back-lit screen and improved battery life (it will use C cell batteries). In addition, this product has handles on each side (which Apple is calling "wings"), that are intended to help you keep it steady so you can write on it while you are on a train or riding in a car. Due to its increased size, Apple is referring to this product as the "MaxiPad."

### Another Wish List

We almost never do any real "wishing" in this column, so I asked the boss to give me his wish list. Here's what he said he wanted to see:

An even faster accelerator for the IIGS.
A new version of GraphicWriter III.
A new version of BeagleWrite GS.
A C++ compiler.

I then asked our Technical Editor for his wish list, and here's what he gave me:

World Peace through software
More violence on TV
A large Big Ed's pizza
To be locked in a closet with either Madonna or Rosanne Arnold

### Ask Mr. 8-Ball

We've got lots of new subscribers this issue (welcome!), so I thought I should take a few lines to explain "Ask Mr. 8-Ball." We get lots of rumors that can't be confirmed by normal means, so we call on our special investigative reporter, who, for reasons of national security, prefers to go by the name "Mr 8-Ball." So, here we go!

Gumby: This is an old rumor, but with the pending release of Apple's first PowerPC, it's come up again. As you know, the PowerPC will be able to "mimic" other computers by emulating them in software. In fact, the first PowerPC Macs will probably just be running a Macintosh emulation. So, the rumor is, in order to finally quiet Apple II owners, Apple is planning to release an Apple IIGS emulation for the PowerPC. True?

8-Ball: As I see it, yes.

Gumby: Also, Macintosh developers have reported that Apple is pushing them to develop PowerPC-specific applications. While these applications will run on the PowerPC, they probably *won't* run on the Mac! Is this the beginning of a "Macintosh Forever" ad campaign by Apple?

8-Ball: My sources say no.

Psst! Hey, buddy! You got a rumor, wish or blatant lie about the IIGS? Send them in! After all, I can't keep this up forever!

Send that libelous material to:

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

# How to Use Your GS+ Disk

The first thing you need to do is **make a backup copy of your *GS+* Disk with the Finder!!!** 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) 843-3988. If your disk is damaged, let us know, and we'll get a new one to you as soon as possible.

### Installing The Software

To install the software on this issue's *GS+* Disk, start up your computer using System Software v6.0 or later. (Note that all of the programs on this issue's disk *require* System 6!) 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.

Before you attempt to use your backup *GS+* Disk, please take a few minutes to read the **a.Read.Me** file for any last minute corrections or information. If you do not already have our EGOed (or 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 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 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

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

It must be noted that *all* of the files on this disk are *very* important and the files that you can *safely* remove depend, for the most part, on your hardware setup. So, please read these instructions carefully before removing *any* files.

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

If you do not care what time it is, you can delete the following file:
***:System:CDevs:Time** (11K)

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

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

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

If you do *not* have a 5.25-inch drive, you may delete the following 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 19K file:
***:System:Desk.Accs:ControlPanel**

Removing some or all of these files will give you ample room (up to 139K on a ROM 01 IIGS and up to 135K on a ROM 03 IIGS) on your startup disk to install EGOed lite or any of the other system utilities from your backup *GS+* Disk.

## Having Problems?

*If you are having a problem with one of the programs on your GS+ Disk, we want to help! But we can't help if we don't know about it!*

*If your GS+ Disk is defective, let us know and we will send you a replacement. You can call us at (615) 843-3988 (Monday through Friday between 9 a.m. and 6 p.m. Eastern Time), to request a replacement disk.*

*If you are having a problem using one of our programs, please fill out the problem form that is on your GS+ Disk and send it to "GS+ Problems" at the address shown below.*

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 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.V5.N1.SEA program on your backup *GS+* Disk. ***You do not need to have a copy GS-ShrinkIt in order to use any of the programs or other materials on this GS+ Disk!*** However, you will gain better control over


## DISKLESS?

**If you did not receive the disk with this magazine and have decided you would like to have it, just send a check or money order for $6.50 to:**

**GS+ V5.N1 Disk Offer**
**P. O. Box 15366**
**Chattanooga, TN 37415-0366**

**Or call us at 1-800-662-3634, Monday through Friday between 9 a.m. and 6 p.m. Eastern Time, to bill it to your MasterCard or VISA.**

**Tennessee residents add 7.75% sales tax.**
**Price includes First-Class delivery to the U.S., air mail to Canada and Mexico, or surface mail to all other countries. Add an extra $3.50 ($10 total) for air mail to all other foreign countries.**

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

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

The programs on this disk *require* System Software v6.0 unless explicitly stated that System Software v5.0.4 or later is required. There are 8 items in the root directory of this issue's disk. They are:

### a.Read.Me

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

### Documentation

This folder contains the glossary as well as the Anna Matrix, Cool Cursor, and EGOed lite documentation files. The glossary is a plain text file containing all of the terms defined in the past installments of our "Glossary" department. The Anna Matrix, Cool Cursor, and EGOed lite documentation files are Teach files which can be read using Teach, EGOed lite, or any other TextEdit-based text editor.

### GSP.V5.N1.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 and technical notes are supplied in the archive as well.

To extract the files from the archive, simply double-click on this file from the Finder. 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.

### Installer

This is the Apple IIGS Installer. The installer requires System 6. Run it to install the other programs on this issue's disk. For more information on using the Installer, refer to your IIGS owner's manual.

### Programs

This folder contains Anna Matrix v1.0.1, Cool Cursor v2.0.1, the Cool Cursor Contest winning cursors, EGOed lite, and File Dump programs. Use the Installer provided on your backup *GS+* Disk to automate the installation of these files.

### 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 the *GS+* Magazine feedback form, troubleshooting guide, problem form, and writer's guide. You may use EGOed lite or the Teach application to view any of these files.

The feedback form is a plain ASCII text file. Fill it out, and send it to us to let us know what you thought of this issue of *GS+* Magazine and what you want to see in future issues of *GS+* Magazine.

If you are having a problem with one of our programs, the first thing you should do is read the troubleshooting guide to get some hints on how to solve your problem. This a Teach file.

If you still have a problem with one of our programs after reading the troubleshooting guide, *please* fill out the problem form and send it to us!

The writer's guide is a Teach file that explains what you need to know to write. for *GS+* Magazine. *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 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.

Resource Central. You won't have to bug them, they have it in stock, and in no less than three different "flavors." For just the disks (item number DA-006), the price is $24. For the complete end-user package, including manuals, the price is $39 (item number DA-0013). Finally, if you want the *ultimate* System 6 bundle, you can get the official System 6 Golden Master CD-ROM for only $99 (item number DA-0029). Take your pick, and then give Resource Central a call at (913) 469-6502.

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

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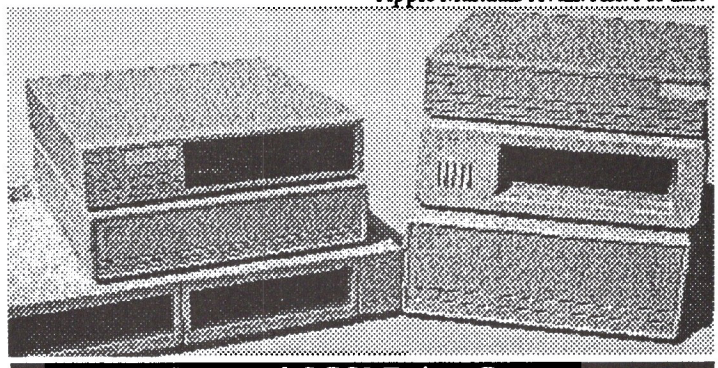
Copy ][ Plus V.8.x.....$14.95
Misc. Software. Games, Utils, More. $5.95 to $19.95. Ask For List.
Apple Manuals Avail. Ask For List



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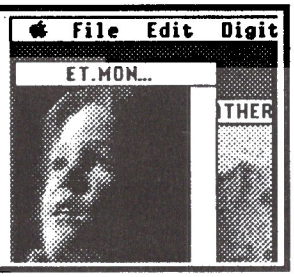


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USR 1200 Modem (NEW) .....$19.00
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Modems include ProTerm 3 Demo.

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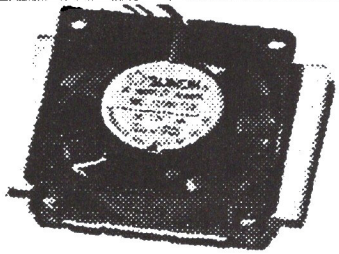
### IIgs Internal Fan



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**Meg 80 Z (1 Meg, Apple //e).....$59.00**
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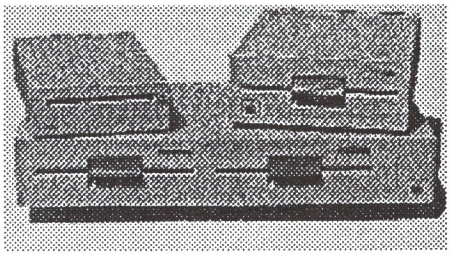

### Disk Drives

5.25" Generic Full Height w/19 Pin .....$69.00
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**Applied Engineering High Density 3.5-Inch Disk Drive**
Typical mail order price: $229

**Apple II SuperDrive Controller**
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(214) 241-6060
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Clearwater, FL 34618-9001
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Reviewed by Bill Moore

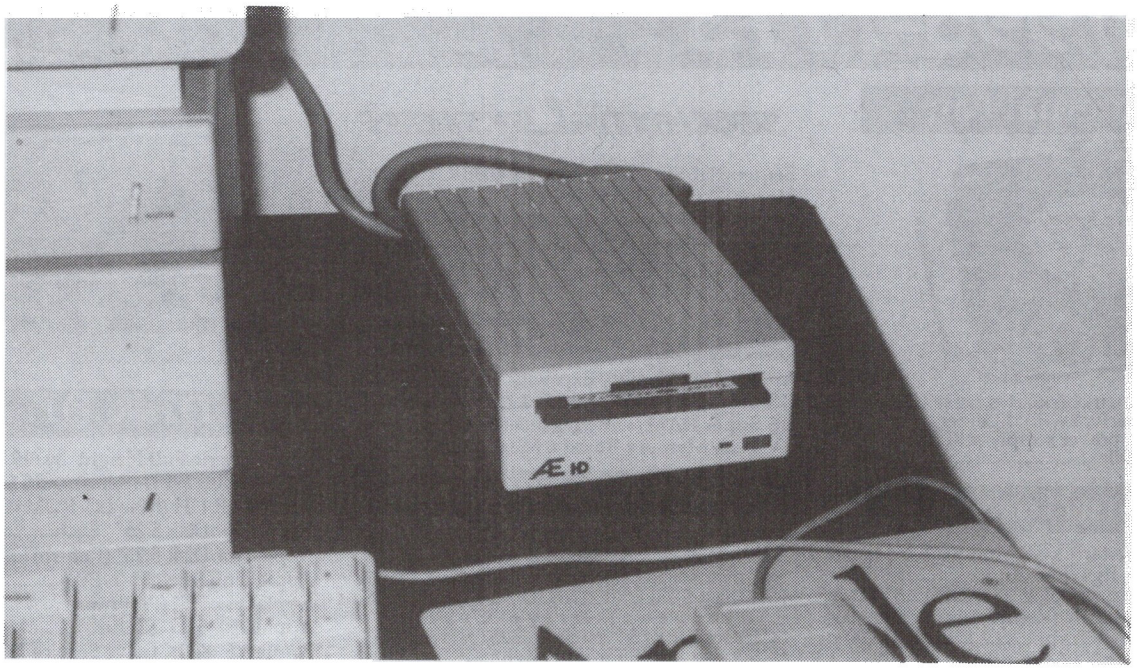
Maybe after reading my Scavenger article on sounds (in *GS+* V4.N6), you've decided that it's time to get a drive capable of reading 1.44MB disks. This certainly makes transferring files to the IIGS easier. Well, one of Applied Engineering's (AE) latest offerings, combined with Apple's SuperDrive controller card, can satisfy this urge. Yes, AE has done it again, folks. Just like when they released their 800K 3.5-inch Drive (see review in *GS+* V2.N2), AE has introduced a high density (HD) drive that is cheaper than Apple's, and apparently just as good.

