

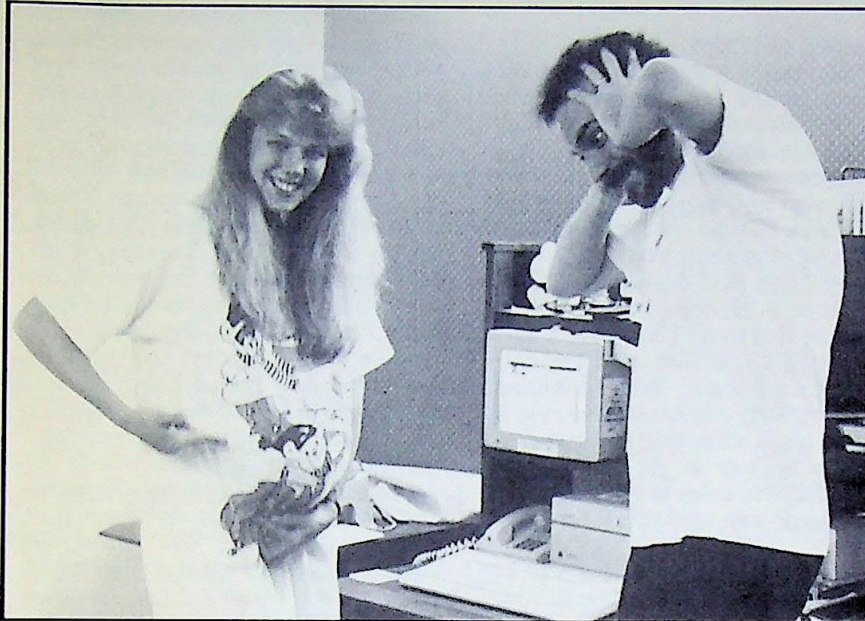


TM

November
December
1992

Volume 4
Number 2

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



Don't You Wish You
Could *Undo* All Of
Your Mistakes?

Well, With
EGOed v1.8
You Can!

(And You Can *Redo*
them too!)

Features

Understanding Accelerators
The Basic IIGS
Working With The Toolbox - Part 9: The Menu Manager

Other Programs

Font Reporter • Replicator v1.3.1

Reviews

AutoArk • GEM Apple II CD-ROM
IIGS System Transport Case
Out Of This World • TrueType Font Collection • Universe Master
The Desktop Enhancer v2.0 • Pointless v2.0

Plus

More Casual 6!
And The Usual Assortment Of Politically Incorrect
Photos, Rumors & Humor

Once More, With Feeling!

You may have noticed that the young lady I hired two issues ago did not have her name in our last issue. That's because she left us rather suddenly, and didn't actually help out with the last issue. And, in addition to the fact that we were at the Apple EXPO East and we all caught colds on the way back from that very show, that's one of the reasons last issue was so very late getting to you.

However, while she was here, she did help out tremendously and I got quite used to having her handling the orders and all of the other time-consuming (and very important!) tasks that kept me from actually working on the magazine. So, with that in mind, I've hired yet more help—my good friend Robert "Bob" Ribaric. Rob's written a few reviews for us before, and he's been a great deal of help in the past with subscription mailings and the like. He'll be taking over order entry and fulfilment, as well as writing some reviews for us. Hopefully, he won't be running off to California to get married anytime soon! (Congratulations Michelle!)

And, as a happy side-effect of the fact that Rob is a "starving student" and can only work at night, he has agreed to answer the phone while he's here. However, Rob doesn't really know that much about the technical side of things, so he'll only be able to take orders (or to check out problems with orders). So, effective immediately, our new order line (1-800-662-3634) hours are: Monday through Thursday — 9 a.m. to 9 p.m. Eastern Time and Friday 9 a.m. to 6 p.m. Eastern Time. The technical support and inquiry line (1-615-843-3988) will be open from 9 a.m. to 6 p.m. Monday through Friday. Hopefully, these extended hours will help out our west coast customers that aren't able to get in touch with us before 6 p.m.

FAXual Dysfunction

If you've tried calling our FAX line, chances are you've gotten our answering machine instead. Sorry about that, but I don't quite have the hang of this new-fangled FAX technology. In the meantime, if you are trying to send us a FAX and you get switched over to the answering machine, press *39 on your phone and that should activate the FAX machine.

Westward No!

At this point, I don't think that *GS+* Magazine will be attending the Apple

EXPO West in San Francisco this April. The EXPO East was a financial washout for us and, at this point, I simply can't justify the cost of going to the west coast show. However, I may send Joe or myself to just wander around the hall and report on the show. At this point, I really want to concentrate all of our resources on expanding our subscription base and getting the magazine back on schedule.

Speaking of Which

The main way I'm trying to expand our subscription base is by the use of direct mail. As I reported last issue, we recently took part in the CarePak '92 mailing. The response to this has been very good so far, and they only went out just a month and a half ago. In addition to that, I am trying to purchase mailing lists from as many Apple IIGS developers as I can and I hope to be doing some mailings from those lists soon. There are just over 1 million IIGS's out there and we've only scratched the surface. With advertising costs being what they are in the Apple II world, I really think that direct mail is going to be way to go, and I think mailing lists are about to become a very hot commodity among Apple II vendors.

Which, of course, means that I will be making *our* mailing list available to other Apple II vendors. However, I will be making our list available only to *Apple II* vendors, so you don't have to worry about me selling your name to some political party or anything scary like that. However, if you don't want your name to go out to *anybody*, be sure to drop us a line so that we can exclude your name from any lists we do sell.

Too Technical?

Yeah, I agree, the last few issues of *GS+* Magazine have been *way* too technically oriented. So, this time out, we've got more reviews of stuff that *everyone* can use, more of user-oriented and informational articles, and a new program specifically for our beginning and mid-level users (although I think that our power-users will find it useful too).

New Disk Format

The response to our use of a Self-Extracting Archive for the source code and other technical materials on the *GS+* Disk has been received with almost universal approval (there were one or two people that bemoaned the 12K that was "wasted" by switching to a Self-Extracting Archive), so unless we get a flood of feedback forms telling us it stinks, it's

going to become a permanent fixture on the *GS+* Disk. Be sure to let me know what you think by filling out your feedback form and sending it in.

Problems, Problems

Last issue, I begged and pleaded for folks to fill out and send in a problem form if they were having a problem with one of the programs on the *GS+* Disk. Thankfully, all the begging worked, and we began to get more problem forms. While that kind of sounds bad (more problems = more bugs, right?), it isn't really. There were only two real bugs reported (that I can remember), both of which were in EGOed and both of which are fixed in this issues update. More often what we found was that people simply were not reading the documentation for the programs before filling out and sending in the problem forms. For example, the number one problem we had reported was that folks were having to reinstall their System Software to get rid of Autopilot, because they "could not get it to quit working." (i.e. They could never get back to the Autopilot launch list to change autolaunch applications.) All this, even though it clearly states in the Autopilot documentation that you simply put down the caps lock key to get into Autopilot when you restart your computer. When I would call up these individuals to explain the problem to them, I was usually told that they simply didn't have the time to read the documentation.

Reading back over that, I guess I sounded a little mean. That wasn't my intention. My intention is to point out how *very* important it is to read the documentation for *any* program that you buy, no matter who makes it or how intuitive it's supposed to be! In my experience, about 90% of all of the problems that have been reported to us here at *GS+* Magazine (and in my past lives working with other computers for other companies) could have been resolved by the user, simply by carefully reading the documentation that came with the program in question.

Which is not to say that you should *never* call us or send in a problem form. If, after reading the documentation and looking over the "common solutions" section at the top of the problem form, you still have a problem, *please* fill out the problem form and send it in! We want to make it right! **GS+**

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On The Cover

It's only a joke, folks. Nory's really not pregnant . . . yet.

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Letters

Even though we are always stressing hard disks, the fact is that there are always alternatives.

Here's one for you to consider, along with a few neat uses for some of the programs we've published here in GS+ Magazine . . .

Dear Joe,

Just thought I'd let you know what I'm doing with some of the programs you've written. I'm using a Woz Limited Edition Rom 01 IIGS. I've never been able to afford a hard drive yet, probably because I want the best (100MB minimum with C.V. Tech's RamFAST). But I've never missed it that much because I've always had a RamKeeper with [2.5MB of RAM on it]. I've always had the System Software in battery backed-up RAM and it always would boot up when I turned the computer on, just like a hard drive. When System 6 came out, a 1.3MB ROM disk was no longer large enough to hold my System Software and the increasing cool add-ons from GS+ Magazine. So to get by until I can get a hard disk, I read in Roger Wagner's newsletter about a new 4MB RAM card for under \$150 and ordered it right away. I was surprised at how easy it was just to remove the Apple 1MB card and plug in 4MB and now have over 6.5MB to play with. My ROM disk is now 2MB+ and growing with plenty of room left over to run memory hungry applications and still boot up to the Finder in a few seconds! I love my GS! Autopilot [from GS+ V4.N1] saves loads of time even without a hard disk. Now I can boot directly into my communications document for AppleWorks GS without starting AppleWorks GS from the Finder and then opening the file. It's great! . . . I think Quick DA [from GS+ V4.N1] with the new control panel capability is fantastic! Now while reading the newest issue of [Resource Central's] Studio City ([which has] no menu bar at the top—it is locked out) I can [use Quick DA to] call up II Notes [from GS+ V4.N1] to jot down a few notes, like a shareware product or NDA mentioned in one of the articles, and then later call it up again when logged onto GENie to download them. I can also call up Battery Brain [from GS+ V2.N3] to change my configuration so that when I quit Studio City the new configuration is in effect without changing it from the Finder and restarting! . . . I use EGOed all the time and a little tadpole lives on my screen (Cool Cursor [from GS+ V3.N5])!

Also I'd like to say I love the magazine and the disk and keep up the fantastic work! My favorite parts of the magazine are the articles, reviews, what's new and rumors. In other words everything but the technical stuff. You see, I'm a user not a programmer, but I think it's great to have the programming info in there so there may be new programmers learning how to program so I have new programs to use and be amazed with! I think it's so cool that my computer will do so many things with so little effort on my part! Thanks again!

Kelly Jerred
via GENie

Thanks Kelly! And don't worry, starting this issue, we'll be moving towards a better balance between the beginning, intermediate, and technical material. Give it the once over and let us know what you think by sending in your feedback form!

Diz

Dear GS+:

I just got my first issue of GS+ Magazine (which I subscribed to via the CarePak 92, a program that should continue and happen more often). It is so nice to be pleasantly surprised. The magazine is much more substantial than I expected, and I have already found the disk of software extremely useful. It isn't often these days that you feel you get your money's worth . . .

Doug Ashbrook
via the InterNet

Thanks Doug. I agree that CarePak is a great idea! I hope that we can be a part of it for many years to come. If any of you out there didn't get a CarePak, contact NightOwl productions at (913) 362-9898 to request a copy or get on the mailing list for next year.

Diz

Dear Steven,

. . . I was highly interested in your excellent article, "TrueType On a LaserWriter" (GS+ V3.N5), and experimented with it. . . Look what I found. You are not limited by the 'thought' 96 point size limit that GraphicWriter III imposes, in fact, I have gone up to 170 points. Also, by using an even bigger font than 96 points on the left or right hand master, or just a page by

itself, you get even smother fonts [on your printouts.]

Gary Hayman
Greenbelt, MD

Thanks for the letter Gary! According to the folks at Seven Hills, GraphicWriter III doesn't actually have a limit to the size of the fonts that you can use in it. (Except, of course, the limit of 255 points that all IIGS software must abide by.) I got the 96 point 'limit' from the Pointless manual . . . serves me right I guess. Also, you should be sure to check out my review of Pointless v2.0 in this issue. Unfortunately, using Pointless and your TrueType fonts with a PostScript printer has just gotten a bit trickier.

Diz

Dear GS+ Magazine:

I have an Apple IIGS with an Apple High Speed SCSI card and a SyQuest removable drive. With the Apple SCSI drivers, it seems to be impossible to use the write protection feature of the cartridge. Is there a driver available that fixes this?

Vigano' Giuliano
Milano, Italy

Yes and no. There aren't any drivers that I know of that will accurately check the physical write-protect switch on a SyQuest cartridge. However, with System 6 and an Apple High-Speed SCSI card, you can write-protect a hard disk partition (including those on a SyQuest cartridge). From the Finder, select the partition with the mouse, and then pick Icon Info from the Special menu. In the top right corner of the information window will be a check box that will allow you to lock the hard disk partition. It's a good thing you have an Apple SCSI card, as this trick doesn't seem to work with the RamFAST cards that we have here at the office.

Diz

Dear GS+:

In response to the question from Kenneth B. Rundle, regarding the incorrect right margin when printing with the StyleWriter ["Letters" in GS+ V4.N1], I do not think that it is the fault of the StyleWriter printer driver. It sounded to me like he was using the AppleWorks GS word processing module. I had the same problem with the HP LaserJet IIP and

Harmonie driver: every time I try to print with the "correct" margins, the right margin is always about half an inch off on the right side. What happened, as for probably all higher resolution printers, is that the printer has a different aspect ratio than the ImageWriter II. The driver for the StyleWriter automatically set the correct aspect ratio for printing on the StyleWriter, which changes the size of the page (graphically, of course), so that the output looks correct on paper. On the other hand, AppleWorks GS word processing module's ruler does not adjust itself to compensate for the change, therefore resulting in an incorrect right margin (not left margin, because it starts printing on the left). I noticed, when I was comparing the output from the page layout and word processing modules, that the output of the page layout module does not have the problem with the margin. Later I discovered, that the page layout module's ruler always adjusts itself if changes [are made to the page setup], therefore it prints with the correct margin; whereas the word processing module does not, resulting in an incorrect margin. . . . I have learned to live with this problem by always adjusting the right margin in the word processing module to compensate for the difference.

Thomas Lay
Irvine, CA

Thanks for the letter Thomas! I'm sure that all of our StyleWriter-owning readers will appreciate the information. For more StyleWriter news, check out "Rumors, Wishes & Blatant Lies" in this issue.

Diz

Dear Steve,
How do you extract the text from a HyperCard/HyperStudio file, or for that matter, any file with a resource fork? One of the more useful features of AppleWorks is that it is possible to extract the text from just about any file, except HyperCard/HyperStudio files and certain types of GS/OS files.

Peter Davis
Kent, England

Well Peter, by saying "certain types of GS/OS files" you've left me with a lot of ground to cover! First of all, I don't know of any utilities, other than resource editors like Genesys and Foundation, that will extract blocks of text from the resource forks of files. However, I have considered writing such a utility and would be very interested in knowing how many readers would find it useful!

As for HyperCard IIGS and HyperStudio stacks, the best way to get the text out of them is to open the stack, go to the card containing the text you want, and then try to copy it off of the card and paste it into EGOed. Note, however, that some of the "text" you see in a stack may actually be part of a graphic, and you won't be able to copy that into a text editor. Also, some of the stacks may be locked, preventing you from copying the text off of the card.