Except for a little "HD" symbol next to the AE logo and a door across the disk slot, this drive looks identical to the original AE 3.5 Drive. It has the same two-way, read/write light, the same dimensions, and the same dirty gray color. The two way light is a particular improvement over other drives, allowing you to determine exactly what the drive is doing. If the light is green, it's reading data, and red means it's writing stuff. This drive is just as reliable as it's predecessor, and works just as well in every kind of disk-related operation. The only difference is the fact that it will work with high density disks to allow you up to 1.44MB of storage on a disk in either ProDOS or HFS. (MS-DOS also formats to 1.44MB on an HD disk, but of course you can't format a disk in MS-DOS on the IIGS—at least until System Software is released with a read/write MS-DOS FST.)

In real-world operation, this drive lives up to the reputation of its predecessor. We here at *GS+ Magazine* have used this drive to duplicate some of the disks for the last two issues. So far, we've found one major annoyance and one problem with this drive, and both of them only occur when using our Replicator program (last seen in *GS+* V4.N2). The annoyance occurs when you try to write a ProDOS or HFS disk image to a disk that is already formatted with MS-DOS. Replicator will try to write out the disk, but it will quickly spit the disk out and report an "I/O Error." If you re-insert the disk, it will write it out correctly. The workaround for this is simply to hook the drive up to the regular SmartPort (*not* the SuperDrive controller), which will make it work as a regular 800K drive, and the MS-DOS disks will look like just another uninitialized disk to Replicator.

The problem is that when you try to duplicate a 1.44MB disk with Replicator, sometimes the drive will not quit writing to the disk! However, this is a problem that comes and goes, and it only seems to occur inside Replicator. We contacted AE, and they didn't know of any problems with the drive itself, so it seems to be a couple of Replicator problems. Otherwise, this drive works flawlessly, and, in every respect, like any other disk drive I've worked with.

**How Useful Is This Thing Really?**
Well, in order to find out for myself, I used the System 6.0.1 Installer to put a minimum System on a 1.44MB ProDOS floppy. Fifteen minutes later, I was ready to boot. I put this disk together with the "System 6—Hard Disk or FDHD" option in the Installer, and deleted everything in the **Sounds** folder (which saves about 130K). Then I added a driver for the ImageWriter, to enable printing. This yields a very basic **System.Disk** with approximately 256K free. Even more room can be saved by deleting fonts (the Installer puts in a standard font set). Now if you're running from floppies, this sounds like a godsend. Sure, this is nice, but in order to get any real use out of System 6.0.1, *you need a hard disk*! My boot volume (an 8MB partition on my 40MB Q-Drive) is *full*—mostly from things like TrueType fonts, sounds, etc. I



guess what I'm trying to say is: this drive is very nice, and it does its job very well, but you might want to put the cash for these things toward a hard drive, if you don't already have one. I checked the latest prices in the last issue of *GS+* magazine, and what I found floored me. For the price of the SuperDrive/controller combo, you can get a 127MB hard drive and an Apple SCSI Card! If you already have a SCSI card, you can get a 240MB drive for that price!

Another possible course of action if you already have a hard drive is to get a floptical drive. For about $400, you get a drive that will read, write, and format HD disks (1.44MB), along with the new 21MB floptical disks. I've also heard that flopticals will read 720K MS-DOS 3.5 disks, but that conflicts with another bit of info I heard, which states that floptical drives can't read *any* low density disks (800K or less). [Editor's note: Is there anyone out there with a floptical that wants to test this theory for us? We'd love to run a review!] The floptical option gives you all the benefits of a SuperDrive/controller combination (assuming you already have a 3.5-inch drive), along with the added benefit of 21MB of storage space per disk for backups. Anyone who's backed up at least 40MB of data to 800K floppies can really appreciate that last sentence.

### The SuperDrive Controller Card

Of course, the HD drive would be only good as an 800K drive if the IIGS had no way to interface with it. Hence, Apple has created the SuperDrive controller card. It works just like the built-in smartport, allowing you to hook up two 3.5-inch drives (super or otherwise) and up to four 3.5 UniDisk drives. You can also put the card in a slot other than five and have up to four 3.5-inch drives attached. At duplication time here at the *GS+* Magazine office, we've had two cards in one machine with a total of six drives attached.

There is a bug in the driver that ships with the card, that can cause some programs, (like our own Replicator), not to recognize drives attached to the card. This bug is fixed in System 6 and later (and Replicator actually works around this problem), but it is still a good idea to use the card under System 6 or later if at all possible.

In my somewhat humble opinion, this card adds a capacity to the IIGS that should have been included from the get-go, at least in the ROM 03 machines. Apple, in classic better-late-than-never style, has finally released the SuperDrive controller card about two years later than it should have released it. When you step back and think about it, the SuperDrive controller card is a typical Apple II product from Apple. It works very well, but it is overpriced, and fixes an oversight that should have been included in the original design of the computer. This card is the latest in a long line of products like this, such as the Hi-Speed SCSI card.

### Conclusion

If you need to use 3.5-inch MS-DOS disks on your IIGS (or 1.44MB disks of any sort), I would recommend the AE HD 3.5-inch drive together with an Apple SuperDrive controller card. If you don't need to use MS-DOS or HD disks, I'd still recommend this drive as an 800K drive. It's cheaper than Apple's drive, and you can always buy a SuperDrive controller in the future and expand your storage capacity. This combo is not a replacement for a hard drive (although it costs as much as one), but it works well at what it does. Just be aware that with the advent of floptical disk drives, this is not your only option for putting 1.44MB disks on your desktop. *GS+*

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### MODZap v0.90b3

By Ian Schmidt
Freeware
Estimated time to download (at 2400 baud): 13 Minutes

### soniqTracker v0.6

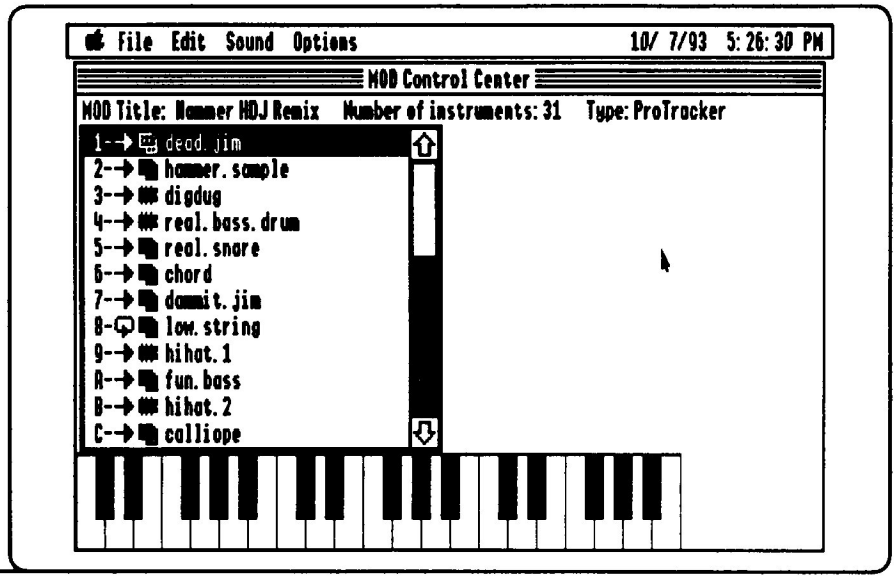
By Tim Meekins
Freeware
Estimated time to download (at 2400 baud): 8 Minutes

Reviewed by Bill Moore

### Crank It Up . . .

Ever since 1986, the "GS" in "IIGS" has stood for Graphics and Sound (not, as I first thought, God-awful Slow). Sound has always been a big part of the IIGS experience—one of the first major pieces of software available for the IIGS was Will Harvey's Music Construction Set. Through the years since the IIGS' introduction, sound and music hardware and software has made for a significant portion of the IIGS market. Every couple of years, a breakthrough product like the Audio Animator, Music Studio, and the legendary FTA demos would rock people back on their heels with amazing music or sound. Well, the next products like that are here, and best of all, they're free! (Well, okay, they're nearly free. You have to pay a few cents to download them.) Through the efforts of Ian Schmidt and Tim Meekins, you can now enter the wonderful world of MODs.

For years, there's been a problem with getting really great sounding music out of a computer. (Any computer you care to name. This has been a universal problem.) Digitized music has great fidelity (usually), but requires titanic amounts of disk space. MIDI files are compact, but since they store only note data, you have to have a synthesizer to hear them. Well, on the Amiga they fixed this problem by creating a file type called MOD. MOD files are the best of both worlds. By combining note data with small instrument samples in one file, you get really incredible sound from a relatively small file. MOD files are becoming the rage on the Mac and the PC (America Online's Mac, Apple II, and PC forums each have literally hundreds of MOD files in them), and now, with two



downloadable offerings, IIGS users can see what all the noise is about.

I downloaded MODZap one night from America Online out of curiosity to see what other people on the service had been raving about. I also picked out a MOD file that struck my fancy, "He's Dead Jim". I unshrunk the files, launched MODZap, and hit play. After recovering my socks (which had been blown off my feet), I knew I was on to a good thing. The next day, I hit an unsuspecting Diz with this program, piped through the SoundMeister card (see review in this issue) we have at the office. Diz was floored. Sitting back and listening to MODs probably wasted two hours just at the office, never mind the work I didn't get done at home.

The real star of this is of course the incredible MODs you can get, but MODZap helps to make listening to them on the IIGS so much darn *fun*. An FTA style screen complete with dancing lights, VU meters, and note data appears while playing a MOD. You can have fun by turning off any of the four tracks, to see if "Oh Yeah" would sound the same without a bass drum, for example. Also available from within the program is a jukebox, to play several different MODs nonstop. I joked to Diz that the next party I throw, the IIGS is gonna be my DJ. Also, if a particular sample in a MOD strikes your fancy, MODZap will save it out as a binary file—perfect for adding a sample from the Yello tune "Oh Yeah" to your Sound control panel.

**No Place Hops Like soniq(Tracker)**

Of course, no discussion of MOD programs would be complete without a look at soniqTracker, the equally impressive freeware MOD player by Tim Meekins. MODZap and soniqTracker set out to accomplish the same mission, but use slightly different means of doing so. In a head-to-head comparison, soinqTracker offers you better control of volume, tracks, etc. while in jukebox mode, and allows you to set an alarm clock so you can wake up with your favorite MOD blasting out of the stereo. MODZap allows one to save out instruments, and the on-screen graphics show you some neat things happening while a MOD is playing, such as loops and arpeggios.

On to the gripes. Neither MODZap nor soniqTracker allow you to convert MODs into something a little more native to the IIGS, such as a SynthLab file (which could then be played in the background). In fact, since the MOD only ties up the Ensoniq chip and sound RAM, a background MOD player could probably be written *very* easily. Also, both of these programs should officially be considered beta versions. In other words, expect some crashes and random wackiness at times. The docs for both programs are really good about telling you things to specifically avoid doing to minimize the chances of such a crash. I still want to know how people use The Manager to play MOD files in the background, since every time I have tried this, the machine hangs in a spectacular manner. If you're really dead-set on playing background MODs while you work, I understand the best combo to have is ShellPlay and GNO/ME. Online support is available for MODZap, since Ian Schmidt has an America Online address (IRS Man).

In sum, let me say that both of these programs should be in your software library if you're serious about hearing great sounding music come out of your IIGS. I haven't heard music this good on a computer since the FTA demos. Both of these are short downloads (though some of the MOD files themselves aren't), and are, to me, ***well*** worth the time and effort. These are polished programs for beta versions, and both are extremely well documented. If someone can convince one of these boys to write a program to convert existing IIGS formats (like SynthLab) to MODs, or better yet, to create MODs on the IIGS, or to play them in the background in the Finder (like SynthInit), then the sky would be the limit. ***GS+***

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## ORCA/Pascal v2.0.1

By Mike Westerfield

Retail price: $150
Typical mail-order price: $80

Not copy protected
Requires 1.25MB of RAM, at least one 3.5-inch drive, and System 6.0 or later. At least 2MB of RAM and a hard disk are strongly recommended.

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

Reviewed by Steven W. Disbrow

We get lots of letters here at *GS+* Magazine asking which language we recommend for beginning programmers. Since I learned to program in PL/1, I can't honestly give an answer as to how effective Pascal, C and Assembly are at teaching the fundamentals of programming.

However, I can say for a fact that almost every beginning programming course is now taught using the Pascal language. The main reason that you usually hear for this is because Pascal is a "strongly typed" language. What that means is that, in Pascal, you can't say something like "apples equal oranges." This is good, because it keeps beginners from making some silly mistakes. (That's the difference between beginning and expert programmers: beginners don't know any better, and experts just forget. [Except for Joe, who never makes mistakes—at least not intentionally.]) Compare this to a language like C, where you can say "not only do apples equal oranges, they also look exactly like camels." Of course, in Assembly language, you have to actually *build* the apple before you can even think about what it equals.

### What Do the Experts Use?

Of course, lots of the time, its a good thing to be able to say "apples equal oranges" in a program, so lots of "expert" programmers find themselves leaving Pascal for the more liberal environment of C. I'm one of these people myself, having long ago given up on Pascal as just *too* restrictive.

However, while I've been typing away on my little C programs, a revolution was going on in the world of "mainstream" programming. It was called object oriented programming ("OOP" for short), and, unfortunately, there was no way I could get in on it using my trusty IIGS. To be honest, it was depressing to see all of the neat new technologies developing in other markets, but being unable to use them on my IIGS . . . . At least until ORCA/Pascal 2.0 came along! ORCA/Pascal is (to my knowledge) the first object oriented programming language for the IIGS. Unfortunately, it's also the *only* object oriented programming language for the IIGS. So, to get in on this new technology, I had to dust off my copy of *Oh! Pascal!* and dive back into the sea of Pascal. So, the question is this: is learning object oriented programming worth the trouble of trading C (or Assembly), for Pascal?

But enough conceptualizing and introductory exposition! Lets talk about the product itself, shall we?

### The Environment

ORCA/Pascal is an ORCA programming language intended for use with either the ORCA shell or the Apple Programmers Workshop (APW). (Note that APW is actually an old version of the ORCA shell environment. In most contexts, the two terms are interchangeable [i.e. "APW" and "ORCA shell"]. However, APW is *really* old, and I can't recommend that anyone actually *use* it over the ORCA shell.) The ORCA shell is a text-based development environment that borrows many of its concepts from UNIX. ORCA/Pascal also works with the Prizm desktop-based development environment that allows you to build your programs with access to your New Desk Accessories, and all of the other neat stuff that makes your IIGS a IIGS. ORCA/Pascal includes both the shell and Prizm, so you can try out both environments and decide which one you prefer. ORCA/Pascal also comes with a whole slew of programming utilities that you can use with either the shell or from inside Prizm.

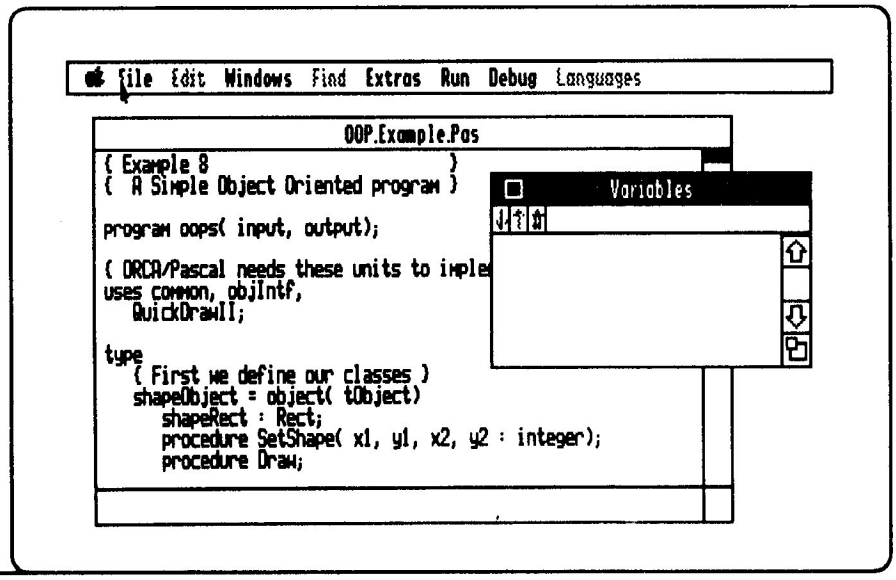
Prizm also has a built-in debugger that you can use to step and trace through your programs. And, unlike previous versions of Prizm, this version allows you to easily view the contents of records, array elements, and objects! Prizm also has an extremely cool editor that lets you set and clear breakpoints (for the debugger), and edit your files in a "split window" view (i.e. you can edit two different parts of a file at the same time, in the same window).

In the past, the Prizm environment has been (and I'm being nice here) a little flakey. However, this latest version seems to be very solid. Unfortunately, in my experience, actually using Prizm to work on a program has been more trouble than it's worth. The whole "compile, link, test" cycle becomes overly complicated and time consuming because Prizm tends to just get in the way. However, Prizm is probably what most beginners will want to use, simply because most of the tutorials are presented in the Prizm environment.

Regardless of which environment you choose, you'll still have to work with the ORCA/Pascal . . . .

### Compiler

According to the documentation, the ORCA/Pascal compiler implements a superset of the International Standards Organization (ISO) specification for the Pascal language. All this means is that with ORCA/Pascal you get standard ISO Pascal, plus lots of other neat stuff. That "other neat stuff" includes functions to manipulate strings, functions to deal with number formats specific to the IIGS, and the ability to access the IIGS Toolbox. (There's lots more "other neat stuff," but you get the idea.)



Finding out about all of the things this compiler can do requires you to (gasp!) read through the manual. Fortunately, as Byte Works manuals always are, the ORCA/Pascal manual is a great piece of documentation and a breeze to read. And, there's an accurate index—which is absolutely essential for documentation of this type.

Lots of compiler extensions and great documentation are nice, but they don't mean too much if the compiler itself is full of bugs. Fortunately, that's not a problem. In fact, probably the best thing about this version of the ORCA/Pascal compiler is that all of the bugs from previous versions seem to be fixed! However, I have found a few new problems, but since they only seem to show up when dealing with objects, I'll save them until we talk about objects

### OOPs!

Well, hey, what do you know? It's time to talk about objects! As I said earlier, ORCA/Pascal is currently the only object oriented programming language available for the IIGS. Since it is the only game in town, the Byte Works could have just come up with their own way of implementing objects in ORCA/Pascal, and we would have had to learn to live with it. Fortunately though, the object oriented programming extensions in ORCA/Pascal were built around the Object Pascal "standard" used by Apple for the Macintosh. The manual lists three reasons why this is a good thing:

First, since the languages are so similar, you can learn object oriented programming by reading books for the Macintosh.

Second, the Mac Toolbox and the IIGS Toolbox are similar, so by making extensive use of object oriented programming, it should make the job of porting programs between the machines much easier.

Third, the Object Pascal standard has been in use for several years, so we know it is a good, usable system.

These sound like great reasons to use Object Pascal, and they are. But, the first and second points are on shaky ground.

The problem with the these points is that, aside from a single chapter on Object Pascal, the ORCA/Pascal manual includes *nothing* about object oriented programming! Even worse, there aren't any example object oriented programs included with ORCA/Pascal! This means that you pretty much *have* to use a Macintosh tutorial to learn how to use object oriented programming. I personally happened to have a copy of the manual for a Macintosh Object Pascal compiler, but I had to buy the compiler to get it, and I doubt that's something that most IIGS owners will want to do.

Of course, you could always go to the book store and find a book on Object Pascal, can't you? Well, I've tried WaldenBooks and Software Etc., and I still can't find a book on Object Pascal for the Macintosh. To make matters worse, the ORCA/Pascal manual doesn't include the names of any books that will help with object oriented programming (although it does include the names of some good books on Pascal).

In my opinion, this is a major omission and a really big problem with this product. It's kind of like saying to the buyer, "Here's this great new technology for your IIGS. But, you're on your own trying to figure out how to use it."

### Still . . .

However, assuming that you *can* get hold of some information on how Object Pascal works (like the article that appears elsewhere in this issue), learning how to use it is very much a worthwhile experience! While object oriented programming is really just another way of thinking about your data and the code that manipulates it, it's a refreshing change that, in my case at least, can put some of the fun back in your programming.

However, it's not perfect. While most of the old bugs seem to have disappeared from ORCA/Pascal, a few new ones seem to have come along with the addition of objects. First, if you try to assign `nil` to an object variable, chances are that a ton of 100% pure junk is going to get shoved on the stack. This is bad, because `nil` can be a very useful thing to assign to an object variable. However, if you use `objectType( ptr( ord4( 0)))` in the place of `nil` things seem to work just fine. Second, there seem to be some problems with typecasting objects. For example, if you try something like `new( objType2( type1Obj))` (where type 2 objects are descendents of type 1 objects), you get a compiler error. Also, you can't compare an object to `nil` by using something like `type1Obj = objType1( nil)`. According to my readings of object oriented programming concepts, these should all work, but I can't get them too. I've reported these problems to the Byte Works, but so far, they haven't gotten back to me on it. Still it is possible to work around these problems by using some local variables, or simply by planning your program a bit more carefully.

### Conclusions

So, basically, there are two sets of people out there wishing that I'd wrap this up. OK, here goes . . . .

First off, we have the beginners (or the merely curious) that really don't care a bit about OOP or any of that other stuff, they just want to learn to *program*. To them I say that, "ORCA/Pascal (along with the Byte Works Learn To Program in Pascal tutorial [see review in *GS+* V3.N4]), is an excellent way to get started." (Just make sure that we get to publish your first program.)

Second, we have the experienced programmers that are happily hacking away at their C and Assembly code, but they want to expand their field of knowledge by learning about object oriented programming. To you I say, "If you don't hate Pascal, and you are longing to get involved in the OOP revolution, ORCA/Pascal is not just the only way to go, it's a good way to go." Just make sure that you have access to some sample Object Pascal source code and a good tutorial book before you take the plunge!

Oh yeah, there is a third group that I need to address: people that already love Pascal and/or people that are thinking about upgrading to ORCA/Pascal v2.0.1. What? Are you kidding? It's great. Get it! *GS+*

**SoundMeister**
**(with DigitalSession software)**
By ECON Technologies

Typical Mail Order Price: $89.95

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

Reviewed by Bill Moore

Looking for ways to get more sound into your IIGS? Perhaps you have sound effects CD's that you want to digitize from, or you just want to have a huge belch as your disk eject sound. In any case, a new board from ECON Technologies has come along to help satisfy those urges. ECON, noted for their utility programs AutoArk (see review in *GS+* V4.N2) and Universe Master (also reviewed in *GS+* V4.N2), has jumped into the sound market with the SoundMeister (SM) digitizing board. Included with the board is a copy of ECON's new sound editing program, DigitalSession (DS). With Applied Engineering getting out of the sound market (I infer this from the fact that they are liquidating their stock of Sonic Blaster cards), this card *appears* to be a worthy successor to AE's throne.

### What Will This Board Do For Me?

The SoundMeister is a board that will enable you to digitize your own sounds in mono, and play back in stereo. This means if you have a game, music program, or digitized sound in stereo, the SM will allow you to listen to it in stereo (with appropriate external equipment, such as speakers or a stereo system). Input and output on this board is among the most flexible I've seen for a sound card for *any* computer. For input, you may use a low-level (microphone) or high level (such as a CD player) input. Output options are equally flexible, allowing one to hook up unpowered speakers directly, powered speakers like Bose Roommates, or you can hook your IIGS into your home stereo for best fidelity and response. (When I played some MOD songs using MODZap [reviewed in this issue] thru the SoundMeister at the office, Diz was blown away!)

I have only a couple of gripes about the package, but they are fairly major ones. First, although I recommended DigitalSession as a program of choice in my article "Catch the .WAV" (see last issue), DS was shipped to me *as a beta copy*! Now normally, this would put a program in the lead for a Trash Can Award [anybody remember those? - Ed.], but this version seems to be fairly stable. I have had it crash on me, but no more frequently than Sonic Blaster's program does under System 6.0.1, or the America Online IIGS software (which will invariably hang unless I shift-boot).

I may be crazy, but I just don't like for people to pay for the "privilege" of being a beta-tester.

Of course, one nice thing about this is it may not be too late to suggest some improvements. When you use the keyboard shortcut Command-O to open a document, DS can only open it's own proprietary format. A more intelligent way to do this is the way Platinum Paint's open dialog does it (i.e. with a pop-up menu to ask the user which formats he or she wishes to open).