Lastly, since AppleWorks Classic (which is what I assume you are using) is an 8-bit application, it can't open files that have resource forks. If you are using AppleWorks to try and read, say, the Teach files that are on the GS+ Disk, it simply won't work. You'll have to use something like the Teach application that comes with System 6, or EGOed, to open these files and then save them out as plain ASCII text files. Once the text is in an ASCII file, you should be able to read it with AppleWorks.

Diz

Dear Sirs,

. . . I have a suggestion for your program EGOed. I like to make printouts with the program and the new preference to print with a wide left margin is very helpful. However, I miss being able to print with a header and footer and automatic page numbering, and being able to specify a top and bottom margin. I print out to endless paper (8" x 12") and the printouts go from the top of the sheet to the bottom without any margin. . . .

G. Unger
Germany, via FAX

Headers and footers and margins, oh my! (Sorry, that's a hopelessly American joke.) Seriously, I plan on putting in a lot of the things you've asked for, but I don't have a definite time table for putting them in. Also, yours is just one of many letters I've gotten from our overseas subscribers about these kinds of enhancements. So, while I'm in there adding all of this new page control stuff, I should ask all of you what you need EGOed to have to make it easier to handle the different paper sizes that non-Americans seem so fond of. Let me know and I'll do my best to get it in there!

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. Please address all letters to:

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

"Dear Readers"

We get lots of letters here at GS+ Magazine, far more than we could ever answer in the magazine, even if we had the time to answer them all. We do try to get back to everyone that includes a phone number or a self-addressed, stamped envelope, but sometimes we can't even get to those. So, while trying to come up with a solution to this problem, I had kind of an unusual idea: what if we took a bunch of these letters and answered them on video tape? Not only would we get to answer more letters, but we would get to give more detailed, and more visual, answers. Want to know what an NDA is? Not only could we explain it, we could show you some examples of what they are, how they fit into the IIGS System Software, and how to use the ones that come with System 6, right on your T.V.!

Ideally, each tape would be two hours long and we would try to answer as many questions as possible on each one. Also, we would try to group questions logically on each tape (i.e. "Questions About System Software") so that you wouldn't be getting a bunch of stuff that you already know the answers to.

The format would be very informal, Joe and I here in the office answering questions, and, hopefully, very information-packed. Since there won't be a lot of overhead costs for these tapes, the cost for each one should be very low—hopefully less than \$15.

So what do you think? Good idea? Stupid idea? Do you have a question that you would like to see answered? Let me know! At this point, we probably have enough unanswered letters from the past few years to do a single two-hour tape, but it might have to cover more than one topic. What I would really like is to have enough questions on individual topics (hard drives, System Software, GS+ Magazine programs, etc.) to make a complete tape devoted to a single topic. So, send in those questions!

Diz

Understanding Accelerators

By Josef W. Wanklerl

I received a phone call from one of our new subscribers the other day: he was interested in buying an accelerator for his IIGS and wanted to know which one, and which options, we recommended. After the conversation was over, Diz walked in and I told him what the phone call was about. He thought it would make a good article to discuss exactly how an accelerator ticks. So, in this article, I will give an explanation of how accelerators, such as the TransWarp GS and the ZipGS, actually speed up your IIGS. Hopefully you'll get a feel of exactly what to look for in buying a new accelerator, too.

Faster Than A Speeding Ticket

The speed of computers has always been a touchy subject, sometimes measured in megahertz (MHz), sometimes measured in millions of instructions per second (MIPS), and sometimes measured by "Oh yeah? Well my computer is faster than yours is! Nyah, nyah!" Those units of measurement are simply not interchangeable, *especially* when the two measurements have been taken from different computer processors. Let's look into this a bit further.

Megahertz is a measurement of frequency, or how many millions of times something cycles every second. When dealing with computers, the "something" that cycles is the clock that controls the central processing unit (CPU). (The clock that I'm talking about isn't made to tell the correct time of day, but instead, the sole responsibility for the clock in your computer is to send "ticks" to the CPU at a constant rate. There is another clock in your IIGS that maintains the actual time of day, but it is a completely different entity.) A CPU works by doing tasks one at a time. Every time the clock "ticks," the CPU performs another task. So, the faster the clock goes, the faster the CPU performs tasks, and the faster the entire computer goes. That's a pretty simple concept to grasp, and it would seem that just by speeding up the clock, you would speed up the entire computer. That's true to an extent, but we'll cover that later—right now I'm talking about units of measurement.

MIPS, which stands for "Millions of Instructions per Second," is also a measurement of frequency, but it is measuring the number of *instructions* per second, not clock cycles. You'd think that one tick of the clock would equal one CPU instruction, but it doesn't. An

instruction is something a computer program tells the CPU to do, such as add two numbers. Each instruction actually performs a number of different tasks. For example, an Add instruction is made up of different tasks, each executing sequentially, which involve doing very low level processing, such as fetching the numbers to add and then actually adding them. Also, different instructions may take a different number of clock ticks to actually complete, so MIPS isn't always a completely accurate measurement of speed. Which instructions were being counted when the measurement took place? Were they the ones that take fewer ticks to complete?

So now, if you compare MHz to MIPS, you'll see that the MHz will always be greater than or equal to the MIPS value. What really gets fun is when you try to compare these values across computer platforms. On different platforms, it may take a different number of clock ticks to perform instructions. So, when you see a 4.6MHz brand A computer and a 2.3MHz brand B computer, you might think that A is faster than B, but if B performs its basic instructions twice as fast as

"The speed of computers has always been a touchy subject, sometimes measured in megahertz (MHz), sometimes measured in millions of instructions per second (MIPS), and sometimes measured by 'Oh yeah? Well my computer is faster than yours is! Nyah, nyah!' Those units of measurement are simply not interchangeable..."

computer A (i.e. Add on A takes 6 ticks, while on B it takes 3 ticks), then the computers are effectively running at exactly the same speed.

Speeding Up Time

As I said previously, it would seem that just by speeding up the clock, you speed up the entire computer. Well, since we live in a less-than-ideal world, there are certain factors that prevent this from happening. But, the first thing that is required to speed up your computer is, indeed, a faster clock. The thing to note is that the stock CPU in your IIGS simply wasn't designed to go faster than

(or receive clock ticks faster than) 2.8MHz. There are a lot of factors that enter into the "how fast a CPU is able to go" equation that are beyond the scope of this article. So, the next thing that is required to speed up your computer is a CPU that can handle the faster speed... but there's more yet to come.

Memory Caching

Since the IIGS was designed to run at only 2.8MHz, its random access memory (RAM) doesn't have to be able to go very fast (relatively speaking). When an instruction is needed, the CPU has to fetch it from main memory (and this is a task which may take one or more clock ticks to complete). Since the IIGS RAM wasn't designed to handle accelerated speeds, you have one of two choices to make: either completely redesign the memory circuitry in the IIGS, or use a small and fast RAM cache. Revamping the IIGS memory circuitry really isn't a viable option, so using cache RAM is the appropriate choice.

Cache RAM is, basically, very high speed memory that the accelerated CPU can access at an accelerated speed. Saying that memory is high speed doesn't make it cache RAM—a cache is actually a small area where a *copy* of main memory is kept. So, when an instruction needs to be run, it is fetched from the cache RAM, which is fast, and then executed at the fast speed. This means that very tight program loops will run faster because the entire loop will fit into the cache RAM. However, if the CPU needs an instruction that isn't in the cache memory, it has to slow down so that it can fetch the instruction from main (slower) memory. The more cache RAM you have, the less likely it is that the CPU needs to slow down to fetch an instruction from main memory, so your computer appears to go faster.

Note that I've just been talking about fetching instructions from memory. Besides instructions, data is stored in memory. For accelerators to work, there must be an instruction cache, but there can also be a data cache where a copy of data is stored and can be accessed quickly. The ZipGS can be modified to have both an instruction cache and a data cache, but you have to make the modification yourself or send your accelerator back to Zip and explicitly tell them that you want the "split cache" modification made. (It's called a split cache modification because it takes the

total cache memory you have on board your accelerator and allocates half of it to the instruction cache and the other half to the data cache.)

And Other Stuff

What I've described (faster clock, faster CPU, and cache memory) are the basics for understanding a IIGS accelerator. There are a bunch of other technical things to consider, such as how DMA (direct memory access, or where a peripheral talks to main memory without going through the CPU) works, how timing-critical things such as AppleTalk and interrupt handlers work, and a whole host of other stuff. But, suffice it to say, you are now qualified to talk dirty about accelerators.

Battle Of The Stars

When you're in the market for an

accelerator for your IIGS, you have a pretty simple choice to make: ZipGS or TransWarp GS. In every case, I can safely say that, in my experience, the ZipGS is a better choice than the TransWarp GS. *But*, if you can find a cheap TransWarp GS, don't let that stop you from getting one! Both products will speed up your computer, and something is better than nothing. The ZipGS has a few features that make it a superior product to the TransWarp GS—first and foremost is the fact that you can easily upgrade the ZipGS. You can start out with an 8MHz processor and 16K of cache RAM. If you want to speed up your ZipGS, you can purchase a faster processor or more cache RAM. For starters, I'd bump up the cache RAM since a big portion of how fast the processor will run is the ratio of how often the cache RAM is accessed

compared to how often main memory is accessed. With the TransWarp GS you can upgrade the cache RAM to 32K, but you're pretty much stuck with the processor speed of 7MHz. The ZipGS cache RAM can be upgraded to 64K, with an option to split the cache. Also, with the ZipGS, you have the option to boost the raw processor speed to 10MHz.

That's All There Is To It!

If you decide you still don't understand what's going on, or if you just have some general questions about accelerators, feel free to contact us and we'll do our best to help. GS+

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While I was at the Apple EXPO East, I encountered a lot of IIGS owners who described their computer systems to me. I was, frankly, appalled at some of the configurations. I can't imagine how some people manage to get by on a stock ROM 01 IIGS with only one 5.25-inch drive! (They're obviously not using 16-bit applications, I'd say.) Also, a lot of people came to us asking for advice on what their next peripheral purchase should be. So, for all of you that are in this situation, I thought I should put down some guidelines for putting together a basic IIGS system that will let you take advantage of all the neat new software that is coming out and make your normal IIGS use a lot more pleasant.

The Base Unit

For starters, you need an Apple IIGS computer. It doesn't matter if it's a ROM 01 or ROM 03, but if you have a IIGS prior to ROM 01, then go in to your Apple dealer and ask for your free upgrade to ROM 01. You can tell which ROM version you have by turning on your IIGS and looking at the bottom of the screen. If you see "ROM 01" then you have a ROM 01. If you see "ROM 03" then you have a ROM 03. If you don't see "ROM 01" or "ROM 03," then unplug your unit and take it in to your Apple dealer! (ROM 01 computers cannot be upgraded to be ROM 03 computers because a lot more than a simple chip swap needs to take place.) You'll also need a color RGB monitor. It doesn't have to be the Apple monitor, but color is important. We have a monochrome monitor here at work, and it is extremely difficult to get things done on it. So now it resides on top of our "dedicated" disk duplication machine since duplicating disks doesn't require much visual interaction.

Save Me! Save Me!

Once you've got your IIGS and monitor, it would be a good idea to protect it with a surge suppressor and a fan. Luckily for you, Kensington makes a wonderful product, called the System Saver GS, which is a surge suppressor and a fan all rolled into one pretty unit that fits snugly on top of your IIGS. Applied Engineering makes a similar product, the Conserver, but we don't feel that the fan in the Conserver is properly placed to adequately cool your IIGS. Another reason to get a fan is that if you plan to put more than 2 megabytes of RAM, or three expansion cards of any kind, in your IIGS, not having a fan will actually void your warranty.

Memory Requirements

If you don't have at least 4 megabytes of RAM stuck into your IIGS's RAM expansion slot, you can't do much besides use very old software. With a 4 megabyte RAM board costing well under \$150 (see "What's New" in *GS+* V4.N1 for a couple of examples), there is absolutely *no* reason for you not to have adequate memory. Even though you can get by with a total of 2 megabytes (that's a 1 megabyte expansion in a ROM 03 or a 2 megabyte expansion in a ROM 01) you might as well go for the gusto and get 4. Why four? Well, the internal memory expansion slot can handle up to eight

"A hard drive for your IIGS is, in my opinion, essential! Why? Well, to run any modern software, you're going to need System 6. System 6, while able to operate solely from floppy disks, is, to say the least, inconvenient when run from floppies."

megabytes, but only the first four is DMA compatible. (DMA stands for "direct memory access," which is where a peripheral card talks to main memory without going through the central processing unit [CPU]. It is a lot faster to avoid the CPU when moving large amounts of memory around, like a hard drive interface needs to do.) A lot of peripherals will turn DMA off if they need to go outside the first four megabytes, but some don't, and you're better off safe than sorry. Also, for non-hardware reasons, two megabytes is the absolute minimum for running System 6. If you are going to add on a lot of system extensions or run big programs like HyperCard IIGS, you're going to run out of memory, and you're going to run out *fast*. Since four megabytes is cheap, completely compatible with all peripherals that use DMA, and a good bit more than the absolute minimum, I recommend it. With four megabytes on board, I don't see a need for adding more memory for a long time. (Of course, old-timers will probably remember that they thought they would *never* be able to fill an entire 48K. Or 64K. Or 128K. Or 2 megabytes!)

External Storage

In order to get anything done, you are going to need a way to save programs and

documents when you turn off your computer. That's where disk drives come in. First off, if you plan to use Apple II software on your IIGS, you'll probably want to pick up one or two 5.25-inch drives. When I first bought my IIGS, I thought I'd be doing that a lot, but as it turns out, my 5.25-inch drives are now sitting on my shelf collecting dust. I don't even have them plugged in anymore. What you *will* need is a 3.5-inch drive. If you are going to be buying a new Apple brand 3.5-inch drive, go ahead and get a SuperDrive. The price is the same as Apple's 800K floppy drive but the SuperDrive, when used with the Apple II SuperDrive card, can read and write high-density 1.44 megabyte 3.5-inch disks. And, if you don't get an Apple II SuperDrive card to go with your SuperDrive, you can still use it as an ordinary 800K drive until you get the SuperDrive card. If you already have a normal 800K 3.5-inch drive, don't sweat it. I don't see the IIGS world leaving you behind. Also, if you have a hard drive, all you *really* need is one 3.5-inch drive. If you *don't* have a hard drive, and you don't plan on getting one any time soon, then you probably want to have two 3.5-inch drives on hand.