If that cannot be done, then at least define a keyboard equivalent for the current "Import Waveform" and "Import rSoundsample" menu items. Ninety percent of the time that I start up DS, it's to work with an existing sound file. It is very annoying to me to have to select these options from the File menu when I should logically just have to hit Command-O.

As long as I'm on the soapbox about this, I have the same gripes about saving work. If you hit Command-S, DS saves in it's proprietary format (which is worse than useless to me). And as long as we're rewriting the open dialog, let's go ahead and do the same to the save dialog, and allow the user to specify the format he'd like to save in. Again, 90% of the time I use DS, it's to either work with an rSoundsample, or to convert another type of sound into an rSoundsample—not to work with files in the DigitalSession format. The rSoundsample format has become the new standard file format for digitized sound on the IIGS, and in my opinion, ECON should better integrate working with this format into the DigitalSession program.

Also, EGOed has spoiled me with it's "Remember Open and Save Folders" preference. This is another option to add, in my opinion. I put DigitalSession through much of it's paces while working on the IIGS AudioClips packages for Sound Source Unlimited, and this program nearly drove me nuts having to load sounds from one folder, convert them, then save to another folder. Yet, if I had Kangaroo from Seven Hills, this wouldn't be much of a problem.

Finally, I feel that DigitalSession should have a way to open multiple files at once, (limited by available memory of course). This was the other thing that quickly became a pet peeve while working on the AudioClips packages.

### Impulse Power Only . . .

When we set everything up in one of the machines here at the office, we tried the board out to see how well it worked. And for about a week, no matter what we tried, we'd wind up with unintelligible garbage when we tried to digitize a sound. In desperation, I sent a sample of this to ECON, and received a prompt answer: the SoundMeister wasn't working correctly in our test machine with an accelerator. In order to do any digitizing with this board, we had to set the system speed to "Fast" (2.8MHz). So, we couldn't go at TransWarp speed and digitize. ECON tells me that this bug is due to code in DS that is supposed to disable an accelerator during digitizing, but doesn't work for some reason in our machine. I got somewhat better results on my machine at home (which has a 7MHz TransWarp GS and a Sonic Blaster), but they were still nothing to write home about.

Our problems with the input and the software may be isolated ones, but we've had no luck resolving them, even with ECON's excellent tech help. With the SoundMeister Pro forthcoming (it will probably be released by the time you read this), I'm inclined to wait and see what it will offer that the SoundMeister doesn't—namely, full stereo input and output, along with version 1.0 of DigitalSession.

### Conclusion

I run my IIGS (along with my TV, VCR, Super Nintendo, etc.) sound output through my home stereo. My Sonic Blaster does a nice job on mono digitizing, but it won't play things like rSounds through both channels. I'd like to say the SoundMeister could supplant my Sonic Blaster, but for now, it can't. If you have the money and are patient, wait to see what the SM Pro can do. If you can't afford the Pro or don't want to wait, this board's about the same as the Sonic Blaster, with what will eventually be much better software, for about the same price. I really wanted to like this board and package, but the bugs in the software just don't let me. If ECON gets DigitalSession where it can cut the mustard, I'll recommend either board wholeheartedly. But for now, I'd adopt a "wait and see" attitude. *GS+*

## TypeSet

By Steve Disbrow and Josef Wankerl

Retail price: $49.95
Typical mail-order price: *not available at this writing*
Not copy-protected
Requires: Pointless 2.0 or later, 1.25MB RAM (more recommended), Apple IIGS System Software 5.0.4 or later (including System 6.0.1), and one 3.5-inch disk drive (hard drive highly recommended)

WestCode Software, Inc.
15015 Avenue of Science, Suite 112
San Diego, California 92128
Orders: 1-800-448-4250
Technical support: (619) 487-9233
Fax: (619) 487-9255

Reviewed by Jonathan A. McCreight

One of the nice things about having a IIGS is that when your friends with Macs show off their latest desk accessories and other cool stuff, you know that if you don't already have the same thing running on your IIGS, something similar and probably cooler will soon be available—think of Twilight II *vs* After Dark, or EGOed *vs* TeachText, for example. Up until now only Mac users could have a WYSIWYG pull-down Font menu, one that displays TrueType font names in their individual typefaces. Now IIGS owners can enjoy that same convenience with TypeSet, a New Desk Accessory (NDA) from WestCode.

TypeSet's manual is clear and well-illustrated. There's an informative introduction followed by easy-to-understand installation instructions. If you don't have at least 52K of free disk space on your System startup disk, "Installing TypeSet" includes complete instructions about which system files you can delete to make room. The Installer program first asks you to personalize your original TypeSet disk, a much better idea than any disk copy protection I've ever seen. Then, with a click of the "Install" button, TypeSet quickly installs itself in your System folder.

TypeSet does a lot more than simply generating a WYSIWYG Font menu, so the first thing you'll want to do is spend some time going through the tutorial. "Exploring TypeSet" walks you through TypeSet's features using plain English and lots of screen shots that show exactly how each feature works. Even folks with little computer savvy will quickly be able to use TypeSet's many features.

My favorite feature is TypeSet's ability to define custom sets of TrueType fonts. I have 37 TrueType fonts in my bulging Fonts folder, but I only use a half dozen of them regularly. TypeSet enables me to define a set of just those six fonts, so for my daily work they are the only TrueType fonts that appear in my Font menu. (Note: all bitmapped fonts that don't have a TrueType equivalent appear in the Font menu no matter how many TrueType fonts are displayed.) Selecting fonts is quicker now because I no longer have to scroll through a long Font menu. If I need a weird font, I can quickly select Choose Font at the top of the Font menu and pick any font in my Fonts folder. It's great.

Another of TypeSet's useful features is that it generates Font Reports for any and all TrueType fonts in the currently-selected TypeSet font set. Four report options are available:

- "All Characters" prints all characters in the font at 40-point size so you can see the smallest details of each character;

- "Key Equivalents" produces a table of keystrokes and the resulting characters. This is especially useful if you need a crib sheet to help recall the keystroke combinations to get special characters like †, or if you use fonts like Symbol;

- "Various Sizes" produces a printout reminiscent of an eye test chart, with the selected font printed in lines ranging from tiny 8–point characters to big 48–point characters;

- "Line Samples" shows up to nine different fonts on the same page so, for example, you can see the subtle differences between Berling Agency, Bodoni Antiqua, Goudy, New York, Planet, and Times. "Line Samples" puts a header above each sample line with the font name and the pathname of each font, so besides making font comparison charts you can also print out catalogs of your fonts.

The four Font Reports can be generated one at a time, or you can do several different reports as a batch. The output can be sent to the screen or to the printer. The printouts are useful when working with GS/OS programs, or NDA text editors that don't take advantage of TypeSet's WYSIWYG Font menu. They're also handy if you have used Pointless to generate bitmapped versions of your TrueType fonts to use with your 8-bit programs, like AppleWorks Classic equipped with SuperFonts. As a thoughtful touch, all Font Reports have a one-inch left margin, so that you can punch holes in them and keep your reports in a reference binder near your IIGS.

If you are a programmer, you will be delighted with the **Programmer.Info** folder on the TypeSet disk. This folder contains instructions for integrating TypeSet's WYSIWYG Font menu into programs which are not allowed to use the `FixFontMenu` call. The folder also includes interface files for ORCA/M, ORCA/C, and ORCA/Pascal. Thanks, Joe! [You're welcome. - Joe]

Most of TypeSet's rough edges result from causes outside the program. For example, when you first open a document containing a bunch of TrueType fonts, or the first time you pull down the Font menu after booting a GS/OS program, there is a delay while Pointless generates the TrueType font names (after that, as long as you stay in that program the Font menu works as quickly as it ever did). Even with an accelerator, the delay is irritating.

If you're as impatient as I am, then you'll be glad to know that the first entry in the "Trouble-shooting" appendix of TypeSet's manual gives an effective fix to this delay—set Pointless' preferences to "Use bitmapped sizes if available," then use Pointless to generate one bitmapped version of each TrueType font in 10 or 12-point, whichever size you've set TypeSet to display in the Font menu. If you have several styles of the same TrueType font (Times, Times.Bold and Times.Italic, for example), you only need to make one bitmapped version of the plain font. Also, accept the truncated names Pointless suggests for fonts with long names—they work just fine. This technique eats up 3-4K of additional disk space for each bitmapped font you add. Although it takes a small, one-time investment of your time to generate the bitmapped fonts, you'll receive an unexpected payoff—a bug in System 6.0.1 will cause the system to crash if, when you're in the Choose Font dialog, you choose a TrueType font that you have not generated any bitmaps for. This happens whether or not you're using TypeSet. The work-around is to have at least one bitmapped version of each TrueType font in the Fonts folder. So by taking the time to let Pointless generate the needed bitmapped fonts, you'll have an instant WYSIWYG display of your TrueType fonts in the Font menu, plus you'll squash the System 6.0.1 bug, all in one shot. [A more permanent work-around is the public domain INIT, "FixFontMgr" which is available on all major online services, or through most user groups and mail-order shareware vendors].

Some folks might not like how the names of special character fonts like ZapfDingbats show up as their keypress equivalents (for example, "ZapfDingbats" displays as "✹✪□❁✚✻■✳✪✪▼▲" in the Font menu). Also, certain fonts like Stencil Bold don't contain lowercase letters, so in the Font menu they display the first letter of the name followed by a string of missing-character boxes—S□□□□□□ B□□□. Neither of these eccentricities is caused by a bug in TypeSet or in Pointless—they're simply the result of the WYSIWYG font display showing you *exactly* what you would get if you typed in these fonts—but they could be annoying if you haven't memorized which TrueType fonts you're keeping in your Fonts folder.

If you'd like to fix both these quirks, first make sure you have Pointless' preferences set to "Use bitmapped sizes if available", then simply edit the bitmapped versions of the troublesome TrueType fonts with a font editor. Replace the existing symbols with real letters so, for example, instead of seeing "✹✪□❁✚✻■✳✪✪▼▲" you see "ZapfDingbats" in the Font menu. In the case of Stencil Bold, I copied the font's uppercase letters into the corresponding blank lowercase letters. Now my Font menu displays STENCIL BOLD like it's supposed to. This tinkering with the bitmapped font doesn't affect the printed output at all. It does affect the screen display, but only for the characters you change and only at that particular point size. To minimize affecting the screen display with your modified bitmapped characters, set TypeSet's settings to display the Font menu in the size characters you use least in your daily work.

The few other known bugs, plus things that some users might mistake for bugs (for example, the fact that bitmapped fonts still appear on the Font menu in the system font, not as WYSIWYG), are highlighted and explained in the "Trouble-shooting" appendix and in the Read.Me file on the disk:

• GraphicWriter III, v1.1, uses a "custom" Font menu that doesn't support TypeSet. Future versions of GraphicWriter will have a standard Font menu that will support TypeSet;

• There are some incompatibilities with The Manager v1.0 that under certain conditions may cause a system crash, but only after your work is safely saved, and you're quitting an application. TypeSet is compatible with The Manager v1.1;

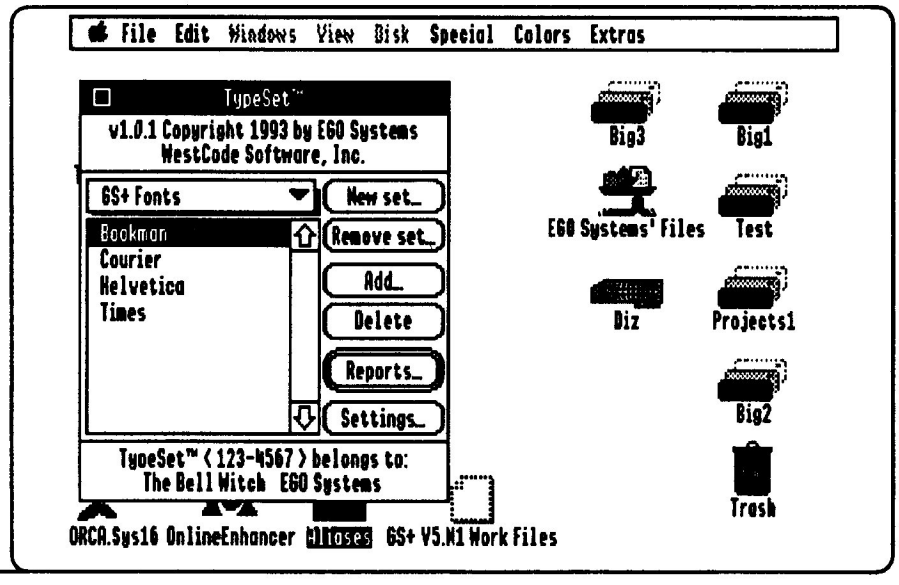
• Most New Desk Accessory (NDA) text editors don't support TypeSet because in order to work around a shortcoming of the IIGS the programmers of NDA text editors have created their own "custom" Font menus. Joe's **Programmer.Info** folder contains everything programmers need to add TypeSet support to their NDA text editors the way it was added to EGOed lite v1.0.1 (see *GS+* V4.N6);

• There's a restriction that if you use Pointless to remove a TrueType font while inside an application that uses a Font menu, the removed font will still show up on the Font menu, but you'll crash your system if you select the removed font. TypeSet's ability to switch between TrueType font sets on the fly seems to make this a non-problem.

I encountered no problems using TypeSet with a variety of GS/OS programs, both with and without The Manager running, implying thorough pre-release testing. There were a few peculiarities, such as that TypeSet is supported by Platinum Paint v1.0.1 but not by Platinum Paint v2.0. HyperStudio v3.1 also doesn't support TypeSet, but then again HyperStudio has its own WYSIWYG method of selecting fonts so it doesn't need TypeSet. Just for fun, using The Manager I cranked up EGOed lite and Teach at the same time and both TypeSet Font menus worked just fine. In using any of WestCode's products, when I've come up with a question, I've always found their staff friendly and helpful. WestCode's technical support line has an answering machine, so you only have to call once. If everyone is busy you simply leave a message and they'll get back to you. This seems a good way for a small company to give effective customer support.

Don't buy TypeSet until you have a hard drive. System 6 takes up most of a 3.5-inch disk; Pointless needs 38K; TypeSet needs 51K, and TypeSet.Prefs takes up another 3K or so. At least for my ROM 01 machine, I couldn't make an 800K System Disk that included System v6.0.1, Pointless and TypeSet. For the price of the 1.44MB 3.5-inch drive you'd need to get everything on a 3.5-inch floppy, when you can get a hard drive that's got plenty of room for TrueType, Pointless, and all your TrueType fonts plus your favorite word processor, desk accessories and other cool stuff, not to mention that in a race a hard drive will blow the doors off a 3.5-inch drive. If you don't yet have a hard drive, put it at the top of your Christmas list. You'll be amazed how much it improves your computing.

For Pointless owners who are serious about their fonts, TypeSet is a well thought-out, cleanly-executed bundle of three useful TrueType font management utilities: a WYSIWYG Font menu for many popular GS/OS applications, a font set creator, and a font report generator. It's easy to learn and intuitive to use. If you have Pointless, TypeSet is the cherry you need to top off your ice cream sundae. *GS+*



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# File Dump

By Steven W. Disbrow

File Dump started out as a simple application to demonstrate the use of object oriented programming (OOP) techniques on the IIGS. However, it turned out that File Dump was actually a useful little program, so I decided to write a users manual (which you are reading now) to go along with the "OOP on the IIGS" information. So, before we get to the technical stuff, let's look at what File Dump does, and ways that you can use it.

File Dump is a simple utility that loads in a file and lets you view it in either its raw state or in hexadecimal mode. You can look at both the data and resource fork of a file, and you can save either fork out to a simple Binary file. You can also copy information out of a fork and paste it into another application. This ability to view both forks and save or copy information from them makes File Dump extremely useful.

### The Menus

So, lets take a quick tour of the File Dump menus, then we'll get into some examples of how you can use File Dump.

### The Apple Menu

This contains a standard "About" item, as well as any New Desk Accessories that you have installed.

### The File Menu

The File Dump File menu is shorter than most—it contains only four items.

Open (Command-O) - The Open item presents you with a Standard File dialog that lets you select any type of file to load for viewing (however, you can not load a folder into File Dump). Only one file can be open at a time.

Close (Command-W) - The Close item closes the front window.

Save As (Command-S) - This item brings up a Standard File dialog that lets you specify a new binary file to save the contents of the File Dump window into. This new file is always of type BIN (file type $06), and it will only contain the data that is shown in the File Dump window. If you have used File Dump to load a file that has both a data and resource fork, you would have to save each fork in a separate file. For more information on this, see the discussion of the View menu, below.

*Warning!* File Dump will warn you if you are about to save over an existing file, but it won't stop you if you really want to do it! Be sure that you don't save on top of the original file!

Quit (Command-Q) - This item quits File Dump and returns you to your previous application.

### The Edit Menu

This is a standard Edit menu. However, only two of the items in it are actually used by File Dump (see below). The rest of the items in this menu are included solely for use by New Desk Accessories.

Copy (Command-C) - This item is only available when there is text selected in the File Dump window, or when a New Desk Accessory window is the front window. Any text that is selected in the File Dump window is copied to the system clipboard.

Select All (Command-A) - This item is only available when the File Dump window is the front window. Picking this item selects all of the text in the File Dump window.

### The View Menu

The View menu is "where the action is" in File Dump. Using the View menu, you can look at a file's data or resource fork, and you can switch between a "normal" view, and a hexadecimal view of the data in each fork.

Normal - Selecting this item makes File Dump display the currently selected fork as raw data. No formatting is done at all for the normal view.

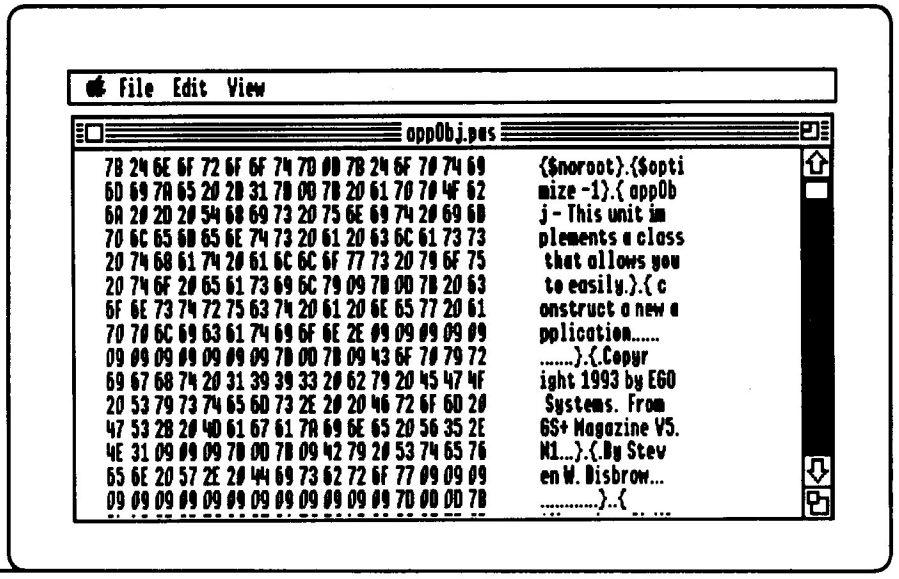
Hexadecimal - Selecting this item makes File Dump display the currently selected fork in a special hexadecimal format. Each line of this display shows 16 bytes from the file in two ways: on the left hand side of the window, the hexadecimal value of each byte is shown, on the right hand side of the window, these same 16 bytes are shown as they would appear in the normal view.

It's important to note that the hexadecimal display can take up to four times as much memory as the normal display, and it can take some time to generate. If File Dump can't allocate the needed memory, it will ask if you want it to try and create a partial display. This partial display takes up less memory, but it only shows the hexadecimal portion of the display. If File Dump can't allocate the memory for the partial display, it will inform you of the situation and take you back to the normal view.

If you're trying to get a hexadecimal display of a huge file, and File Dump is saying that it can't get enough memory, try shift-booting (hold down the shift key while rebooting) so that no system extensions will be installed. Depending on your system setup, that should free enough memory to create the hexadecimal display. If it doesn't, set your RAM disk size to zero (0K) and try again.

Data Fork - Selecting this item tells File Dump to display the data fork of the currently loaded file. If the file doesn't have a data fork (control panels, for example, have no data fork), this item won't be available.

Resource Fork - Selecting this item tells File Dump to display the resource fork of



the currently loaded file. If the file does not have a resource fork (ProDOS 8 applications, like AppleWorks Classic, should not have a resource fork), this item will not be available.

### What It's Good For

Besides satisfying your curiosity as to what is in certain files, File Dump is a wonderful addition to your arsenal of file scavenging utilities. For example, we have used it to open a Macintosh sound resource file, save the file's resource fork out to a binary file, and then load that file into Digital Session and play back the sound! (Thanks to one of our readers for suggesting this as a means of getting around the 64K limit of MacSoundGrabber! [See "Catch the .WAV: A Guide to Scavenging Sound Files" in *GS+* V4.N6 for more information on this.])

And that, in a nutshell, is File Dump. Extremely simple, but I think you'll find it extremely useful too. (Be sure to let me know what you think of it . . . and if you have a problem with it, be sure to fill out the problem form on your *GS+* Disk and send it in to me.)

Now, it is time to get really technical, and talk about File Dump as an actual example of object oriented programming on the IIGS.

### OOP On the IIGS

Before we can actually talk about how to write an object oriented IIGS program, we need to discuss a little general theory about how you normally structure a IIGS program

To create a IIGS application the "old fashioned" way, you first start up all of the tools you will be needing, and then you take care of any other initialization that you need to do. This initialization will usually include things like setting up the menu bar, adding New Desk Accessories to the Apple menu, and grabbing any memory that you may need.

After that, you crank up your main event loop. From this point on, your program simply sits there, responding to events as they happen, until the user decides to quit the application.

When the user quits, you dispose of any memory you've allocated, shut down the tools you started, and then return to the calling program.

As you can see, this is a very broad overview of what happens in a IIGS program. That's a good point, and we'll come back to it in a moment.

The really hard stuff in a IIGS application happens in the event loop. That's were you have to create controls, windows and the other elements of the desktop interface, and allow the user to interact with them. The IIGS Toolbox makes it relatively easy to create these elements, but manipulating them can be a fairly frustrating process. For example, if you have a window, and you want to have it display some graphic data, you need some way to relate that window to that graphic data. The most popular way of doing this is to use the window's `refCon` field to hold a handle to the data. Then when you need the data, you simply call `GetWRefCon` and go from there. This is nice, but object oriented programming offers us a better way.

### The OOP way

Lets back up a moment and consider our broad overview of a IIGS application. If you've written more than one IIGS program, you probably know that the code to start up and shut down an application changes very little from project to project. That makes these procedures excellent candidates for being turned into methods.

In fact, if you think about it a bit more, you'll probably come up with all sorts of things that remain the same from application to application. (This is one of the advantages of following the Apple Human Interface Guidelines, remember?) This means that, if we think broadly enough, we can probably define an application class, and turn our applications themselves into objects!

In fact, that's exactly what I've done in File Dump. The File Dump application is just an object of the class `appObj`. As you can see in Figure 1, `appObj` contains instance variables to hold our Memory Manager ID, our quit flag, our tool startup information, and the handle to our main menu bar. In addition, we have methods to handle starting up the application, shutting down the application, the selection of some common menu items, and a few other tasks. (Note: the complete source code for `appObj`, as well as the code for the rest of File Dump is on your *GS+* Disk in the **GSP.V5.N1.SEA** archive.)

At this point, you are probably thinking that this is nice, but there is no way you can write one of these methods to cover every possibility that will arise in a IIGS application. And you are right. In fact, some of these methods (notably the `DoOpen`, `DoSave` and `DoSaveAs` methods) are *intended* to be overridden by a descendant of the `appObj` class. The reason is that there is no way we can know exactly what an application is going to want to do when it gets these messages.

So, for File Dump, I simply defined a new class, `filedumpAppObj`, which is a descendant of `appObj`, and then overrode the methods that needed to change to make File Dump work the way I wanted it to. Then, using the main program shown in Figure 2, I was able to get a skeleton version of File Dump up and running in less than 10 minutes!