Speaking of hard drives . . . A hard drive for your IIGS is, in my opinion, *essential!* Why? Well, to run any modern software, you're going to need System 6. System 6, while able to operate solely from floppy disks, is, to say the least, inconvenient when run from floppies. When you add a hard drive, System 6 shines! And, when you consider that the price of a decently sized hard drive is no more (and sometimes *less*) than a brand new Apple brand 800K drive, how can you lose? A good starting point for a hard drive is 40 megabytes. Here at *GS+* Magazine, we recommend that you buy the *largest* capacity hard drive that you can afford. The reason for this is because you will probably run out of room at some time or another (remember the days when you thought you'd never fill up a 140K 5.25-inch disk, or an 800K 3.5-inch disk?) and buying more up front is simply a lot cheaper (a *whole lot* cheaper!) than buying more later. One alternative you might want to look into is getting a removable-cartridge hard drive (which uses the SyQuest industry standard mechanism, and are often referred to simply as "SyQuest Drives"). When you want to get more storage space, you simply buy another cartridge for about \$70, instead of buying

another complete hard drive for \$600. The only drawback to having a removable cartridge drive is that you can't mount (have access to) multiple cartridges at once. If you are thinking about buying a second hard drive, I would *strongly* recommend considering a removable, simply for backup purposes. (You don't think you'll ever need to buy a second hard drive? Heh heh... just wait...)

One other thing to take into consideration when you're purchasing a hard drive is whether it is an internal or external drive. An internal hard drive resides in your IIGS and doesn't take up any space on your desk. An external hard drive has its own casing, sits near your IIGS taking up desktop space, and requires an interface card. It would seem that internal hard drives are the way to go—don't be fooled. If you ever decide to (heaven forbid!) ditch your IIGS for another computer, you can almost always take along all your external equipment such as modems and hard drives. That's just one less thing you'll have to get for your new system. There are quite a few types of interfaces for external hard drives, but the most common interface you'll find is called SCSI (pronounced skuzzy), which stands for Small Computer Systems Interface. I mentioned that you'll need an interface for your external drive—the ones currently on the market are the Apple High Speed SCSI card and the RamFAST/SCSI card. I definitely recommend the RamFAST card over the Apple card. It's just plain faster. The RamFAST card comes with different sizes of cache RAM on board (256K or 1MB), and you should purchase the card that fits your budget. The card with more cache RAM will operate a bit faster since there is a better chance that the needed data will already be in the cache, but the difference isn't that noticeable unless you're doing some highly disk intensive work. Generally speaking, a good SCSI drive and a RamFAST will outperform an internal hard drive. But, as I said before, if you can find a deal too good to pass up on an internal hard drive, then grab it! Something is definitely better than nothing.

A Change In Velocity

Once you've got your 4 megabytes of memory and a hard drive, the next thing you might want to consider getting is an accelerator. An accelerator is *not* an essential ingredient to having a IIGS that will run current software, but once you get one, you'll wonder how you ever got along without it. In our experience here at the office, a good accelerator to get is the ZipGS 8/16. Even though Zip offers higher speed models, we've heard a lot of users report problems with them. Diz and

I have both had good luck with the 8/16 model, so we would recommend starting out with that one. If you'd like more detailed information about accelerators, see the "Understanding Accelerators" article elsewhere in this issue.

Printing

If you ever decide that you want to get a hardcopy of a document you've been working on, you're obviously going to need a printer. You have several options when it comes to getting a printer. Before you go any further, you need to decide what kind of output you really need. Do you need simple text documents? Résumé quality documents? How many copies are you going to need? If all you need is simple text output, go for the cheap stuff: dot matrix printers. A choice you can't go wrong with is the ol' reliable Apple ImageWriter II. It may be a bit

"To summarize, the minimal IIGS system that I develop for, and that I see other companies developing software for, is a . . . IIGS with a color monitor, at least two megabytes of total RAM, and a hard drive."

more expensive than other dot matrix printers, but every single piece of software produced for the IIe and IIGS will print on it. You can't always be sure if a third-party dot matrix printer will work. If you need better quality documents, then you have the choice of getting an ink-jet type of printer (possibly an HP DeskJet or an Apple StyleWriter) or a laser printer. If you get a non-Apple printer of any kind, you're going to need a printer driver for it. Both Seven Hills Software and Vitesse make printer drivers for HP equipment such as the DeskJets (Independence and Harmonic, respectively). Before you look into getting a non-Apple printer, find the third party drivers and then look at the printers that they have drivers for (and see our review of both products in *GS+* V2.N4). *Don't* buy a printer first and then hope that you can find a driver for it! If you need top-notch output, and possibly lots of it, you should consider getting a laser printer. Any laser printer should work, but only get laser printers that (A) are PostScript printers and (B) interface via AppleTalk. If you don't get those options, then you're not making a wise investment. (An exception to this rule would be an HP LaserJet printer and a third party printer driver—it will work great and you can add PostScript support later.) The Apple-supplied LaserWriter driver should work for all third party (as

well as all Apple) laser printers that have PostScript and interface via AppleTalk, however, you may want to check with the printer manufacturer first. If you decide to purchase a non-PostScript printer, another wise investment would be Pointless from WestCode. With Pointless and the correct driver installed in your system, printing text to bitmap-based printers will occur at the highest possible resolution.

Did I Mention System 6?

You're still not booting with System Disk v1.1, are you? v3.2? v4.0? v5.0.4? *Why?!* Grab a copy of System Disk v6.0 and install it on your hard drive. You should *always* use the latest System Software! The reason is because most software vendors use the latest System Software to develop their applications, and they sometimes take advantage of features in the latest System Software releases that aren't available in previous System Software releases. If you aren't using the latest System Software, you can't use the newest software on the market. It's that simple. If you don't have System 6 and you would like to get it, see the "How To Get System 6" department elsewhere in this issue.

Don't Be Afraid

When you are shopping for these items, don't be afraid to ask questions! And don't be afraid to dig back through your old issue's of *GS+* Magazine (we've reviewed lots of hard drives, disk drives and memory cards, check out the back issue information in this issue to see which issues have which reviews), *inCider/A+* and *A2-Central* to find reviews of these products. The more you know about what you are buying, the more likely you are to get a good deal. Of particular interest would be Greg Zimmerman's article, "Buying Used IIGS Equipment" which was published in *GS+* V3.N2. [Editor's Note: This issue is sold out, but you may be able to find a copy at your local Apple User Group.]

Anything Else?

To summarize, the minimal IIGS system that I develop for, and that I see other companies developing software for, is a ROM 01 or ROM 03 IIGS with a color monitor, at least two megabytes of total RAM, and a hard drive. An accelerator is nice, but not necessary, as is a printer. Once you've put together your minimal system, the next peripheral you get is pretty much up to your personal needs. *GS+*

For information on where to get the products mentioned in this article, check the "Product Information" department, elsewhere in this issue.

Welcome to our second installment of "Casual 6"! In this column, anything and everything about System 6 is fair game, and no System 6 topic is gamier than today's topic: those crazy Finder icons. It seems that many of you have invested lots of time and effort in getting your icons just the way you want them, and you were quite upset when, after installing System 6, your favorite icons came up missing.

Fortunately, Apple has written a wonderful little technical note describing how the new Finder deals with icons and what you should look out for when trying to get your old icons to show up. That technical note (Apple IIGS #108: Finder Funkiness), is on your GS+ Disk, and I've taken the liberty of expanding on the main concepts of it (without too much technical detail) in the article that follows.

Icons & Icons

The first step in coming to grips with this new icon behavior is to realize that there are now two different types of icons recognized by the Finder.

The first is the good, old-fashioned icon that you are already familiar with. These icons live in files that can contain multiple icons, and you can edit them with any one of several older icon-editing programs (like DICEd by Dave Lyons or IconEd by Paul Elseth, both of which are shareware). Previously, to get these icons to be recognized by the Finder, you simply put them in a folder called **Icons** in the root (topmost) directory of one of your online disks.

With the introduction of System 6 and the new Finder, we were given a new type of icon, one that lives in an invisible file called **Desktop**. Like an old-style icon file, the **Desktop** file can contain multiple icons and it also stays in the **Icons** folder, but, since it's invisible, you can't see it unless you turn off the Finder's "Hide Invisible Files" preference. And, to make matters worse, there aren't any editors (that I know of) specifically for these types of icons, so the only way to edit them is to use one of those techno-weenie resource editors (like Genesys).

Now, you might be saying to yourself, "How do these **Desktop** files get on my disks? I didn't put them there!" That's a good question. The answer is, the Finder puts them there! You see, some of the newer application programs (like Font Reporter in this issue) have their icons

built into themselves! (These icons are kept in what are called *rBundles* inside the file.) When you launch one of these applications for the first time, the Finder looks at it to see if it has any icons inside it. If it does, the Finder takes those icons and sticks them in the **Desktop** file of the disk you are running that application from. That way, the next time you run the Finder, it can simply look inside the **Desktop** file to find those icons.

Order Is The Key

Alright, now that we've classified and tagged our two icon species, we get down to the real cause of most "missing icon" problems. Namely, the order in which the new Finder searches for and uses icons.

In a nutshell, icons are used on a "first-come, first-served" basis. That is to say, the first icon found for a particular file is the one that is used by the Finder. Subsequent icons for that file are completely ignored.

Having said that, the question becomes, "In what order are icons loaded by the Finder?" Well, as you might expect, the first disk to be searched is your boot disk. After that, disks are searched in *device-number* order. In other words, device number 1 is searched first, then device 2, then device 3, etc. A good way to tell what this search order will be is to look at the order in which your disk icons show up on the Finder desktop. For example, in the screen shot below, you can see the order in which the Finder searches my disks: First **Big1**, then **Projects2**, then **Projects1**, then **Big2**, then **Big3**, then **EGO Systems' Files** and finally, my RAM Disk, **Diz**.

That seems pretty simple, right? Well it is, with only one "gotcha" that you have to look out for. You see, on each individual disk that the Finder searches, the icons that are in the **Desktop** file are read in before, and take precedence over, any old-style icons on that disk! Be sure to remember this fact, otherwise you might get royally confused when trying to rearrange your icons!

Finally, after all of the **Desktop** and old-style icon files on all of your disks are searched, the Finder looks inside its own resource fork for any icons that it might have to contribute to your desktop panorama.

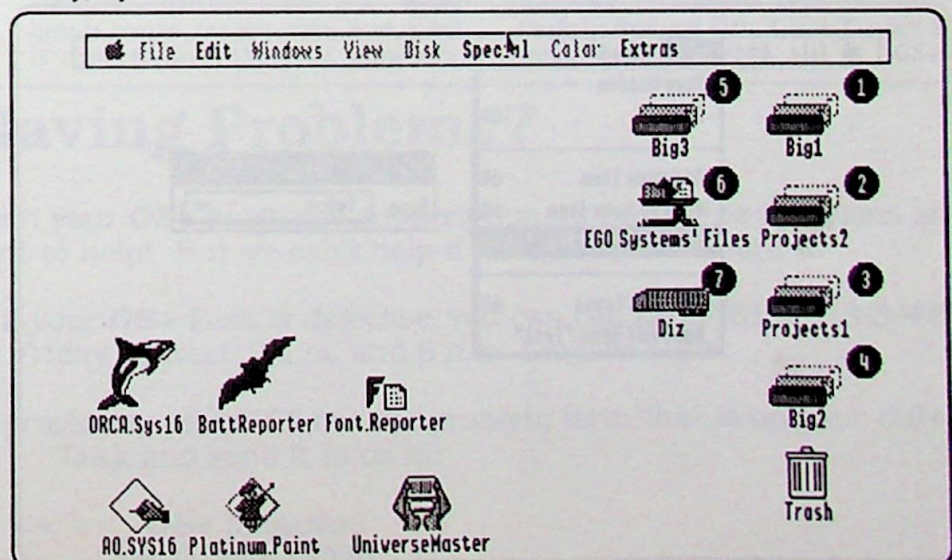
Game, Set, Match

Two other icon-related things that the technical note talks about have to do with icons that match files by filename. However, those are both fairly technical and will probably only be of use to the true icon junkie. If you are interested, you can read about them in the technical note on your GS+ Disk.

Still Crazy?

Hopefully, this article and the supplied technical note will clear up some of the mystery surrounding how the new Finder uses your icons, and help make your icon problems a thing of the past. If you have any questions about this article, feel free to contact me here at GS+ Magazine! And if you have any suggestions for future installments of "Casual 6" let me hear those too!

GS+



Working with the Toolbox

By Josef W. Wankerl
Part 9: The Menu Manager

The Menu Manager presents yet another method for letting users interact with your program. The Menu Manager simply manages the main menu bar and pop-up menu controls for the desktop interface. As such, the Menu Manager is relatively easy to learn. In addition to the Menu Manager, I will also briefly discuss the Desk Manager (but the discussion will only be relevant to how it works with the Menu Manager).

Menu Bar Guidelines

I'm going to assume that you pretty much know what a menu bar is and how to use one. What you probably want to know is how you can put one in your programs, right? I thought so. Well first off, let's get a few things in order. A *Menu Bar* is simply a collection of individual menus. A *Menu* is simply a collection of individual menu items. A *Menu Item* is simply an item which may be selected from a menu.

A menu bar is either a system menu bar (the one you see at the top of the screen) or it will belong to a window (and will appear inside the window, such as in the case of the EGOed menu bar).

Menu items serve a dual function: they either act like simple buttons or they act like check boxes. Selecting an item from a menu will either cause an immediate action (as in the case of the Close or Quit items) or it will change the state of the menu item selected (a check mark could appear next to the item, or the menu item name could change).

Pop-Up Menus

Pop-up menus are *not* used to cause an

immediate action. A pop-up menu should be used in the place of radio buttons to conserve screen real estate when necessary. Basically, a pop-up menu is a single menu contained in a control. Then, as the name implies, when you click the mouse on that control a menu "pops up" for you to select an item from. All Menu Manager calls which are valid for menus and menu items can be applied to the pop-up menu control. All pop-up menus are framed by a rectangle with a drop shadow, and as such, they look almost exactly like buttons with a drop shadow frame. This can be confusing—is the control a button or a pop-up menu? There is no way to tell unless you click on it. With System 6, a pop-up triangle can be added to the end of the pop-up menu to indicate that the control is indeed a pop-up menu. You should *always* make sure that the triangle is present in all your pop-up menus (by setting bit 7 of the *ctlMoreFlags* word). The button title string can be examined and changed by using the *GetCtlTitle* and *SetCtlTitle* calls.

Creating Menus

In order to create a menu bar, you create a menu bar template which contains references to each menu that will appear in the menu bar. For each menu, you create a menu template which contains references to each menu item that will appear in the menu bar. For each menu item, you create a menu item template which defines the properties for the menu item. For complete information on the Menu Manager templates, see the Menu Manager chapter in the *Apple IIGS Toolbox Reference: Volume 3*.

Desk Manager

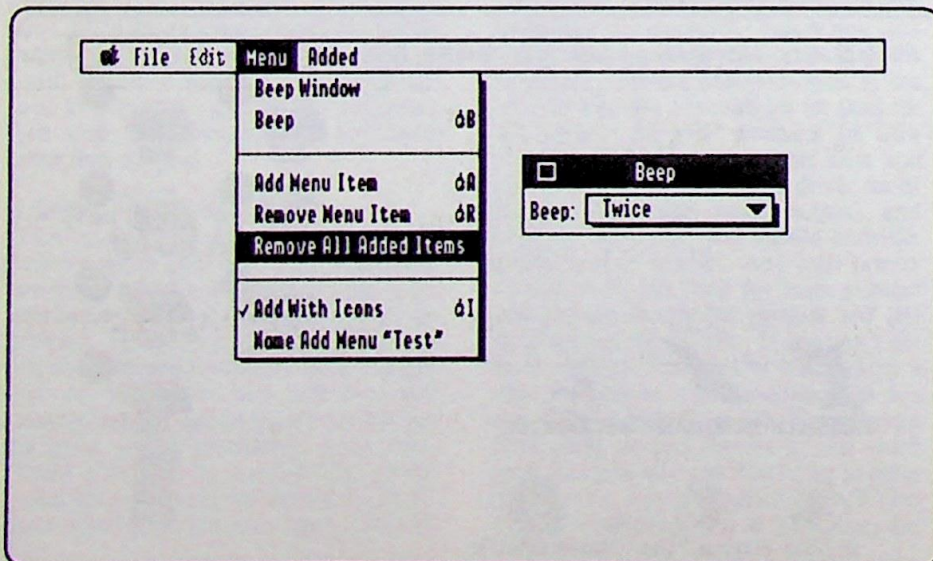
The Desk Manager is responsible for supporting desk accessories. Since New Desk Accessories (NDAs) are typically chosen from the Apple menu, it makes sense that a brief discussion of the Desk Manager should take place here. New Desk Accessories have to assume that certain tool sets are started up, so your application *must* start the tools. (For a list of the tools that your application needs to start to support NDAs, see the *Apple IIGS Toolbox Reference: Volume 1*.) Once you have started the correct tools and created your menu bar, you add the NDAs items to the Apple menu by simply calling the *FixAppleMenu* Desk Manager tool call. Once that's done, if you are using *TaskMaster*, your program will then correctly support New Desk Accessories. *TaskMaster* will automatically handle opening NDAs for you. One thing to note is that before you shut down, your application should call the *CloseAllNDAs* Desk Manager tool call to make sure that all New Desk Accessories have the chance to shut down.

Menu Manager Demo

I'd love to go into detail about how each Menu Manager call works and all of the data structures used to create and maintain menus, but all that has already been done for me in volumes 1 and 3 of the *Apple IIGS Toolbox Reference* and in the *Programmer's Reference for System 6.0*. So, instead of repeating information, I'll concentrate more on describing the Menu Manager Demo program, and what's going on behind the scenes. The Menu Manager Demo program on your *GS+* Disk provides some good examples of the most frequently used Menu Manager calls and the most common way of creating menu bars and pop-up menu controls.

Before you read the description of what the Menu Manager Demo program does, take some time out and actually play with the program. See if you can figure out which calls are being made just from the *Apple IIGS Toolbox Reference* books.

To start out, the Menu Manager Demo program goes through the familiar routine of starting up the tools it needs. Next, the system menu bar is created by calling *NewMenuBar2* to create the menu bar, then calling *SetSysBar* to make it the system menu bar. Next, the New Desk Accessory names are added to the Apple menu with the *FixAppleMenu* call, and the correct dimensions of the menu bar and all its menus are calculated by calling



`FixMenuBar`. Finally the newly created menu bar is shown by calling `DrawMenuBar`. Once the menu bar is correctly set up, a "Beep" window is created, and the initial state of some menu items are set. The program then falls into the main event loop.

The main event loop makes sure the menu item states are correctly set for the current front window by calling the `CheckFrontWindow` procedure. `TaskMaster` is then called to handle all events. If a menu item is chosen from the menu bar, either a `wInSpecial` or a `wInMenuBar` code will be returned, so the item is retrieved from the event record and control is transferred to the routine that handles the menu item that was chosen.

The `CheckFrontWindow` procedure compares the current front window to the one it last knew about, and if the window has changed, the menu item states are set accordingly. If the frontmost window is not present, then the Close menu item is disabled and the Edit menu is disabled. If the frontmost window is a system window (i.e. a New Desk Accessory window) then the Edit menu is enabled and the Close menu item is enabled. If the frontmost window is the "Beep" window, then the Edit menu is disabled and the Close menu item is enabled.

When the "Beep Window" menu item is chosen, the "Beep" window is brought to the front if it is open, or it is created if it is closed.

When the "Beep" menu item is chosen, the value of the pop-up menu in the "Beep" window is obtained, and `SysBeep` is called the number of times indicated in the pop-up menu.

When the "Add With Icons" menu item is chosen, the check mark for the menu item is toggled.

"A Menu Bar is simply a collection of individual menus. A Menu is simply a collection of individual menu items. A Menu Item is simply an item which may be selected from a menu."

Up to now, things have been pretty simple. And, luckily, from here on out, things will stay simple (the Menu Manager isn't difficult to understand.) The next few routines, however, are a bit more meaty.

When the "Add Menu Item" menu item is chosen, the first thing to happen is the menu item template for a new menu item is loaded. Next, a new `itemStruct` is created since `itemStructs` are not "templates"—instead, for each menu item created, a unique `itemStruct` needs to be maintained. Information pertaining to `itemStructs` can be found in the *Programmer's Reference for System 6.0*. Note that the `itemStruct` is not necessary for menu items unless they will have icons associated with them. Since the Menu Manager Demo program adds icons to the extra menu items, it generates the `itemStruct` field unconditionally. This simplifies things when menu items are removed, since there is only one "type" of menu item being removed. Next, the check mark on the "Add With Icons" menu item is checked, and if it is cleared, then the icon bit in the menu item flags word is cleared. Before the new item can be added, a new menu must be added if it isn't already present, and the name must be set according to the "Name Add Menu xxx" menu item. Once everything's set up, the new menu item is added, and the new size for the menu is calculated.

When the "Remove Menu Item" menu item is chosen, the last menu item added is removed from the extra menu, the

dedicated `itemStruct` memory for the menu item is disposed of, and the new size for the menu is calculated. If the item removed was the last item in the menu, the extra menu needs to be removed as well.

When the "Remove All Added Items" menu item is chosen, the procedure to remove individual menu items is called until all items have been removed from the extra menu.

When the "Name Add Menu xxx" menu item is chosen, if the extra menu is present, it needs to be renamed. So, the new name for the menu is determined, the menu name is changed, and the menu bar is redrawn so the change is noticed. Finally, the new name for the "Name Add Menu xxx" is set.

That's All, Folks!

Using the Menu Manager is relatively easy. The source code for the Menu Manager Demo program covers most of the more common Menu Manager calls. If you need to do more than the Menu Manager Demo program does, you're really getting a grasp of what's going on and should be able to read the Toolbox references without my help. Still, if you had trouble following this article, or the Toolbox references, let me know and I'll attempt to clarify.

I've pretty much taken this series where I wanted it to go—I've covered all the tool sets you need to write your own desktop-based program. From here on out, I'll do installments "on request." What that means is that you write in and tell me that you'd like to see a program that uses the <insert tool set name here> tool set and I'll work on it. "Common" tool sets will take precedence over obscure ones (i.e. `TextEdit`, `List Manager`, and `Standard File` will take precedence over the `Apple Desktop Bus` tool set). I look forward to seeing your requests! **GS+**

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- Reviews of AMR AS800K 3.5-inch drive, Salvation—Exorciser, Disk Access, MD-BASIC, Katie's Farm, Task Force, BLOCKOUT, OMEGA, 2088: The Cryllan Mission, Hunt for Red October, Revolution '76, Where in the U.S.A. is Carmen Sandiego?

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

Jan-Feb 1991 (V2.N3)

- AppleFest/Long Beach '90 & Apple II Achievement Awards
- Interview with Jim Carson of Vitesse, Inc.
- Introduction to System Software v5.0.4
- RAM Namer - A CDev that allows you to rename RAM disks (ORCA/C)
- **GS+** program updates - Battery Brain v1.1, EGOed v1.32c (written in ORCA/C), Teach Translator for GraphicWriter III v1.1
- Reviews of ZipGSX, LightningScan, Design Your Own Home, Print Shop Companion IIGS, Your IIGS Guide, Dragon Wars, 2088: The Cryllan Mission - Second Scenario, Space Ace, Sinbad & the Throne of the Falcon

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

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 (ORCA/M, ORCA/C)
- Replicator - A desktop-based disk duplication program that works with any GS/OS device and file system (ORCA/Pascal, ORCA/C, ORCA/M)
- **GS+** program update - EGOed v1.4
- Reviews of MacLand 105MB Hard Drive, Tulin 120MD Hard Drive, SuperConvert, Signature GS, Learn to Program in C, 4 shareware reviews

May-Jun 1992 (V3.N5)

- TrueType on a LaserWriter
- Using Archiver
- Writing Phantasm Screen Blankers
- Working with the Toolbox - Intermision: System 6 Updates
- Whoosh - A Control Panel that turns off the System 6 whooshing rectangles (ORCA/M). **Requires System 6.**
- Rebuild Desktop - A Finder Extension that will rebuild the invisible desktop file under System 6 (ORCA/C). **Requires System 6.**
- **GS+** program updates - Shuffle v2.0, Cool Cursor v1.0.1, EGOed v1.6 (**requires System 6**), Replicator v1.2
- Reviews of Pegasus Internal Hard Drive, Express, Formulate, Second Chance v2.0 & X2, Shoebox

Jul-Aug 1992 (V3.N6)

- KansasFest 1992
- Introduction to 3-D Graphics - Part 3: Speeding Things Up (demo program written in ORCA/C)
- 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 (ORCA/C). **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 (ORCA/C). **Requires System 6.**
- **GS+** program updates - EGOed v1.7 (**requires System 6**), Quick DA v2.0 (**requires System 6**), Replicator v1.3
- Reviews of 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 (ORCA/C). **Requires System 6.**
- II Notes - A 20-page NDA notepad (ORCA/M). **Requires System 6.**
- Miscellaneous Library - A collection of various useful routines to use from any programming language that supports linking to standard libraries (ORCA/M)
- **GS+** program updates - Autopilot v2.0 (**requires System 6**), Quick DA v2.1 (**requires System 6**), EGOed v1.7.1 (**requires System 6**)
- Reviews of ContactsGS, GSymbolix, Kangaroo, ORCA/Debugger, UltraCat, Storybook Weaver: World of Make-Believe

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Font Reporter is an application that allows you to generate reports showing all 256 characters of any or all of your installed font families, in any size or style that you want. You can generate a single report showing multiple sizes of multiple families, or you can tell Font Reporter to generate a separate report for each family. All reports can be printed out from within Font Reporter and are formatted so that you can easily three-hole punch them and put them in a binder. You can also save your reports to disk as standard Teach files. You can then load these Teach files into a TextEdit-based editor (like our own EGOed) to reformat them, print them out, or copy out any special characters that you may want to use in another document.

Some Definitions

When reading this documentation, you'll see two potentially confusing terms: "font" and "font family." So, let's define these terms right away to avoid as much confusion as possible.

Font: A font is a particular combination of a typeface design, weight, size and style. For example, Times 10 point bold is a unique font, as is Times 10 point plain. Even though both belong to the "Times" family, each is a unique font.

Font Family: A font family includes all instances of a particular typeface design. For example, the "Times" family includes Times 10 point bold, Times 12 point italic, etc.

Using Font Reporter

To use Font Reporter, use the Installer on your backup GS+ Disk to install it on one of your own disks. (You can also run Font Reporter directly from your backup GS+ Disk if you want.) After you have it installed, simply double-click on the FontReporter icon to launch it.

When Font Reporter finishes loading (if you have a large number of fonts installed in your system, it will take Font Reporter a while to load), you will see three windows: the Font Families window, the Sizes window, and the Styles window. You use these windows to specify the font families, sizes, and styles that you want included in the reports that Font Reporter generates. Since these windows are what you will interact with most often in Font Reporter, I'll explain them first (from the simplest window to the most complex) and then go over what's in the Font Reporter menu bar.

The Styles Window

This window allows you to specify the styles you want applied to the font families that are in your reports. Using the check boxes, you can quickly specify any style combination you want. To specify all styles, click on the "All Styles" button and all of the style check boxes will be checked. To turn off all of the styles at once, click on the "Plain" button. All of the check boxes and buttons in this window have key equivalents, which are shown in Figure 1.

The Sizes Window

This window allows you to specify which sizes you want included in your reports. To specify a size, select the Sizes window, click on the line edit control (which is just above the "> Add >" button in the Sizes window) and type the size you want into the box. Note that you cannot specify a size larger than 255 or smaller than 1. After you type in the size, press the return key or click on the "> Add >" button to add it to the list of sizes. Notice that after a size has been added to the list, you cannot add it again. The "> Add >" button will dim out if the size you have specified in the line edit item is already in the size list.

To remove a size from the list, simply select it in the list and then click on the Remove button or press Command-R. You can also double-click on a size to remove it from the list. To remove several sizes from the list, you can shift-click or Command-click (i.e. hold down the shift or Command key while clicking the mouse) to select the sizes you want to remove, and then click on the Remove button to remove them from the list.

The Font Families Window

This is the window that lets you specify which font families (i.e. Courier, Times, etc.) that you want your reports to include. In this window, you will see two lists, and two buttons. The list on the left is labeled "Installed Families:" and it shows you the names of all of the font families that are installed in your system. The list on the right is labeled "Families To Report On:". This is the list that Font Reporter looks at to determine which font families you want included in your reports. When you first start Font Reporter, this list is empty.

To put a font family into the "Families To Report On:" list, simply double-click on a font family shown in the "Installed Families:" list. When you do, that font family name will be added to the "Families To Report On:" list. You can also select one or more font families from the "Installed Families:" list (by shift-clicking or Command-clicking) and then clicking on the "> Add >" button. All of the fonts families you have selected will be added to the "Families To Report On:" list.

To remove a font family from the "Families To Report On:" list, simply select it and click on the Remove button. That item will be then be removed from the list.

The Menu Bar

The Font Reporter menu bar is a fairly typical menu bar, so let's go over each menu, one at a time.

The Apple Menu

The first item in the Apple menu is the

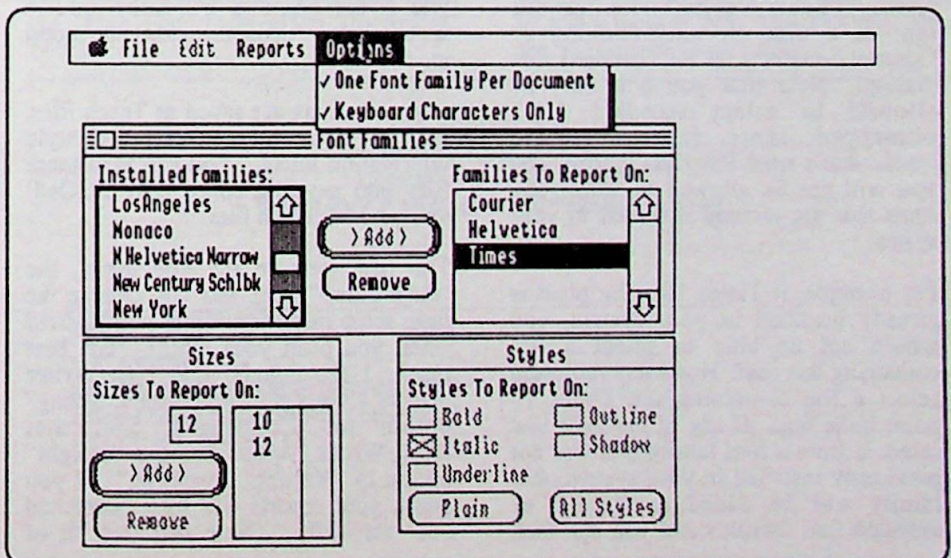


Figure 1
Key Equivalents for the Styles Window

Command-B	Toggle Bold
Command-I	Toggle Italics
Command-U	Toggle Underline
Command-O	Toggle Outline
Command-S	Toggle Shadow
Command-T	Plain (Turn off all styles)
Command-A	Turn on all styles

"About Font Reporter" item. Selecting this item presents you with a window telling you the version of Font Reporter as well as some information about how much memory you have available. To get rid of this window, click the mouse in its close box or select the Close item from the File menu.