### Controls, Windows, and Such

Now that we've seen how an application

**Figure 1**
**The appObj Class**

```
appObj = object( tObject)
   MemoryID : Integer;
   ToolRecord : startStopRecordHndl;
   QuitFlag : Boolean;
   MainMenuBarHandle : menuBarHandle;

   function Startup : boolean;
   Procedure EventLoop;
   function Menus(theItem: Integer; windowType: Integer )
         :integer;
   procedure SetUpMenus( situation : integer);
   procedure Windows;
   Procedure ShutDown;
   Procedure DoAbout;
   Procedure DoOpen;
   Procedure DoClose( theWindow : windowObj);
   Procedure DoSave;
   Procedure DoSaveAs;
end;
```

can be turned into an object, lets see if we can apply the same principles to turning the other parts of our program into objects.

First, lets talk about windows. Windows are one of the single most important elements of the IIGS interface, and, frankly, if we can't apply OOP concepts to windows, it really won't be worth that much to us.

Fortunately, windows are similar to applications in that there are certain things that we are constantly doing with them. For instance, we are constantly creating new window, updating open windows, and closing windows. So, taking these common situations into account, I designed the `windowObj` class that is shown in Figure 3. As you can see, there is an instance variable to hold the pointer to the window, along with methods to handle (among other things) opening the window, closing the window, activating the window, and setting the window title. (For the actual implementation of these methods, I'll have to refer you to the source code on your *GS+* Disk, I'm just trying to cover the broad concepts.) Of course, while these methods will work fine for a generic window, the windows for each application are going to be different. In fact, an application may have several classes of window objects—all different, but all descended from `windowObj`.

File Dump is no exception. I have defined a descendant of `windowObj` called `fdWinObj`, that contains a bunch of new instance variables that are specific to the purpose of the File Dump window (for example, loading a file and displaying it in raw and hex formats). I have also overridden many of the methods that are defined in `windowObj`, so that I could do the extra work required for the File Dump window.

**Figure 2**
**Excerpts From the File Dump Main Program**

```
var
    myApplication : fileDumpAppObj;

begin { the File Dump Application }
    new( myApplication);
    if (myApplication.Startup) then
        begin
            myApplication.EventLoop;
            myApplication.ShutDown;
        end;
    myApplication.Free;
end.
```

The last thing I want to mention before we move on to controls is the importance of having an instance variable to hold our window pointer. You see, the IIGS Toolbox doesn't know squat about any of these objects we define, so we need some way to move from the world of the Toolbox, to the objects that we create. In this case, I do it by using an instance variable to hold the window pointer, and I use the window's `refCon` field to hold the pointer to the actual window object. So, for example, if I use `FrontWindow` to find out which window is in front, I can use `GetWRefCon` to find the object that the window is a part of. Then, inside the methods of the `windowObj` class, I can use the object's copy of the window pointer to make tool calls that affect the window. This makes it very easy to switch back and forth between object oriented methods and calls to the Toolbox.

By now, you should be able to guess that I'm going to say almost exactly the same things about implementing controls as objects. So, I'll skip the preliminaries and direct your attention straight to Figure 4. For the most part, it should all be self-explanatory. However, there are a few new things here.

**Figure 3**
**The windowObj Class**

```
windowObj = object( TObject)
   winPtr : grafPortPtr;

   procedure Idle_Window;
   procedure Hit_Window(theControl: longInt; theEvent:
         eventRecord);
   procedure Update_Window;
   procedure Activate_Window( activate : Integer);
   procedure Open_Window( winResID : longInt);
   function Close_Window : boolean;
   procedure Set_Window_Title( theTitle : handle);
end; { of windowObj }
```

First of all, notice that we have an instance variable that will hold the handle to our control. This is done for the exact same reason as was noted above for window objects. And, as you might expect, we keep the pointer to the control object in the `refCon` field of the control record.

Second, the `Set_Up_Ctl` method takes a parameter called `ctlData`. This is simply a pointer to a control-specific block of data. Each class of control will have its own use for this parameter (or perhaps it won't have *any* use for this parameter). For example, for a check box control object, this parameter could be used to specify the initial value of the check box. Simply by overriding this method, you can do whatever you want with this parameter.

Speaking of overriding methods, this is a good place to point out that, like the `appObj`, this class is *intended* to be overridden! Since there are so many different types of controls on the IIGS, it's up to the programmer to implement each different control as a class all its own.

Which brings me to another good point: these classes that I've devised for File Dump are by no means set in stone. These are just my first attempt to make some sort of sense out of using OOP on the IIGS. You are free to build off of these classes, or to devise your own. (It would have been *very* nice if the Byte Works had supplied a basic set of classes for IIGS programming!) However, I do plan to build on these classes and present them to you in future issues of *GS+* Magazine. If there is enough interest, I may even lock myself away for a week or so and try to come up with classes for *everything*.

### That's About All

So, there you have it: the basics of object oriented programming on the IIGS. Of

course, there are some holes in my description that can only be filled by looking at the complete File Dump source code. However, if you have a grasp on the basics of OOP, and you take your time while looking through the File Dump source code, everything will probably fall into place for you.

I hope you've found this article helpful. After having worked with OOP during the last two months, I really believe that I'll be able to write more, and better, programs for the IIGS. If you are a serious IIGS programmer, you really owe it to yourself to check out OOP for yourself! *GS+*

**Figure 4**
**The ctlObj Class**

```
ctlObj = object( tObject)
  ctlHandle : ctlRecHndl;
  visible : boolean;

  procedure  Set_Up_Ctl(theWindow:  grafPortPtr;  ctlID:
          longInt; ctlData : ptr);
  procedure Free; override;
  procedure Hit_Ctl( theEvent : EventRecord);
  procedure Deactivate_Ctl;
  procedure Activate_Ctl;
  procedure Show_Ctl;
  procedure Hide_Ctl;
end; { of ctlObj }
```

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# Cool Cursor v2.0.1

By Josef W. Wankerl

I was so close! Just one misplaced instruction. But, these kind of cosmically injust things do happen. Yes, Cool Cursor v2.0 has a very small bug in it. I'm actually surprised anyone caught it. But, if you've run Your Money Matters with Cool Cursor v2.0 installed, no doubt you've seen what I'm talking about. Whenever a call to `WaitCursor` was made, Cool Cursor correctly turned on the wait cursor, *but* it also returned an error when there wasn't one. Your Money Matters seems to be checking for errors after *every* tool call it makes, even ones that don't need to be checked, like `WaitCursor`. The `WaitCursor` call shouldn't be returning errors, and if it is, your system is so far underwater that you should probably break out your scuba gear. Of course the errors that Cool Cursor v2.0 were returning were false, so you probably only needed a mask and snorkel, and only then when running Your Money Matters. [Can we all guess who's started taking scuba classes? —Michelle] The only difference between Cool Cursor v2.0 and Cool Cursor v2.0.1 is that the `WaitCursor` call no longer returns bogus error codes.

### Faster Booting

Some people have complained that it takes their system too long to boot when they have a lot of cursors in their ***:System:CDevs:Cursors** `directory`. This is because Cool Cursor keeps the last known modification date of the cursors directory around in its preferences file, and if the modification date on the cursors directory at boot time is later than the last known date, Cool Cursor rebuilds the list of cursors it knows about (which can take some time). The way to make Cool Cursor remember the current set of cursors is simply to open up the Cool Cursor control panel. Cool Cursor will then rebuild the list of known cursors and save out the new modification date. The next time you boot your system, Cool Cursor will use the remembered list of cursors instead of looking inside the cursors directory for all the cursors. The moral to this story is that whenever you make any changes to your cursors directory, you should make a habit to simply open the Cool Cursor control panel so your changes are recognized.

### Need I Say More?

That's basically all there is to Cool Cursor v2.0.1. If you find a problem with Cool Cursor, please fill out the problem report form on your *GS+* Disk and send it in. *GS+*

## What Is Cool Cursor

*Cool Cursor is a control panel which lets you change the drab static watch cursor into an exciting animation of your choice. Cool Cursor supports smooth cursor animations, random cursor selection, speedy control panel opening, and much, much more! Custom cursor animations can be created for the Cool Cursor control panel by using the Anna Matrix application.*

# Cool Cursor Contest Winners

Well, September 17th has come and gone, and we've wrapped up our Cool Cursor contest. So, was it a success? You bet! We received 80 different cursors from 17 different contestants! So, without further delay, let's get right to the honorable mentions and our three winners.

Our first honorable mention goes to Lunatic Bruce E'Sex, and his Moon cursor. This cursor (which we originally presented on the *GS+* V4.N5 disk as an example cursor), is a really slick cursor that shows all of the phases of the moon. (It should also be mentioned that this was one of the first entries we received and that Luny created this cursor *without* the use of Anna Matrix.)

Our second and third honorable mentions go to the fabulous Bytnar Brothers, Steve and Mike. These fellows submitted a bunch of great cursors, but our two favorites were Beating Heart and Grandfather Clock. These are exactly what the names suggest, and they are very cool indeed.

Taking third prize (a *GS+* T-Shirt and a one issue subscription extension), is David Zadrozny's Musical Notes cursor. This cursor shows you a musical staff with notes dancing on it. This is a very inventive cursor and a nice example of cursor animation.

Taking second prize (a *GS+* T-Shirt and a two issue subscription extension) is Ken Watanabe's Spirograph cursor. The only way to describe this cursor is that it's, way way cool. Neat colors and a nice overall effect.

Finally our first prize (a *GS+* T-Shirt and a three issue subscription extension) goes to Eric Sheppard and his Counting GS cursor. This one has it all: it shows the passage of time by counting down from 10 to 1 (remember, these are supposed to be *wait* cursors), and it does it on the screen of a miniature IIGS. Nice work Eric!

All of these cursors, and some of our other favorite entries, are on your *GS+* Disk. To use them, install Cool Cursor (the latest version is also on your *GS+* Disk), and install the cursors you want using the Installer program that is on your *GS+* Disk. For more information, see the "How to Use Your *GS+* Disk" article elsewhere in this issue.

With 80 different cursors entered, we had a very hard time picking the winners—there were a lot of great entries! So, we've taken some of our other favorite entries and put them on your *GS+* Disk as well. Among these you'll find a Christmas tree, a metronome, a flying skull, a running man, and a neat little tic-tac-toe cursor. For complete information on each of these bonus cursors, be sure to check out the **a.Read.Me** file on your *GS+* Disk.

Our thanks to everyone that entered for making this contest a success! We hope that everyone enjoys these cool cursors! *GS+*

# Anna Matrix v1.0.1

By Josef W. Wankerl

Like Cool Cursor v2.0, Anna Matrix v1.0 had some bugs of its own. First and foremost, the documentation forgot to mention the fact that you need to give your cursors a name! Oops. Naming your cursor is *extremely* important. The name you give your cursor is shown in the list of cursors which Cool Cursor displays. There aren't any restrictions on what can make up a cursor name—it can contain any normal and special characters that you want, but you shouldn't make it any longer than the Cool Cursor list can display. Some of you were probably confused when you saved your cool cursor document with a name like "My.Cool.Cursor" and it showed up as a blank entry in the Cool Cursor list of cursors. This phenomenon is due to the fact that the cursor name is in *no way* related to the cool cursor document filename. To remind you to name your cursor, Anna Matrix v1.0.1 prompts for a name a bit better, with an actual "Name:" identifier before the LineEdit box.