Below the About item will be a list of your installed New Desk Accessories. To use one, simply pick it from the menu and then use it as you normally would.

The File Menu

The first item in the File menu is "Install New Fonts." As I said earlier, when you first start up Font Reporter, the "Installed Families:" list contains the names of all of the font families that are currently installed in your system. But, suppose that you have a font, or fonts, that weren't installed in your system when you started up Font Reporter. Perhaps you just came home from your user group meeting with three disks of public domain fonts and you want to see what they look like. Ordinarily, you would have to copy them into your Fonts folder before running Font Reporter to make them available. However, if you select this menu item, Font Reporter will present you with a Standard File dialog that will allow you to select new bitmapped fonts to install into the system. (You can select more than one font at a time by shift-clicking or Command-clicking in the Standard File dialog.) Note that you will only be allowed to select standard IIGS bitmapped fonts (not TrueType fonts—that's what Pointless is for!), and you will not be allowed to select any fonts that are already installed in your system.

For example, if Times 10 point plain is already installed in your system, you would not be able to select a file containing that font. However, you *could* select a file containing the Times 10 point *italic* font. If one of the fonts you select is from a font family that was not previously installed in your system, that family will be added to the list of installed font families and you can then

add it to the list of families you want to report on.

The second item in the File menu, the Close item, allows you to close the topmost window. If the window is a report window that has not yet been saved, you will be asked if you want to save the report before closing it. If you answer "yes," you will be presented with a Standard File dialog box that will allow you to save the report under a new name (as described under the "Save As" item below). If you answer "no," the report window will be closed and any changes will be lost. If you answer "cancel," the operation will be cancelled and the report window will not be closed.

The next item, the Save item, allows you to save the contents of the current report window. If the report has not already been saved, you will be presented with a Standard File dialog box that will allow you to save the report under a new name, just as if you had selected the Save As item (described below). If the report has already been saved, it will be saved to the same file name as before.

The fourth item in the File menu, the "Save As" item, allows you to save the contents of the current report window to a new file name. When you pick this item, you will be presented with a Standard File dialog box that will allow you to specify a new file name to save the report in.

Reports are always saved as Teach files, with all font family, size, and style information intact. You can load these files into any text editor (like EGOed) that can read Teach files.

The fifth item in the File menu, the "Page Setup" item, lets you change the page setup information that will be used when you print your report. For best result, I recommend that LaserWriter owners always set the "Vertical Sizing" option to "Condensed" and that ImageWriter owners set the "Height" option to "Vertical Condense." If you don't, your reports will look "stretched out" vertically. (Note that this bit of

advice can be applied to all IIGS desktop programs, not just Font Reporter!)

The sixth item in the File menu, the Print item, allows you to print your reports to your currently selected printer. If you select the Print item and you have not yet specified a page setup, the Page Setup dialog will appear, just as if you had selected the Page Setup menu item. After you have specified a page setup, you will be presented with the Print dialog that will allow you to specify the number of copies you want to print and the pages you want printed.

The last item in the File menu, the Quit item, lets you quit from Font Reporter and return to the previous application. If you have any open report windows that have not been saved, you will be asked if you want to save them.

The Edit Menu

Generally speaking, the Edit menu is not used by Font Reporter unless the front window is a report window. If the front window is a report window, you can select text in the report window using the mouse and then use the Cut, Copy, Paste, and Clear items in the edit menu just as you would for in any other application. For more information on how these editing commands work, refer to your IIGS owners manual.

The Reports Menu

The first item in this menu, "Specify Font Families," brings the Font Families window to the front if it is already open. If the Font Families window is not open, selecting this item opens it and brings it to the front.

The second item in this menu, "Specify Sizes," brings the Sizes window to the front if it is already open. If the Sizes window is not open, selecting this item opens it and brings it to the front.

The third item in this menu, "Specify Styles," brings the Styles window to the front if it is already open. If the Styles window is not open, selecting this item opens it and brings it to the front.

The last item in this menu, Generate, is what you use to tell Font Reporter that you are ready to generate a report. This item is only available after you have specified at least one font family and one size to report on (i.e. the "Families To Report On:" and the "Sizes To Report On:" lists both have something in them). After you pick the Generate menu item, Font Reporter will generate a report window (or windows, see the discussion under "The Options Menu" below)

containing the fonts you have specified. These reports can then be saved using the Save and Save As menu items or printed out using the Print menu item.

The Options Menu

The first item in this menu, "One Font Family Per Document," tells Font Reporter that, if you have specified more than one font family in the "Families To Report On:" list, you want each font family to be given its own report window. The default value is for all font families to be included in a single report. To change this, simply pick this item from the Options menu and a check mark will appear beside it. To change back to the default value, simply pick this item again and the check mark will go away.

By default, Font Reporter includes all 256 ASCII characters for each font in a report. However, with Pointless installed, or if you have specified a large number of font families and sizes for your reports, including all 256 characters of each font can make your reports take a very long time to generate. The last item in the Options menu, the "Keyboard Characters Only" item, allows a way to cut down on this time. When you select this item, a check mark will appear beside it to show that it is selected, and all reports that you generate will include only the characters that are visible on your IIGS keyboard. No special characters will be included in the report. To turn this option off, simply select it again so that the check mark beside it disappears.

Now that we've gone over all of the pieces that make up Font Reporter, let's put them all together for a couple of examples.

Example 1

For a simple example, start up Font Reporter and double-click on the "Courier" font family in the "Installed Families:" list. The "Families To Report On:" list should now contain one item: Courier. (If you don't have Courier installed in your system, pick your favorite font and substitute it for Courier in all of the examples that follow.)

Next, click on the Sizes window, type "10", and press the return key. The "Sizes To Report On:" list should now contain one item: the number 10.

Finally, select the Generate item from the Reports menu. If the Generate item is dimmed out so that you can not select it, make sure that you have specified a font family (the "Families To Report On:" list should contain Courier) and a size (the "Sizes To Report On:" list should contain

10). If not, go back to the beginning of this example and try again.

A few moments after you pick the Generate item, a report window should appear. After the report window appears, notice that its title is "Courier." Font Reporter always titles its reports based on the first font family that appears in a report. You can change this name when you save the report.

Example 2

For our next example, leave things the way they were for the last example and then select the "Keyboard Characters Only" item from the Options menu. Now pick the Generate item. In a few seconds, you should see a report like the one shown in Figure 2. If there are more characters in your report, make sure that there is a check mark next to the "Keyboard Characters Only" menu item and then pick Generate again.

Example 3

For our third example, we're going to try something a bit more complex.

First, close all of the open report windows (select each report window and then pick the Close menu item). Make sure the Font Families, Sizes and Styles windows are set up the way they were for the second example, and then add Helvetica and Times to the "Families To Report On:" list. (If you don't have Helvetica and Times installed on your system, substitute two more of your favorite fonts in this example.)

Next, select the Sizes window and add "12" to the list of sizes to report on.

Next, select the Styles window and click on the Italic check box.

Now, go to the Options menu and select the "One Font Family Per Document" option.

At this point, your screen should look similar to the screen shot at the start of this article. And there should be check marks next to both items in the Options menu.

Finally, pick the Generate item. After a few moments, three windows should appear: Courier, Helvetica, and Times. Each window should contain two different font samples, for a total of six font samples: Courier 10 point italic, Courier 12 point italic, Helvetica 10 point italic, Helvetica 12 point italic, Times 10 point italic, and Times 12 point italic.

Pointless Tips

By now, you should have a pretty good idea of what Font Reporter can do and how to make it do it. Still, those of you that use Pointless might be wondering how to best use Font Reporter whenever you get a new TrueType font. All you have to do is use Pointless to add your new TrueType font to your list of TrueType fonts *before* you run Font Reporter. The font will then be available in your list of installed fonts when you start up Font Reporter.

Suggested By . . .

That's all there is to Font Reporter. I hope that all of you font junkies enjoy it and that it makes your ever-growing catalog of fonts easier to manage. As usual, technical information for Font Reporter can be found on your GS+ Disk, and if you have any suggestions for future versions of Font Reporter, I want to hear them! I especially want to know if you run across any nasty bugs while using Font Reporter. If you do, please be sure to fill out and send in a Problem Form so that I can fix them.

Last but not least, I want to thank subscriber Don Svob for suggesting the idea for Font Reporter in a letter he sent us a few months ago. Thanks Don! You see, we do read those letters! GS+

Figure 2
An Example Report
Courier 10 Point Plain
With Only Keyboard Characters Shown

```
Courier 10 point, Plain
!@#$%^&*() +
1234567890-_=
ABCDEFGHIJKLMN OPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
{}[]:;'"<>? ,./~|`\"
```


EGOed v1.8

By Josef W. Wankel &
Steven W. Disbrow

Surprise! Joe Wankel here, and I'm writing the major portion of this issue's EGOed column! The reason for this is because I stole the EGOed source code from Diz long enough to slip in code for *undo* (among other things)! That's right, EGOed is the first TextEdit-based editor to support undo! (Note, new readers should refer to the "What Is EGOed?" sidebar and to "How to Use your GS+ Disk" in this issue for information on installing and using EGOed.)

EEK! I Didn't Mean To Do That!

Surely you've been typing away in EGOed one day and made a major mistake you wish you could have undone. ("Yes, I have, and stop calling me 'Shirley!'") Well, to cure this, EGOed sports two new menu items in its Edit menu: Undo and Redo. I'd like to go on and on about how undo works, but after thinking about it, undo is pretty self-explanatory. You'll notice that the menu items change for the type of undo that will be performed. For example, "Undo Typing" will undo what you have just typed. "Undo ALL CAPS" will undo the ALL CAPS operation you just performed. "Redo Style Change" will redo the style change that you have just undone. What more is left to say? Ah, yes... once you've undone something, the only way you can get it back is to use Redo. If you choose undo twice and you didn't mean to, then you're out of luck since Redo is only one "level" deep (it only remembers the last undo, not ones prior to it). If you redo a change, and you decide you liked it better the way you had it before, you can either choose undo (to undo what you just redid) or you can choose redo again. Either way, what this means is that you can keep hitting

redo to switch between your done and undone changes.

(Note: all the memory associated with undo for an EGOed document is cleared when you save the document. If you want clear out your undo memory, simply choose the "Save" menu item. Also, undo memory is released when you choose the "Done" button from the "Replace" dialog.)

How To Undo

In addition to selecting the menu items from the menu bar, you can perform undo by typing control-Z just as you would type control-X to cut text or control-V to paste text. You can also type option-control-Z to perform redo. Basically, if you hold down the option key when you choose an undo command, redo will be done instead. For a summary of the ways to redo something, see Figure 1.

Undo Anomalies

Some operations, like pressing the delete key, will now appear to work differently in this new EGOed. What's happening is, when you press the delete key, the character to the left of the insertion point is being selected, remembered for a later undo operation, and then deleted. A similar thing happens when you press control-F to delete to the right or control-Y to delete to the end of the line.

Another anomaly occurs when you have the "Smart Cut/Paste" preference turned on. When you cut a selection, spaces are stripped off before the text is placed in the clipboard; however, the undo code remembers the selection before any stripping has taken place. Next, when

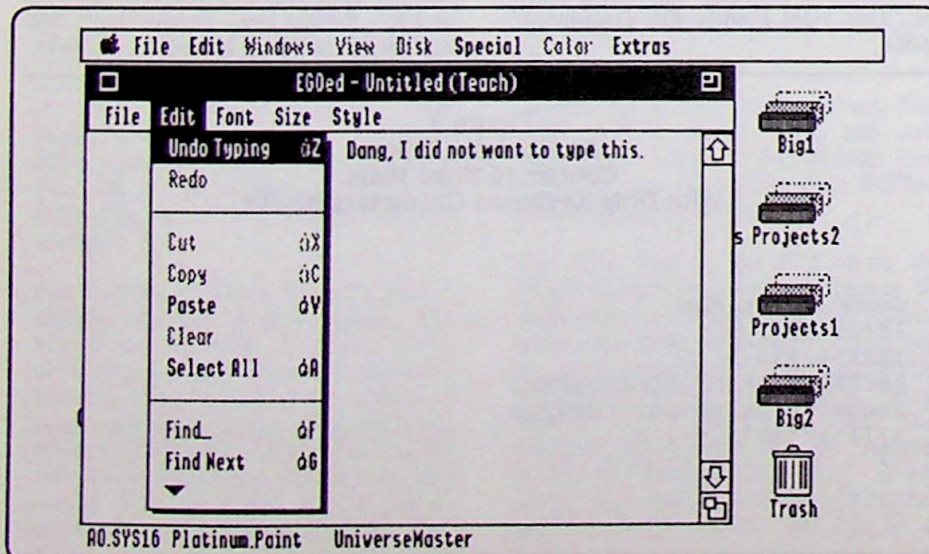
What Is EGOed?

EGOed is a New Desk Accessory (NDA) text editor. When you install EGOed on your startup disk, you can use it to edit and print ASCII text, Teach, AppleWorks Classic and AppleWorks GS word processor files from inside any desktop program that properly supports NDAs. To use EGOed v1.8, you must install it on a IIGS System Software v6.0 (or later) startup disk with at least 75K of free space. For more information on installing and using EGOed, see "How to Use your GS+ Disk."

you paste, additional spaces are used to pad the pasted text. The undo code doesn't know how to cope with this, either. The result is that you'll appear to lose spaces when you undo after a paste operation. Just be sure to watch for it.

Among Other Things

Two other new features have been added to EGOed: smart quotes and extended keyboard support. One user in particular (you know who you are, Matt) has asked for smart quotes, and I know a lot of people have wanted extended keyboard support. Now you can type things like "don't" and you'll "automagically" get those "groovy" little curly quotes—you don't even have to select the text and then choose the 'Curly Quotes' item from the "Style" menu. (You can't possibly imagine how easy it was to type that last sentence with smart quotes on as compared to the "old" way!) The other new feature, extended keyboard support, lets you use the extra keys on an extended keyboard to perform standard editing functions such as undo, cut, copy, and paste by hitting F1, F2, F3, and F4 (option-F1, as you might expect, performs redo). You can navigate through the EGOed window by using the home, end, page up, and page down keys. The home key takes you to the beginning of the current line (same as option-left arrow), the end key takes you to the end of the current line (same as option-right arrow), the page up key takes you up a page (same as Command-up arrow), and the page down key takes you down a page (same as



Command-down arrow). In addition, option-page up and option-page down will take you to the very beginning and the very end of the EGOed window, respectively (same as option-up arrow and option-down arrow). Finally, the extra delete key on the extended keyboard works just the same way as typing control-F—it deletes the character to the right of the cursor if no text is selected, or, if text is selected, it clears the selection. (For a summary of EGOed's extended keyboard support, see Figure 2.)

I Prefer Not To

Two out of the three new features prefer... preferences. You can turn off the smart quotes option if you can't stand it. (But after typing this article with it on, I don't think I'm ever going to go back to not using smart quotes!) Also, if you don't think you'll be using undo, or if memory is running low, you can turn off the undo feature. (To change these preferences, select the Preferences item from the EGOed Edit menu.) Undo can take up a lot of memory (it has to remember the text and style of *everything* to undo), so if you're running on a low-memory machine, it's probably a good idea to keep undo turned off. Maybe in the future, I'll put in a way to make undo only one level deep to conserve memory. If you think this would be a good idea, let me know via your feedback form.

The third option, extended keyboard support, does not have its own preference. If you have an extended keyboard, you automatically get extended keyboard support. If you don't have an extended keyboard, it really doesn't matter. There is a flag bit that can be cleared to turn off extended keyboard support (it's part of the Miscellaneous Library—undo, smart quotes, and extended keyboard support all come from the Miscellaneous Library) but Diz figured that, since it doesn't hurt non-extended keyboard people to have the extended keyboard support turned on all the time, it didn't merit a preference. However, checking for the extended keys *does* take up a bit of processing time, so you might see a "support the extended keyboard" preference in the future.

Print

Another change I made to EGOed is to the

Figure 2
Extended Keyboard Keys

<u>Key</u>	<u>Function</u>
F1	Undo
F2	Cut
F3	Copy
F4	Paste
home	Go to beginning of line
end	Go to end of line
page up	Scroll up one screenfull
page down	Scroll down one screenfull
del	Delete the character to the right of the insertion point
option-F1	Redo
option-page up	Go to the top of the file
option-page down	Go to the bottom of the file

way it prints. The small (from a user's point of view) change is that the main print loop now reports errors better. (Actually, almost the entire print loop was rewritten from scratch.) The big change is in the way EGOed maintains its print record. Previously, EGOed tried to keep a valid print record around at all times. When you selected the "Print" menu item, EGOed made sure the print record was valid and then printed. Now EGOed keeps the last print record around whether it's valid or not. When you select the "Print" menu item, the print record is checked, and if it is invalid (as it probably will be if you have changed printers in the Control Panel), the "Page Setup" dialog is presented so you can make any changes before you print.

Subtlety...

The last change I made to EGOed is present in the "Save As" dialog. Can you see it? Look hard.... The "Volumes" button has changed into the "Disks" button in order to look at home when System Software v6.0.1 hits the streets. You can already see the trend of this button labeling in GS-ShrinkIt v1.1. (Boy, talk about a human interface nightmare: it went from "Disk" to "Volumes" and then back to "Disks"! You'd think that consistency would be a factor, eh? I rather liked "Volumes" myself, and will miss it when it's completely gone.)

Now, I'll turn the column over to Diz so he can describe the changes that he's made for this version.

Thanks Joe!

What a great way to celebrate EGOed's third birthday! To think it all started with little program I threw together in two weeks! At any rate...

About all I did for this version of EGOed was rewrite two of the simpler code segments in Assembly Language. In addition to saving a bit of space, this appears to have also fixed a rather annoying incompatibility that EGOed had with SoftDisk G-S's Personal Journal program. (Thanks to everyone that sent in their problem forms, and to Bryan Pietrzak of SoftDisk G-S for helping me find and fix this one.)

I also fixed a bug where I was not doing enough error checking when opening files. This bug would show up when you had enough memory to actually open and read the file into memory, but not enough to transfer the file into the EGOed window. The result would be a brand new EGOed window with the correct file name in the title bar, but the window would be completely empty! EGOed will now correctly check for this situation and report an error if you run out of memory while opening a file. Thanks to Sönke Behrens of Germany for sending in his problem form and helping me to quickly identify and fix the problem.

Other than that, I put in the new "Enable Undo/Redo" and "Smart Quotes" preferences and generally pestered Joe to hurry up and give me my source code back. Fortunately, I think the end result was is great, and I hope you'll agree!

Finally, I need to remind you how very important it is to take the time to read the EGOed documentation that is on your GS+ Disk. EGOed is a very large, very powerful and very complex piece of work. To get the most out of it, you really need to read the documentation that's on your GS+ Disk!

Figure 1
How To Redo Something

- Press option-control-Z
- Press option-Command-Z
- Press option-F1 (extended keyboards only)
- Hold down the option key and select Undo from EGOed's Edit menu
- Hold down the option key and select Undo from the host application's Edit menu

[Editor's Note: The Miscellaneous Library is not a stand-alone program! It is a programming tool that we think advanced readers of *GS+* Magazine will find very useful. It is intended for those doing advanced IIGS programming.]

The Miscellaneous Library (MiscLib) is a collection of various routines I have found myself using over and over. They can be used from any language that supports linking to standard libraries, such as ORCA/C and ORCA/Pascal. For detailed assembly language stack diagrams on how to make the calls, and for a short description of the parameters, see the figures in the `MiscLib.Docs` file. (This file is located in the `GSP.V4.N2.SEA` self-extracting archive on your *GS+* Disk.)

First off, before I get into the groovy new stuff, I need to say that the documentation for MiscLib from *GS+* V4.N1 was incorrect with regards to one call: `DeleteMemRec`. The documentation from that issue called this routine `RemoveMemRec`, but its real name is `DeleteMemRec`. This has been corrected in the documentation for this version. Another change to the documentation has to do with the `About` description—I had neglected to mention show that you need a `rPString` resource to name the about window in the sample `Rez` code. One other correction from the previous MiscLib release was made in the `MiscLib.PAS` file—the definition for the `SplitPathname` routine needed a pointer to the `SplitRec` record, so I was going to be smart and code it with a `Var` statement instead of declaring the argument as a pointer. Unfortunately, I went overboard and coded the wrong type! So instead of being `Var resultPtr : SplitRec`, which is correct (and is now correct in the `MiscLib.PAS` file), I had coded `Var resultPtr : SplitRecPtr`. I guess my brain overloaded for a second while I was being smart. (Of course, Diz will probably argue as to the duration of my brain overload... and he might disagree with the smart part, too.)

Also, a change has been made to the way the `ConvertQuotes` routine works. First off, a nice little bug has been fixed that was present when the `ConvertQuotes` routine was originally in `GWLib`. The previous character flag was not being set correctly for a closing single quote (') character. When I converted the source code to follow the ORCA language high level parameter

passing conventions, I neglected to go over the code with a fine tooth comb—I just changed the entry and exit portions. The reason I found the bug was... well... maybe you'll pick up on it a bit later.

A change has also been made to the quote conversion rules. Previously, an opening curly quote was produced after tab, space, or return characters. Now, an opening curly quote is produced after tab, space, return, opening parenthesis '(', opening bracket '[', and opening brace '{' characters. Now you can type comments ("like this one") and the opening quote will be set correctly when you run it through the `ConvertQuotes` routine. The new set of curly quotes rules are shown in Figure 1.

And Now A Bit Of History

Well over a year ago, I was working on an EGOed-like program that never found its way to final status. One of the unique features of the program was that it actually had undo capabilities. The undo was only one "level" deep, and the way in which undo was implemented was intricately tied into the program structure, but nonetheless, it worked (to a point, which will be described later). Emerging from the flashback, I was working on sprucing up the `Replicator` documentation just the other day and I selected a big block of text and hit `Command-C` to copy the text to the clipboard... but I made a grave error: my finger slipped off the `Command` key and I hit "C" instead! Eeek! All my beautiful selected text suddenly collapsed into a single snarling character. Oh what I

would give for undo! It was at that point that I decided that I might be able to "black box" my undo code from years past and throw it into EGOed. And, believe it or not, three days later, I had a working prototype. Not only did my new undo code work, but it was a big enhancement over the old one-level-deep undo—the new code supported multiple levels of undo!

Using Undo

If you have a project in which you want to be able to have undo, smart quotes, or extended keyboard support capabilities with a `TextEdit` control, then the new Miscellaneous Library `TextEdit` routines are for you! In fact, if you already have your program written, it's extremely easy to put the new undo code in. (EGOed was retrofitted to work with the undo code in under 30 minutes.) For the specifics on how to use undo from your programs, break out the `MiscLib.Docs` file located in the `GSP.V4.N2.SEA` self-extracting archive on your *GS+* Disk. If you want to learn more about how undo actually works, read on.

Undo Theory

Understanding how undo works isn't really that difficult if someone presents it, but it sure was a headache developing it. (I'd say it took me over a year to develop the concept, but that wasn't constant development time, eh?) First, it might do you a bit of good to read the documentation of how to put undo in your program before I continue explaining how it actually works behind the scenes. Basically, for each `TextEdit` control you

Figure 1
Quote Conversion Rules

- 1) IF a quote follows a number
THEN leave it alone (1990's becomes 1990's)
- 2) IF a quote follows a tab, return, space, opening parenthesis '(', opening bracket '[', or opening brace '{'
THEN make it an opening quote of the same type (" becomes {")
- 3) IF a double quote follows an opening single or a closing double quote
THEN make it an opening double quote (" becomes "" and "" becomes """)
- 4) IF a single quote follows an opening double or a closing single quote
THEN make it an opening single quote (" becomes "" and " becomes '')
- 5) IF a quote follows any other character
THEN make it a closing quote of the same type (this" becomes this')

Note: There are rare loopholes to these rules. For example: Shout "1990" to them. becomes Shout ""1990" to them.

Figure 2
Keys That Need Special Processing

<u>Keystroke</u>	<u>Function</u>
control-D	Delete to the left/clear
control-F	Delete to the right/clear
control-H	Left arrow
control-J	Down arrow
control-K	Up arrow
control-U	Right arrow
control-V	Paste
control-X	Cut
control-keypad-X	Clear
control-Y	Delete to end of line/clear
control-Z	Undo/Redo
delete	Delete to the left/clear
Command-option-z	Redo
Command-option-Z	Redo

want undo to be valid for, your program maintains a handle to a master control information record. The master control information record contains a "typing" flag, a set of generic flag bits, a handle to the next level of undo, and redo information. Undo and redo information are basically the same: a handle to the text to undo or redo, a handle to the style to undo or redo, and the selection in the *current* text (not the undo or redo text) that needs to be replaced. So basically, when you select undo, the topmost undo record is retrieved, text that needs to be thrown away in the TextEdit control is selected, and then the selected text is replaced with the text from the undo record.

You might be wondering exactly how undo knows how to create a new undo record. That's the job of the TENEwUndo call. When your program calls TENEwUndo, a couple of things could happen. First off, any redo information is disposed of and the topmost undo record is "closed" by setting its endpoint to the currently selected text's selection end, but only if the ending position for it is \$FFFFFFF (the reason for this is explained in a minute). If you pass an undo code other than NoUndo, a new undo record handle is generated and put at the top of the undo stack. Next, the currently selected text is retrieved and put into the undo record along with the selected text's starting position. The text's ending position is set to \$FFFFFFF, which means that the end is *not known* yet. Now, whenever an undo operation needs to be performed, the topmost undo record is closed (its endpoint is set) if it needs to be, the selection from the undo record is selected in the current TextEdit control, and then

TEReplace is called to replace the selection with the text and style from the undo record. If the NoUndo code is passed to TENEwUndo, the topmost undo record is closed and that's all that happens. Also, the typing flag in the master undo record is cleared unless you pass the TypingUndo code to TENEwUndo. TEEvent checks the typing flag to know if it needs to call TENEwUndo when a key is pressed—if the flag is set, an undo record for the text that is being typed has already been generated and its end will be set by closing the undo record when the next TENEwUndo is called. If the flag is clear, a new typing undo record needs to be created, so TENEwUndo is called with the TypingUndo code to create the new undo record. That's all there is to know about undo. If it doesn't make much sense, grab a piece of paper and a pencil and generate some hand-drawn undo records for actions that you normally perform in TextEdit controls. Pay particular attention to closing the undo record, since that's where a good part of the magic occurs.

Redo Theory

Redo is essentially the same as undo, but its information in the master control information record is set differently. Instead of being set by TENEwUndo, redo information is set by TEUndo. When TEUndo is called, the currently selected text is copied out into the redo buffer, the selection start is set, then the text from the undo record is replaced. After the text has been replaced, the selection end for redo is set. (Again, draw this out on paper so you can see how the selection is remembered.) Now it is safe for a redo operation to take place. When TERedo is called, the selection from the redo record

is selected and TENEwUndo is called to take the selected text and place it back on the undo stack (that's where it previously came from and it needs to go back there). Next, the text from the redo record is replaced, and the redo text handle is set to \$FFFFFFF to signal that the next redo operation should actually be an undo operation since the text that was replaced is now on the undo stack. The next time TERedo is called, the text handle will be checked for \$FFFFFFF, and then TEUndo will be called. TEUndo will set the redo information, so the next time TERedo is called after that, an actual redo will be performed. Pretty tricky, huh?

In simpler terms, undo takes the current TextEdit selection and moves it to the redo record, then the text from the topmost undo record is moved to the TextEdit control. Redo re-selects the "undone" selection in the TextEdit control and moves it back to the undo stack, then the text from the redo record is put back into the TextEdit control. Now the next time redo is chosen, all that needs to be done is an undo operation.

TEEvent Theory

At the heart of undo is the TEEvent call. TEEvent checks the event record passed to it to see if it is an event it needs to handle. If the event is not a key down or auto key event, TENEwUndo is called with the NoUndo code to close the current undo record and clear the typing flag, then TEEvent returns a false value to let the caller know that it needs to process the event further. If the event is a key down or auto key event, the key is checked to see if it needs special processing. If not, then the key is passed to the TextEdit control via the TEKey tool call. Keys that require special processing are shown in Figure 2.

Special Processing

In order for undo to work properly, keys that change the selection or text must be specially handled. The first case is control-Z. When control-Z is pressed, TEUndo or TERedo is called based on the state of the option key, then TEEvent returns a true value letting the caller know that the event was fully processed. Pressing Command-option-z or Command-option-Z also calls TERedo. The reason for this is because with the keyboard translation set to "Standard" in the Keyboard control panel, pressing Command-option-<character> actually generates Command-(option-<character>), and not (Command-option-<character>), which would be ideal for recognizing option characters. This means that the MenuKey tool call will not match these option key characters to z or

Z, so TEEvent has to handle this for you.