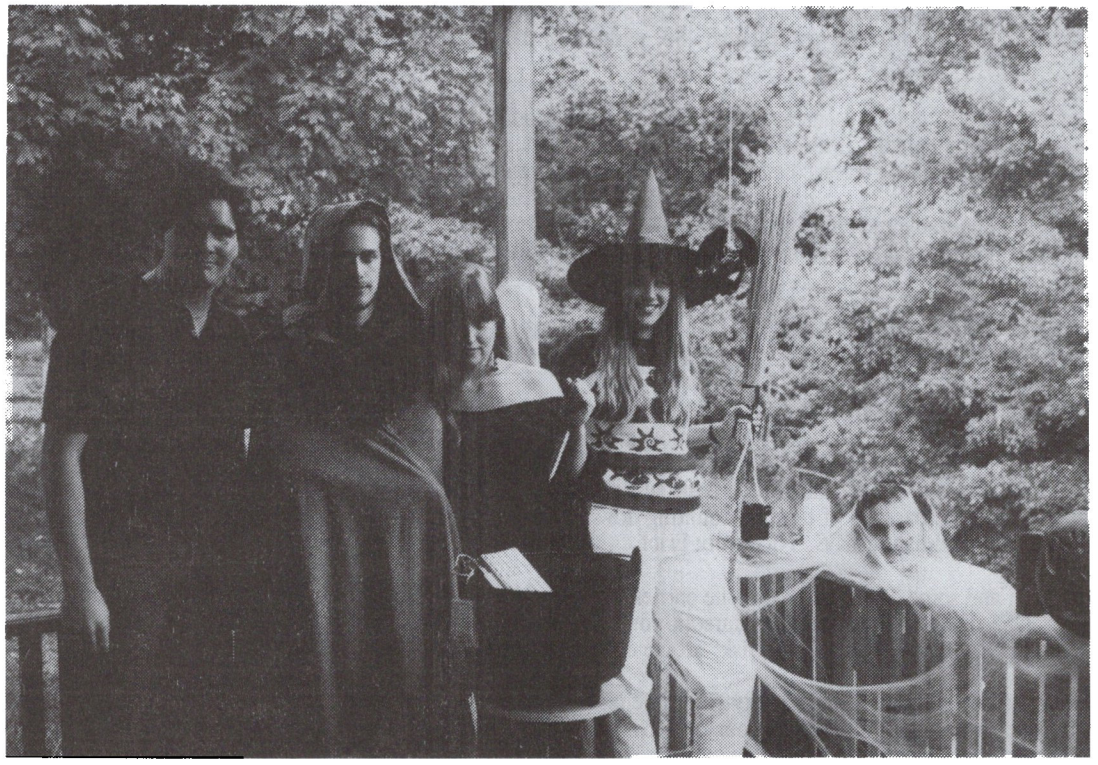
The only real bug that was fixed in Anna Matrix was a cosmetic one. When you had a cursor edit field that extended past the visible part of a window, the cursor changed to a pencil even if you weren't over the window. This was simply because the main event loop wasn't checking to see if the cursor was in the visible portion of the window before checking to see which area of the window the cursor was over.

## Anna Matrix

*Anna Matrix is an application that allows you to create your own cursor animations for Cool Cursor and save them as Cool Cursor documents. You can also modify any existing cursor documents. Anna Matrix works in both 640 and 320 mode so you can generate beautiful cursors no matter which graphic mode an application runs in.*

Now even though the Cool Cursor contest is over, this doesn't mean that you have to stop using Anna Matrix! We love to see the cursors that you've made! Hopefully we'll start a department similar to the old Icons department where we'll showcase cursors for Cool Cursor in each issue instead of icons for the Finder.

Anna Matrix was a fairly large undertaking for me for such a short schedule, but I'm fairly confident that it's bug-free (or at least free of the monster ones). If you have any problems with Anna Matrix, please be sure to fill out and send in a Problem Form so that I can fix them. Also, if you have suggestions for enhancements to Anna Matrix, I'd like to hear those as well. ***GS+***



Happy Halloween from all the ghouls at ***GS+*** Magazine!

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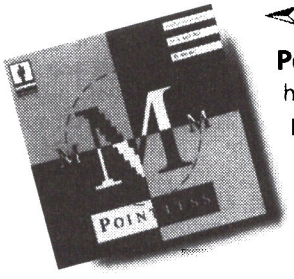

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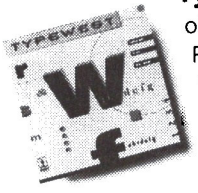
The quick brown fox
The quick brown fox

ImageWriter II printing before and after Pointless



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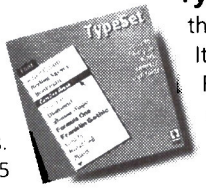

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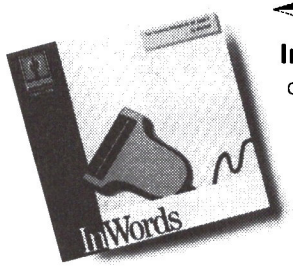

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# The GS+ Index: Part 1

By Steven W. Disbrow

Almost since the day we started publishing, we've had requests for an index of the programs and reviews that we've printed. So, to celebrate our fourth anniversary, I decided to try and compile an index of the programs and reviews that we've published. (We'll publish an article index in a future issue.) What I found was that, over these four years, we've published 41 original programs, and reviewed 191 IIGS products! That's quite a lot of ground to cover, so I've decided to split it into two parts, each one covering two of the four years that we've been publishing.

In the program index, you'll find the name of the program, the issue it first appeared in, the issue the *latest* version appears in, and, finally, a brief description of the program. Programs are listed alphabetically for each volume, and not by the issue they appeared in.

In the review index, you'll find a listing of each issue in a volume, followed by the names of all the products that were reviewed in that issue. (I'm not listing page numbers, because they will be irrelevant if and when we get our computerized back issues out.) Reviews are listed alphabetically for each issue.

### *GS+* Volume 1 Programs

**Desk Color**
Current version: v1.0 from *GS+* V1.N4

Desk Color is a control panel that gives you control over the color of your IIGS desktop.

**EGOed**
First appeared in *GS+* V1.N2
Current version: v1.9 from *GS+* V4.N3

EGOed is a new desk accessory text editor. From within any desktop application that correctly supports new desk accessories, you can use EGOed to edit and print generic ASCII text files, AppleWorks Classic Word Processing files, Teach files, and APW/ORCA source code files. You can also read in AppleWorks GS word processor files, but you cannot write them, yet. To open one of these documents, simply double-click on it in the Finder. EGOed allows you to have as many windows and files open as free memory will allow. EGOed also has the most powerful find and replace functions of any IIGS editor. With EGOed, you can find and replace not only text, but font, size and style information as well! EGOed also has a graphic ruler that allows you to precisely place margins and tabs in your documents! (Note that all this power comes at a price: EGOed requires System 6.0 or later, and a hard disk.)

**Mouse Position**
Current version: v1.0 from *GS+* V1.N6

Mouse Position is a new desk accessory that gives the position of the mouse in both global and local coordinates. It's useful for programming, graphics, and lots of other applications.

**NoDOS**
First appeared in *GS+* V1.N1
Current version: v1.8 from *GS+* V4.N4

NoDOS is a new desk accessory which provides the ability to delete, rename, move, get/set file information, and validate files from inside any desktop program.

**PreFixer**
Current version: v1.0.1 from *GS+* V1.N6

PreFixer is a control panel that allows you to view, edit, set, save, and load any or all of the 32 prefixes that GS/OS uses to find files on your disks. This makes it extremely handy for programming.

**Rotator**
Current version: v1.0 from *GS+* V1.N3

Rotator is a simple IIGS desktop application written in ORCA/C, with four menus, two windows, new desk accessory support, and, just to make things interesting, a slowly rotating 3-D hexagon. Rotator is meant as a tutorial for creating desktop applications.

**Transfusion**
First appeared in *GS+* V1.N6
Current version: v1.1.1 from *GS+* V2.N4

Transfusion is a new desk accessory which takes advantage of the Apple IIGS's internal modem port to allow simple communication functions along with XModem file transfers. At this point, Transfusion will only work with external modems, but an internal modem device driver is currently in the works.

Transfusion lets you go online from within any desktop program that correctly supports NDAs (most desktop programs). The file transfer routines take place in the background. This means that you can use Transfusion to connect to your favorite BBS, start a file transfer, and continue working on your IIGS while the transfer takes place. You'll notice a loss of speed because Transfusion is chugging away, but it's much better than the machine being unusable for the duration of the file transfer!

### *GS+* Volume 2 Programs

**Autopilot**
First appeared in *GS+* V2.N5
Current version: v2.0 from *GS+* V4.N1

Autopilot is a simple program launcher with a few neat twists. It lets you create a list of applications that you use frequently and launch them with a click of the mouse. Also, it has an "autolaunch" feature that lets you select one of those applications to be your startup application. The next time you boot your computer, that application will be launched instead of the Finder. Autopilot also allows you to open certain data files along with applications, and to automatically set the speed of your accelerator card (both the TransWarp GS and the Zip GS are supported), before launching a particular application.

**Battery Brain**
First appeared in GS+ V2.N1
Current version: v2.0 from *GS+* V4.N3

Battery Brain is a control panel that allows you to save to disk, and later restore, your battery RAM configuration. Aside from being useful as insurance against a dead battery, these battery RAM configuration files are also useful if you have a room full of inquisitive students or a IIGS full of expansion cards that require your system to be set up in a particular fashion.

Battery Brain also maintains a "default" battery RAM setup. When you boot your computer, Battery Brain checks your current battery RAM configuration against your favorite default setup, and, if they differ, you have the option to change the current configuration to your default setup. This is really useful for detecting if some program has messed with your battery RAM configuration.

If that weren't enough, Battery Brain will also remember and allow you to save the bad battery RAM configuration!

Then, you can use our Batt Reporter program (from *GS+* V4.N3) to compare the bad configuration with your default configuration, allowing you to pinpoint

exactly what has been changed in your battery RAM.

**EXE Launcher**
Current version: v1.0 from *GS+* V2.N1

The Finder is a wonderful utility program and launcher, but it has its limits. The Finder can only launch files with the type SYS or S16. EXE Launcher provides a mechanism for launching EXE files from the Finder. Not all EXE files can be launched this way, but a good number of them can be. The documentation for EXE Launcher also describes how you can set your system up to launch BIN files.

**GW Library**
Current version is from *GS+* V2.N3

The GW Library is a programming aid if you ever want to write a translator module for GraphicWriter III, or if you want to convert quotes on a selection of text. The GW Library provides three functions - displaying the custom Get and Put dialogs for translators, and the convert quotes function. (Note: The ConvertQuotes function in the GW Library is not as enhanced as the one in the Miscellaneous Library [from *GS+* V4.N1]).

**MacZombies**
Current version: v1.0 from *GS+* V2.N6

The object of MacZombies is to have the enemies (the "Evil Mac Computers") destroy themselves by having them walk into each other. The player is almost unarmed with only having to rely on the fact that the enemies will always take one step directly towards the player with no regard for what is in their path. By maneuvering the player between debris caused by previous enemies destroying themselves, the player can cause other enemies to wipe themselves out. An enemy can be destroyed be either colliding with another enemy, debris from a previous explosion, a view of an advertisement of a IIGS or colliding with the player (which ends the game). The enemies will always take the shortest path to the player and this is their downfall.

**OS Library**
First appeared in *GS+* V2.N4
Current version: the OS Library has been replaced by the Miscellaneous Library (from *GS+* V4.N1).

**PING**
Current version: v1.0 from *GS+* V2.N1

PING is a IIGS-specific version of the classic game, Video Table Tennis. The premise is simple. In the two-player mode, each player uses their on screen "paddle" to return a "ball" which is bouncing between the players. If you miss the ball, your opponent gets a point. Generally the game is played to 21, and the first person to reach that score wins. Simple, right? The PING source code is also a great example of how to write a video game.

**Quick DA**
First appeared in *GS+* V2.N4
Current version: v2.0.1 from *GS+* V4.N1

Quick DA (formerly known as "Quick NDA") provides key equivalents for your favorite system extensions (new desk accessories, control panels, and classic desk accessories). Are you tired of always having to move your mouse to the Apple menu, pressing the button down and holding it, moving your mouse to your favorite NDA, then finally releasing that button? That's a lot of work, and a lot can go wrong—like letting up on that mouse button too soon! And it's even more of a hassle to pick a control panel or classic desk accessory!

Quick DA makes your life easier by letting you pull up your favorite new desk accessories, control panels, and classic desk accessories with a single keystroke! All you have to do is hold down the control key and press the appropriate number on the numeric keypad (or function key on your extended keyboard) that you have assigned to the system extension, and Quick DA will open it for you!

**RAM Namer**
First appeared in GS+ V2.N3
Current version: v2.0 from *GS+* V3.N2

RAM Namer is a control panel that allows you to rename any of your RAM disks at boot time.

**Shuffle**
First appeared in *GS+* V2.N1
Current version: v2.0 from *GS+* V3.N5

Shuffle is a Permanent Initialization File (PIF) which lets you cycle through the windows on the screen with the press of a few keys.

Simply press three keys, and the front window is sent to the back. Shuffle can also present you with a list of all currently open windows. Just pick the window you want to work with from the list, and Shuffle brings it to the front for you!