When an arrow key (control-H, control-J, control-K, or control-U) is pressed, TENewUndo is called with the NoUndo code to close the topmost undo record, then the event is passed on to TEKey, and finally TEEvent returns a true value letting the caller know that the event was fully processed. (Changing the current selection always requires TENewUndo to be called.)

When a cut, paste, or clear operation needs to take place, TENewUndo is called with the appropriate undo code, the event is passed on to TEKey, and finally TEEvent returns a true value letting the caller know that the event was fully processed.

When a delete to the left operation needs to take place, the selection is checked to see if text is selected. If text is selected, a clear operation should be performed instead of a delete to the left, so TENewUndo is called with the clear undo code, the event is passed on to TEKey, and finally TEEvent returns a true value letting the caller know that the event was fully processed. If no text is selected and the selection starts at position zero, then TEEvent simply returns a true value without any further processing since it is not valid to delete past the beginning of the text. If the selection starts anywhere other than position zero, the character to the left is selected so TENewUndo can remember the selection, then TENewUndo is called with the delete to the left undo code, the event is passed on to TEKey, and finally TEEvent returns a true value letting the caller know that the event was fully processed.

When a delete to the right operation needs to take place, the selection is checked to see if text is selected. If text is selected, a clear operation should be performed instead of a delete to the right, so TENewUndo is called with the clear undo code, the event is passed on to TEKey, and finally TEEvent returns a true value letting the caller know that the event was fully processed. If no text is selected, then the character to the right is selected. If the selection is at the end of the text, the selection won't take place, so TEEvent simply returns a true value without any further processing since it is not valid to delete past the end of the text. If the selection worked, then TENewUndo is called with the delete to the right undo code, the event is passed on to TEKey, and finally TEEvent returns a true value letting the caller know that the event was fully processed.

When a delete to the end of the line operation needs to take place, the selection is set to the start of any selected text, the selection start is remembered, the insertion point is moved to the end of the line by passing an option-control-U to TEKey, then the text from the end of the line to the remembered start is selected, TENewUndo is called with the delete to the end of the line code, the event is passed on to TEKey, and finally TEEvent returns a true value letting the caller know that the event was fully processed.

TEGetText

Remember the point which I said would be described later? Now it's later. The major reason why I stopped development on my first undo project was because I found a problem in the TEGetText toolbox call. Whenever the currently selected text needs to be retrieved from the TextEdit control, TEGetText is called with the teOnlyGetSelection bit set. However, this bit only works for the *text*, not the *style*! So basically you end up with the selected text, but with the style for the *entire* TextEdit control. This is not acceptable. In order for undo to work properly, I had to write a routine which would take the style information that is returned from TEGetText and generate a style structure that is valid for only the selected text. This is what the TEGetSelectText routine does. To generate a valid style structure, the returned structure is traversed until the style applied to the first selected character is found. Next, the valid styles are traversed to find the style applied to the last selected character. Finally, the valid style block is moved to the start of the style list by a BlockMove call and the entire style structure is resized to discard the memory needed to reference the invalid styles. Note that the style dictionary is left alone—any unique styles in the entire TextEdit control that are not in the current selection will still have entries in the resultant TEFFormat structure. Removing the style entries would entail a lot of extra processing that I didn't want to do at the time, and since it doesn't hurt anything to carry the extra style entries around, I deemed having unused entries an acceptable result.

The remainder of the support routines for undo are fairly simple and you should be able to see what they do just by looking at them and reading the comments.

A Bit Later: Pick Up On It Now

Two last minute changes were added to the TEEvent code. Since the TEEvent code gets keypresses before TextEdit does, it can do some special processing and

translation of the keys (a la control-Z). So, with that mentioned, TEEvent can recognize character codes sent from an extended keyboard and act on them. When an extended keyboard key is recognized (it's basically a key down event with the keypad bit set in the modifiers), the event is translated into an equivalent TextEdit character combination. For example, pressing F2 (the cut function key) results in a keypad-c event. TEEvent sees the keypad-c and translates it into a control-C event (telling TextEdit to cut).

Another translation that TEEvent can do is the translation of straight quotes (" and ') into curly quotes (" , ' , and '). This translation is done as you type and is called "smart" quotes. The translation follows the new quote conversion rules as described in Figure 1. The translation is done without the aid of the CurlyQuotes routine since the CurlyQuotes routine is optimized for converting quotes in blocks of text, not converting a single character as it is typed, but I did use the CurlyQuotes routine as a guide for how the smart quotes translation should take place. Basically, whenever a straight quote is typed, the previous character is selected in the TextEdit control, retrieved, the selection is set back to where it was previously, and the previous character is then tested to see what kind of conversion is necessary. All of this means that there is not really a reason to keep the CurlyQuotes routine around, doesn't it? Well, almost . . .

IMPORTANT: Flag Bits

In addition to undo control information, the master control information record contains a set of flag bits which tell TEEvent and TENewUndo how to operate. Currently there are three defined flag bits: teeUndo, teeSmartQuotes, and teeExtendedKeys. By setting or clearing these bits (using the TEESetFlags call—you can find the current flag setting with the TEEGetFlags call) you can effectively turn undo, smart quotes, and extended keyboard support on and off. When undo is turned off, TENewUndo doesn't create any new undo records. When smart quotes and extended keyboard support is turned off, TEEvent doesn't perform any translation for the relevant keystrokes. It's that simple. (The "tee" part of the flag names stands for TEEvent, in case you are curious.)

Bringing It All Together

In Figure 3 you'll find short descriptions of the TextEdit calls for the Miscellaneous Library. To see these calls "in action"

break out the EGOed source code that is on your GS+ Disk. It's a rather exhaustive example of how to use these calls to implement undo/redo, smart quotes and extended keyboard support using these new Miscellaneous Library calls.

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

Figure 3
The Miscellaneous Library TextEdit Calls

TENewEventRec:	Returns a new master control information record to keep with a TextEdit control
TEDisposeEventRec:	Disposes of all the memory associated with a master control information record for a TextEdit control
TECleanUndoInfo:	Disposes of the undo stack and redo information associated with a TextEdit control, but does not dispose of the master control information record
TEEvent:	Handles the events for a TextEdit control
TENewUndo:	Creates a new undo record and pushes it on the undo stack
TEGetUndoType:	Returns the next pending undo type
TEGetRedoType:	Returns the next pending redo type
TEUndo:	Pops an undo record off the undo stack and performs the undo
TERedo:	Performs redo, which undoes the last undo operation
TESpecial:	Handles the undo, cut, copy, paste, and clear menu items
TEGetSelectText:	Returns the text and styles selected in a TextEdit control
TEGetFlags:	Returns the flags in a master control information record
TESetFlags:	Sets the flags in a master control information record

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Rumors, Wishes & Blatant Lies

By Prof. G. S. Gumby

Too Many Clues

A certain Apple II hardware and software company is said to be working on a new type of accelerator board for the IIGS. Unlike the TransWarp GS or ZipGS, this new board is an *extremely* high-speed coprocessor card that you can upload programs to for execution. For example, a replacement for QuickDraw II could be uploaded to the card, where it would execute up to 30 times faster than a standard TransWarp GS. The best part is that multiple programs can be uploaded to the card for execution at the same time, and this extra speed will be *in addition* to any you are already getting from your TransWarp GS or ZipGS! Sound too good to be true? Well, my source for this is very *dependable*. And he isn't *prone* to lying. But we'll see in about six months . . .

Naughty Bits

As you may have heard, the Avatar project is still going full-steam ahead. In fact, they hope to have a prototype or two ready before the spring of next year. As you might expect, they will have to work long into the night to meet that kind of schedule and reports coming out of Avatar central indicate that's exactly what they

are doing. The proof is in some of the silly names that they are giving things. For example, GS/OS is being replaced with BS/OS (which, of course, stands for the "Burger-San/Operating System," what did you *think* it stood for?), and in recoding the Window Manager, they've replaced TaskMaster with the much crueler TaskMistress (\$3 for the first call to it and \$1.95 for each additional call). Whoa! Take a break, guys!

Out Of The Bottle

First it was that Aladdin movie, now this! The A2 area on GENie is rapidly reaching its 20,000th upload. So, the folks in charge decided to do something special for the lucky soul that actually uploads that 20,000th file. In addition to having a multitude of normal prizes (including a snazzy GS+ T-Shirt!) heaped upon him, the lucky uploader will get copies of some very *special* photos (taken by yours truly at KansasFest '92) featuring some of the A2 area sysops, and an air-sickness bag. Oh! Joy!

Every Dog Had His Day

Well, if you haven't heard by now, Beagle Bros. has been, er, put to sleep by the owners, and all of their Apple II

products are now under the control of Quality Computers. Apparently, when they moved all of their puppies into the Macintosh pen, no one wanted to adopt them. Not surprising, as every review that I read of BeagleWorks said it was a dog. (If you didn't see that one coming, you really need help.)

Seriously, Beagle Bros. will be missed. Our Technical Editor was an especially big fan of the older Beagle Bros. products and we want to wish good luck to all of the ex-Beagles!

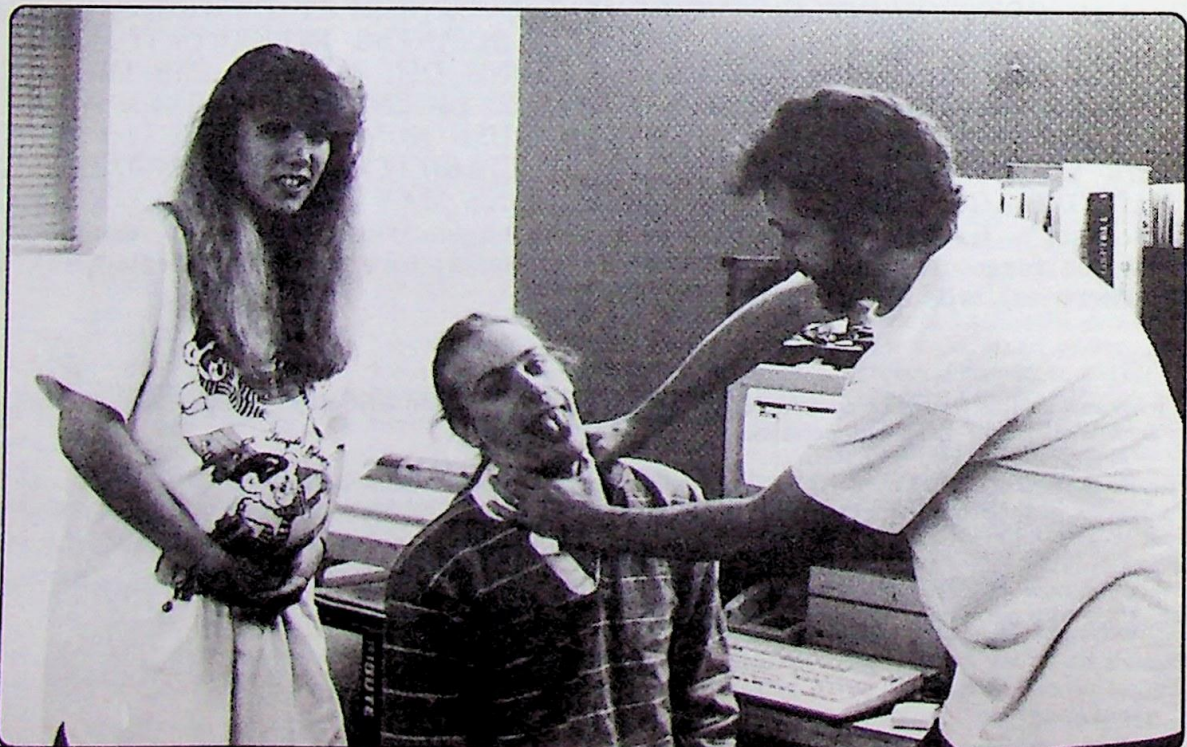
Peek-A-Boo! I C You 2!

IIGS programmers rejoice! Rumor has it that ORCA/C v2.0 is currently entering the last stages of beta-testing and should be released soon. Our extremely sneaky (yet well-dressed) spies tell us that, among other things, version 2.0 produces *much* better code, includes honest-to-gosh prototyped header files, and even makes a stab at precompiling those header files to speed up compile times! One thing that won't be included: C++ style comments. Awww.

In Other News

Back in "What's New" in GS+ V3.N5, we

If you think this issue's cover photo was in bad taste . . .
take a look at the photo they decided *not* to use!



reported on an Apple II mail-order outfit called North Coast Computing. Well, guess what? Their phone has been disconnected, and there is no indication that they will be getting it hooked up again anytime soon. Don't feel too bad though, they sold Mac and IBM stuff too.

The Twilight II Zone

First of all, I need to let you know that the publishers of Twilight II ("What's New" in *GS+* V4.N1), have changed their name to "DigiSoft Innovations." Apparently, someone else liked their old name too and, more importantly, used it first. At any rate, since they had to get a new name, the folks at DigiSoft Innovations decided to get themselves a new address to go along with it. From now on, you can contact them at:

DigiSoft Innovations
P. O. Box 380
Trumbull, CT 06611

Having said that, if you have placed an order for Twilight II, you may have experienced a bit of a delay in getting it. You may also be wondering where the promised v1.0.1 update is. Well, rumor has it that the motherboard of the IIGS that DigiSoft Innovations uses for development (and record keeping and everything else) decided to have a nervous breakdown. But, it's fixed now, and the v1.0.1 update should be released soon.

Name Game, Part II

So why did ECON Technologies have to change the name of "AutoArc" to "AutoArk?" Well, it seems that a very powerful company in the MS-DOS world already has a trademark on the word "Arc" when used in the context of compression software and they didn't like ECON using the word in their product name. The folks at ECON shouldn't feel badly though, scuttlebutt in the MS-DOS universe has it that these guys would have sued Noah if he had spelled things differently.

HyperActivities

First it was AppleFest, then KansasFest, now it looks like there's going to be a HyperStudio Festival sometime in 1993! Details are sketchy at this point, but apparently, Roger Wagner Publishing is planning to hold a trade show centering around HyperStudio in the spring or fall of 1993. It will be held somewhere in California and will feature HyperStudio for the IIGS, HyperStudio for the Mac (yes, you read that right, there's going to be a Macintosh version of HyperStudio soon), and probably a museum-style exhibit of all of Roger's Hyper-ties. **Wowzers!**

Zipless Drive

Remember the Zip Drive? You know, the little hard disk on a card that Zip ran one advertisement for and then sort of let disappear? Yeah, that one. Well, it seems that Zip and the manufacturer of the drive are having a little, er, disagreement, and the manufacturer is looking for a new distributor for the drive. Hmmm, how does, "EGO Drive" sound to you?

Official!

Remember all that neat new stuff that we told you about System Software v6.0.1 in our KansasFest report? (*GS+* V3.N6) Well, during the Apple User Group Connection UG-TV broadcast, lots of that stuff was officially announced! Stuff like keyboard navigation in the new Finder (so you can just type the name of an icon to select it, or use the arrow keys to move from icon to icon), and a *read-only* MS-DOS File System Translator. (Sorry, no write or formatting capabilities yet. But hey, it'll be better than nothing!)