**Softlock**
First appeared in *GS+* V2.N6
Current version: v1.0 from *GS+* V2.N5

Do you ever have trouble with people using your computer against your wishes when you are not around? Softlock is a new desk accessory that provides a solution. Softlock is a password-protection system for your Apple IIGS. Its purpose is to keep unauthorized people from using your computer. Once installed, it brings up a dialog box when you start up your computer and asks you for a password. No one is allowed access until the correct password is typed. In addition, if you ever need to leave your computer, you can bring up Softlock at any time while your computer is running to protect it until your return.

It is important to realize, however, that Softlock is intended to protect a computer from casual users only. A knowledgeable user can get around the password-protection system, but you can minimize this risk by taking a few precautions.

**Teach Translator**
First appeared in GS+ V2.N2
Current version: v1.1 from *GS+* V2.N3

Do you have GraphicWriter III? Do you have Teach files? Do you wish GraphicWriter III and Teach were compatible? Well now they are! Using this translator, you can import Teach files into GraphicWriter III documents, and you can also take the text from a GraphicWriter III document and export it to a Teach file. The Teach translator does all of this, and the formatting remains intact!

You can also convert quotes during the conversion process. This takes the normal straight quotes and converts them to the prettier curly quotes. (Note: If you have GraphicWriter III v1.1 or later, the Teach translator is included with the program.)

**The New Order**
Current version: v1.0 from *GS+* V2.N4

The New Order is a new desk accessory that lets your reorder the contents of your directories. It's basically a "no frills" utility. You can sort your directory alphabetically, and you can arrange each file one by one. This is handy for (among other things) changing the order in which desk accessories are loaded into your system.

Another place The New Order really comes in handy is that its source code contains a multitude of useful examples of IIGS programming! The New Order contains examples of how to use the List Manager, how to code ORCA/C functions in assembly language, how to use resources with NDAs, how to make a

custom Standard File dialog that only displays directories, how to save and restore prefixes around Standard File calls conforming to the *GS+* proposed standard of prefix saving for desk accessories, and how to interface ORCA/C with libraries that don't follow ORCA/C's calling conventions.

**Watchdog**
Current version: v1.0 from *GS+* V2.N6

Watchdog is a control panel that provides you with notification and interception of Operating System (OS) calls. What that means is that Watchdog patches into GS/OS and will notify you whenever a read or write call is being made! Watchdog can notify you in three different ways: by clicking the speaker, by changing the border color, or by changing the color of the apple symbol at the top of the Apple menu. Red means that GS/OS is writing information, Green means that GS/OS is reading information, and Yellow means that another type of GS/OS call is being executed. If, for example, you are the owner of an internal hard drive and are curious as to what is going on with your hard drive, Watchdog makes a great disk activity indicator! And, with its ability to intercept Format, Erase and Destroy calls, Watchdog also offers you protection from accidental formatting and erasure of your disks as well as giving you another line of defense against poorly written shareware software.

### *GS+* V1.N1 Reviews
Arkanoid II
Crystal Quest
HyperStudio
ORCA/C
Rocket Ranger
Silpheed
TransWarp GS
Turbo Mouse ADB

### *GS+* V1.N2 Reviews
BattleChess
Cutting Edge Keyboard
Dark Castle
Dungeon Master
Laser Force
Neuromancer
TML Pascal II
TML Source Code Library II

### *GS+* V1.N3 Reviews
Graphic Disk Labeler
HyperStudio v2.0
Keef the Thief
Life & Death
Manhunter
Programmer's Online Companion
The Three Stooges
Xenocide

### *GS+* V1.N4 Reviews
Ancient Land of Y's
Computer Eyes
InnerDrive Hard Drive
Jam Session
ORCA/Disassembler
Salvation: Bakkup
Tunnels of Armageddon
Vulcan Hard Drive

### *GS+* V1.N5 Reviews
CMS 45MB Removable Hard Drive
DataLink Express
GraphicWriter III
Math Blaster Plus IIGS
McGee
S&S-RAMCard
The New Talking Stickybear Alphabet
Visionary GS
ZapLink

### *GS+* V1.N6 Reviews
AMR 3.5-inch Drive
Blockout
Disk Access
McGee Visits Katies Farm
MD-Basic
Omega
Revolution '76
Salvation: Exorciser
Task Force
The Duel: Test Drive II
The Hunt for Red October
Where in the USA is Carmen Sandiego?

### *GS+* V2.N1 Reviews
GS Sauce Memory Card
Orange Cherry Talking Schoolhouse
QIX
Salvation: Wings
Solitaire Royale
World Geograph

### *GS+* V2.N2 Reviews
Applied Engineering 3.5-inch Drive
Captain Blood
Hostage: Rescue Mission
LightningScan
Pipe Dream
Pirates
Questmaster: The Prism of Heheutotol
Quickie Hand Scanner
Rastan
Salvation: Renaissance
The Immortal
USA Geograph

### *GS+* V2.N3 Reviews
2088: The Cryllan Mission
Design Your Own Home
Dragon Wars
Print Shop Companion GS
Sinbad and the Throne of the Falcon
Space Ace
*Your IIGS Guide*
Zip GSX (the original Zip model)

### *GS+* V2.N4 Reviews
Allison Digitizing Software
Halls of Montezuma
Harmonie
Independence
InWords
MAX/Edit
Software of the Month Club
S Super GS Award Maker
Talking Speller II

### *GS+* V2.N5 Reviews
Bouncing Bluster II
HyperCard
HyperStudio
McGee at the Fun Fair
RamFAST/SCSI Card
Space Shark
Talking Classroom
Talking Multiplication & Division
The HyperStuff Collection
TMS Pro 45MB Removable Hard Drive
Transylvania III

### *GS+* V2.N6 Reviews
2088: The Cryllan Mission - 2nd Scenario
GeoQuiz
GS Memory Board
Jungle Safari
Panzer Battles
Photonix II
ProDev DDT16 Debugging Card
Reach for the Stars
Software Development Environment
Space Shuttle Word Problems

Next Issue: Part two of our index, featuring Volumes 3 and 4 of *GS+* Magazine

# Glossary

In each issue of *GS+* Magazine, we present a glossary of some of the more common terms in the IIGS world and some of the more uncommon terms that we use in each issue. If you have a term or bit of jargon that you would like to see explained, let us know and we'll try to get it in a future "Glossary" installment. Also, don't forget about the glossary that's in your IIGS owner's manual! At this point, it contains many more terms than the *GS+* Glossary!

Past installments of the *GS+* Glossary can be found on your *GS+* Disk in the plain ASCII text file, **Glossary**, in the **Documentation** folder. (Entries marked with an "*" have appeared in previous installments of the *GS+* Glossary and are repeated here for our beginning readers or because they have relevance to topics discussed in this issue.)

### AppleTalk
AppleTalk is the networking protocol built into every Macintosh and Apple IIGS computer. It describes how devices can talk to each other over physical connections such as LocalTalk or EtherNet (see below).

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

### Compact Disk-Read Only Memory (CD-ROM) *
Basically, this is simply a compact disk (physically similar to the one's you buy at a music store), that can contain text, pictures and sound, instead of just music. Generally speaking, CD-ROMs are not usable in an audio (music) CD player.

A CD-ROM can hold well over 600 megabytes of information, making it ideal for distributing large amounts of information (similar to an encyclopedia).

### Cursor*
A cursor is a small picture that appears on the computer screen to tell you where your mouse is currently positioned.

### EtherNet
EtherNet is a means of connecting two network devices together. EtherNet is a *very* fast connection medium. EtherNet, along with LocalTalk (see below) is built into some high-end Macintosh models. However, to use EtherNet on other Macintosh products requires special hardware and softwarre. Apple planned to sell EtherNet hardware for the IIe and IIGS, but cancelled the product.

### Hard Disk Partition
A hard disk partition is a section of a large hard drive that is treated as a separate disk drive.

### High Density Disk
A high density (3.5-inch) disk is a disk that can hold approximately twice as much information as a double density (3.5-inch) diskette. A high-density disk can hold 1.44MB of information. To use a high density disk on the IIGS, you must use an Apple SuperDrive disk drive (or an equivalent drive), attached to an Apple II SuperDrive Controller Card.

### ISO
"ISO" stands for "International Standards Organization." The ISO is a committe that sets international standards for things. For example, in the computer field, there is an ISO standard for implementations of the Pascal programming language.

### LocalTalk
LocalTalk is a means of connecting two network devices together. LocalTalk is built into every Macintosh and Apple IIGS computer. LocalTalk is not as fast as EtherNet (see above); however, since LocalTalk comes out of the box with your IIGS and most other Apple products, it is widely used.

### MS-DOS
"MS-DOS" stands for the Microsoft Disk Operating System. This operating system is used on most IBM PCs and compatible computers. Using the MS-DOS FST (see below) and the appropriate hardware, the IIGS can read MS-DOS diskettes.

### MS-DOS FST
The MS-DOS FST (File System Translator) is a read-only FST that comes with Apple IIGS System Software v6.0.1. If you have an Apple SuperDrive (or an equivalent disk drive) attached to your IIGS with an Apple II SuperDrive controller card, this FST allows your IIGS to read disks formatted for use with MS-DOS. At this point in time, this FST will *not* allow you to write data to an MS-DOS disk.

### Network
A network is a collection of computers and peripherals, that communicate with each other via special software and hardware. Connecting a computer to a network lets it share information with other users on the network and use peripherals on the network.

### OOP
"OOP" is short for "object oriented programming." OOP is a programming method that treats data, procedures, and functions as small parts of a larger whole: the object. Basically speaking, an object is made up of a data structure, along with the procedures and functions that are used to manipulate that data structure.

### Partitioning
Partitioning is the act of splitting one physical hard disk into several smaller logical disks, that your IIGS will see as separate disk drives. Partitioning is required if you want to use ProDOS on a hard disk larger than 32MB (the maximum disk size that ProDOS can recognize is 32MB).

### SuperDrive
A "SuperDrive" is a 3.5-inch Apple brand drive that can read and write high density, 1.44MB 3.5-inch floppy disks, as well as older low (400K) and double density (800K) diskettes. SuperDrives also have the ability to read and write data using a variety of disk formats, including ProDOS, HFS, and MS-DOS. (Note that there are third party drives, such as the Applied Engineering High Density 3.5-inch disk drive [see review in this issue], that are equivalent to the Apple brand SuperDrive.)

### What You See Is What You Get (WYSIWYG)
"What You See Is What You Get" (WYSIWYG—pronounced "Wizzy-Wig") means that what you see on the screen is what you should get on paper. Unfortunately, this is a promise that lots of software packages make, but few, if any, actually deliver on. *GS+*

# GS+ Classifieds

Readers can place an ad in the *GS+* Classifieds for only $5. This cost buys 25 words in one issue of *GS+* Magazine. Additional words are just 25 cents each. The *GS+* Classifieds are a great way to contact thousands of other IIGS owners.

The deadline for inclusion of a classified ad in the next issue (Volume 5, Number 2) of *GS+* is November 12, 1993. 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) 843-3988, Monday through Friday between 9 a.m. and 6 p.m. Eastern Time, to place an ad with your MasterCard or VISA. You can also FAX us your classified ad by calling our FAX number: (615) 843-3986.

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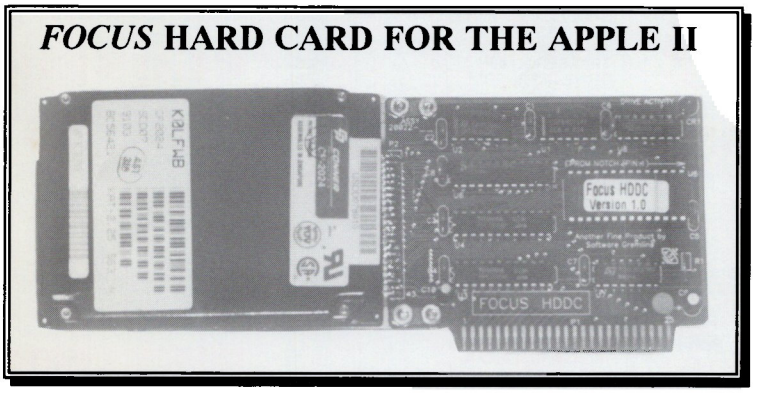


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