One thing that's still up in the air is availability. As with System 6, the official target release date is, "When it's done."

This One's True. Honest!

If you only read *GS+* Magazine (bless you!) and hadn't heard this rumor before, supposedly, *inCider/A+* magazine was going to be going 100% Macintosh with its February issue. These rumors were given extra credibility because they were actually being circulated by the editors of *inCider/A+*! Fortunately, the people above the editors (generally known as "the hosts of heaven" in the the publishing industry) decided not to make the switch and keep *inCider/A+* just the way it is.

In fact, according to the press release that we just got from the folks at A+ Publishing, in the months to come, *inCider/A+* will be shifting the majority of its coverage *back* towards the Apple II, with Macintosh coverage relegated to a special section of the magazine! This is pretty much the opposite of what was rumored to be happening (i.e. the Mac taking over the magazine with the Apple II coverage relegated to a special section).

Hat's off to the folks at A+ Publishing for sticking with the Apple II!

Reason II Live

While I join with everyone in welcoming Quality Computer's new Apple II magazine, *II Alive*, to the scene, I'm wondering how Quality feels about *II Alive* now that the rumors about

inCider/A+ turning its back on the Apple II turn out to be completely untrue? I ask this because, in an extremely good editorial in the latest *Enhance* magazine (another publication of Quality Computers), Quality's president Joe Gleason pretty much says that the number one reason they began *II Alive* was because of the supposedly pending changes at *inCider/A+*. Still, a new Apple II magazine is great news, regardless of *why* it's happening!

Can't Take A Joke?

Some of you may have noticed that while there have been references to a "page 53" in the last two issues, there has not actually *been* a page 53. This has prompted several irate letters from readers that, perhaps, didn't realize this was intended as a joke. (Just like this issue's cover photo.)

Actually, I'm not sure which is scarier, the fact that some folks didn't realize that this was a joke, or the fact that someone actually wanted to see a centerfold of Paul Statt.

Out Of This World Sales

Well, imagine that! Rumor has it that Out Of This World [see review in this issue] is selling *very* well and, due to that, InterPlay has decided to go ahead with another IIGS product, *Mario On Typing*. Could this be the beginning of a new batch of game development for the IIGS? Only your dollars know for sure!

Such Style!

If you own a StyleWriter printer, you'll be happy to know that rumors tell us that Apple is planning on doing an improved IIGS driver for the StyleWriter. Rumor also has it that a new, network-capable StyleWriter is in the works and should be out sometime in 1993.

"Where Do They Get This Stuff?"

From *you* of course! Send those rumors, wishes and blatant lies to:

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

How to Use your GS+ Disk

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

Installing The Software

To install the software on this issue's GS+ Disk, start up your computer using System Software v5.0.4 or later. (Note that most of the programs on this issue's disk require System 6! For more information, refer to the article for each individual program.) Next, place your backup copy of the GS+ Disk in a drive. (You did make a backup didn't you?) Now run the Installer program that is on your GS+ Disk. (From the Finder, you would double-click on the Installer icon.) It is extremely important that you use the Installer that is on your GS+ Disk! Do not use any other copy of the Installer!

When the Installer window appears, select the item you want to install from the left-hand window and the disk you want to install it on in the right-hand window. Then click on the Install button. For more information on how to use the Installer, refer to your IIGS owner's manual.

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

Installing EGOed

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

- Start up your IIGS with System Software v6.0 or later—the version of EGOed that is on this GS+ Disk requires System 6! (Your GS+ Disk is not a startup disk, so don't try starting your computer with it.)
- Insert your backup copy of the GS+ Disk into a drive and run the Installer program that is on your backup GS+ Disk. It is very, very important that you run the Installer that is on your backup GS+ Disk and not some other copy of the Installer.

- When the Installer finishes loading, click on the Disk button on the right-hand side of the Installer window until your startup disk appears. (If you only have one 3.5-inch disk drive, you will have to remove the backup GS+ Disk from the drive and replace it with your startup disk. You should also refer to the "Making Room" section below for hints on how to free up room on your boot disk.)

- On the left-hand side of the Installer window, you will see a list of the items on the backup GS+ Disk. One of the items in this list should be "EGOed." (If EGOed is not in this list, quit the Installer and begin again. Be sure that you are running the copy of the Installer that is on your backup GS+ Disk!) Once you see the EGOed item, click the mouse on it so that it becomes highlighted.

- Click the mouse on the Install button in the middle of the Installer window. The Installer will then install EGOed on your startup disk. If you only have one 3.5-inch disk drive, you may have to switch disks several times. Simply insert each disk as the Installer asks for it.

- When the Installer has finished, click on the Quit button in the middle of the Installer window. This should cause your IIGS to restart.

- When your IIGS finishes restarting, pull down the Apple menu and select EGOed (note that you have to be in a desktop program like the Finder to have access to the Apple menu).

- When EGOed finishes loading, select Open from the EGOed File menu and then insert your backup GS+ Disk into a drive. You should then see a list of the files and folders on the GS+ Disk.

- Open the Documentation folder on your backup GS+ Disk and then open the file EGOed.Docs. This file contains complete documentation on how to use EGOed. Please take a few minutes to read this documentation.

Making Room

If you do not have a hard drive, you will probably have to remove some files from your startup disk to make room for the New Desk Accessories, Control Panel Devices, and other system files that come on the GS+ Disk.

Towards that end, we have prepared the following list of "expendable" files that you can "safely" remove from your System Software v5.0.4, or System Software v6.0 startup disk to free up some space. (We've put quotes around "expendable" and "safely" because almost all of the files in the IIGS System Software have some sort of use! The files we are presenting here are the ones that are the "least" useful for a specified hardware setup.)

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

System Software v5.0.4

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

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

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

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

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

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

System Software v6.0

If you use the System 6 :Install disk to create a minimal, 800K, System 6 boot

disk, that disk will have 26K of free space on it when the installation is finished.

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

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

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

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

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

If you have a ROM 01 IIGS, you may delete the file `*:System:Set-`

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

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

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

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

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

Note however, that you will *not* be able to print from EGOed or any other desktop program when using an 800K, System Software v6.0 boot disk.

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 here at *GS+* Magazine.

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.V4.N2.SEA` program on your *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 would gain better control over the files you wish to extract if you have *GS-ShrinkIt* v1.1. If you do not have *GS-ShrinkIt* v1.1 and you would like a copy, check with your local user

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+ V4.N2 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!

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 eight items in the root directory of this issue's disk. They are:

a. Read.Me

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

Documentation

This folder contains the glossary as well as the EGOed and Replicator documentation files. The glossary is a plain text file containing all of the terms defined in the past installments of our "Glossary" department.

GSP.V4.N2.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 Working With The Toolbox sample

source code and program, as well as the OS Library and Miscellaneous Library. Technical information, such as the OS Library documentation, 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. 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 the EGOed, Font Reporter, and Replicator programs. Use the Installer provided on your *GS+* Disk to automate the installation of these programs.

Scripts

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

Talk.To.GSPlus

This folder contains the feedback form, the problem form, and the *GS+* Magazine writer's guide.

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 have a problem with one of our programs, *please* fill out the problem form and send it to us! This a Teach file, you may use EGOed or the Teach application from System 6 to view it.

The writer's guide is a Teach file that explains what you need to do in order to write reviews, articles, programs, etc. for *GS+* Magazine—you may use EGOed or the Teach application provided with System 6 to view it.

Please Remember...

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

How To Get System 6

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

1) Five (5) *blank and formatted*, 3.5-inch diskettes 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 System 6?

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

Your Apple dealer. Bug them until they get it in for you. The retail price is \$39, but that includes manuals. The part number is #A0077LL/A. For the name of your local Apple dealer, call (800) 538-9696.

Your user group. Bug them until they get it in. Take your own disks and they 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+*

Total Hard Drive Mastery!

Desktop Interface

Conforms to the Apple Human Interface Guidelines making each function simple and intuitive to use. Takes advantage of many System 6.0 interface enhancements.

Batch Command Functions

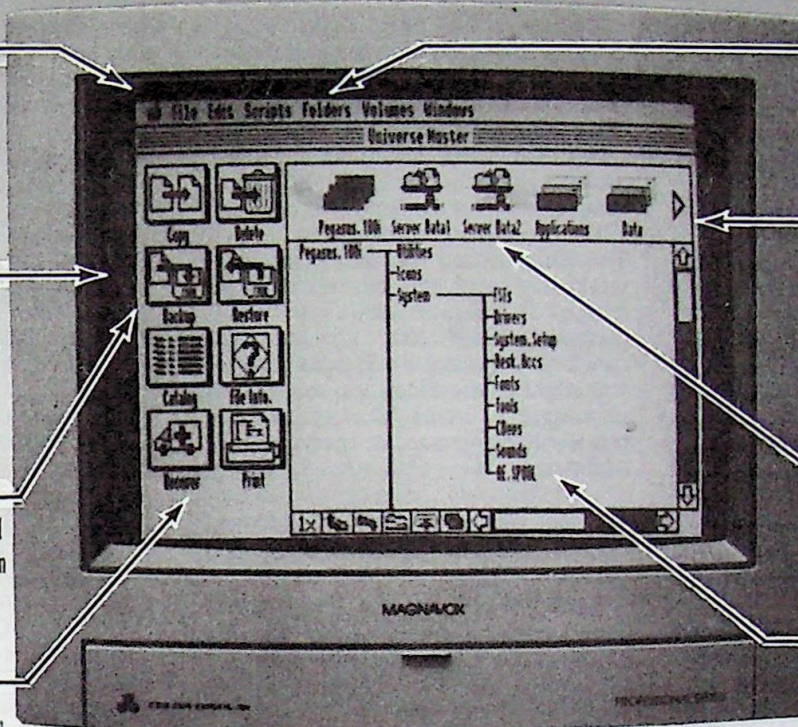
Common tasks are grouped together as 'command buttons'. Just select the folders you want to work with and click the appropriate button...

Automated Backup & Restore

Create backup scripts that can be executed later either within Universe Master or from the Finder™ desktop...

Advanced Functions

File attribute modification, file undeletion, and extensive volume printouts are just a simple mouse click away...



Folder Manipulation

Edit folder contents at the file system level. You can also sort folder entries based on multiple criteria.

Volume Management

Validate volume contents and repair any file system corruption. Other functions include media analysis, data optimization, volume reconstruction, and a block level editor.

Full GSOS Support

Perform operations on any device recognizable by GSOS including network file servers.

Hierarchical Display

View the contents of your volumes hierarchically as stored on disk. Select a folder or hierarchical branch just by clicking on it.



Universe Master

The Premier File Management System
For the Apple IIs

Introducing Universe Master™, a whole new experience in disk management utilities. Universe Master is the first Apple IIs utility that seamlessly integrates all of the disk manage-

ment capabilities you will ever need into a single, desktop based, System 6.0 specific application. Universe Master opens the door onto a whole new world of disk management. No longer will you postpone backups because they are slow and cumbersome... No longer will your data become disorganized and scattered across redundant folders... No longer will you live in fear of corrupted file systems. Universe Master makes managing your hard drive safe, effective and downright fun. If you have an Apple IIs and a hard drive, why take chances with anything else?

Available NOW from ECON or your favorite Apple II retailer. List price: \$149. Universe Master requires an Apple IIs with System 6.0, 1.5mb RAM and a hard disk drive.

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Is your hard disk bursting at the seams with data? Is that 20 or 40mb drive looking more like a floppy disk? Do you need more storage space but aren't prepared to shell out big bucks for a new hard drive system? If so, let AutoArc take control of your inflated files. With AutoArc installed on your system, you'll be able to specify any file or group of files to be stored in compressed format, requiring an average of 50% less disk space! These files remain compressed until you need them, at which time they are automatically expanded and loaded as if they weren't compressed at all! Virtually any application or document can be stored in compressed format, winning back valuable disk space. So if your data has your back up against the wall, let AutoArc help win back your freedom to get the most from your Apple IIs!

AutoArc requires System 6.0 and Finder 6.0. It is available NOW from your favorite Apple II dealer. List price: \$59.95.

Reviews

AutoArk

Programmed by D. Proni

Retail price: \$39

Typical mail-order price: \$28

Not copy protected

Requires one 3.5-inch disk drive, 1MB RAM, System Software v6.0 or later (a hard disk is recommended)

ECON Technologies, Inc.
P. O. Box 195356
Winter Springs, FL 32719
(407) 365-4209

Reviewed by Steven W. Disbrow

AutoArk (previously advertised as "AutoArc") is a file compression utility that allows you to compress files and then access them "on the fly" without having to manually uncompress them.

After you have compressed your files, you interact with them just as you always have, either double-clicking on them from the Finder or by selecting them from Standard File dialogs. *AutoArk* automatically uncompresses the files you select so that your application never even knows that they were compressed. You then work with these files just as you normally would. When you return to the Finder, *AutoArk* automatically recompresses the files again. Best of all, *AutoArk* compresses files to about half of their original size (on average), meaning that your hard drive can theoretically hold twice as much as it did before.

How You Work With It

To use *AutoArk*, you first install it on your boot disk and restart your computer.

When you reach the Finder, you will notice that there are several new items in the Extras menu: Compress, Encrypt, Expand, Archive Info, and Configure *AutoArk*. To use these items, you select icons and then pick the appropriate menu item.

So, for example, if you wanted to compress a folder and all of its contents, you would select that folder and then select the Compress item from the Extras menu. *AutoArk* will then display a dialog showing its progress as it compresses all of the items in the folder.

The Encrypt and Expand menu items work similarly, but they do different things. The *Encrypt* item allows you to password protect certain files when you compress them and the *Expand* item, as you might guess, allows you to manually uncompress items that you have previously compressed or encrypted with *AutoArk*.

The last two items, Archive Info and Configure *AutoArk*, allow you to get information about a compressed file (or files) and to configure the way *AutoArk* works. The *Archive Info* dialogs tell you the file name, what kind of file it is, how big it was originally, how big it is in its compressed form (and how much space you saved), as well as the creation and modification dates for the file. The *Configure AutoArk* item lets you specify (among other things) how files should be compressed, how much caution you want *AutoArk* to exercise as it compresses your files, and what key equivalents you want assigned to the *AutoArk* items in the Extras menu.

All of these menu items, and all of *AutoArk*'s configuration options, are described in the excellent *AutoArk* manual (which says "AutoArc" on the cover... you gotta love those last minute changes). As with their other documentation, *ECON* has done an excellent job of explaining everything you could want to know about this product, and even a few things you might not have realized that you needed to know. For example, the documentation points out that an *AutoArk* compressed file and a Universe Master (see review in this issue) backup file are basically the same type of file. In fact, if you have *AutoArk* installed, you can access the files in your Universe Master created backups as easily as you can access a file compressed with *AutoArk*. This is extremely slick and I probably would never have known about it if I had not taken the time to completely read the documentation. (Note however that this is a one way street—current versions of Universe Master can not read *AutoArk* files. This is fixed in version 1.0.2 and later of Universe Master.)

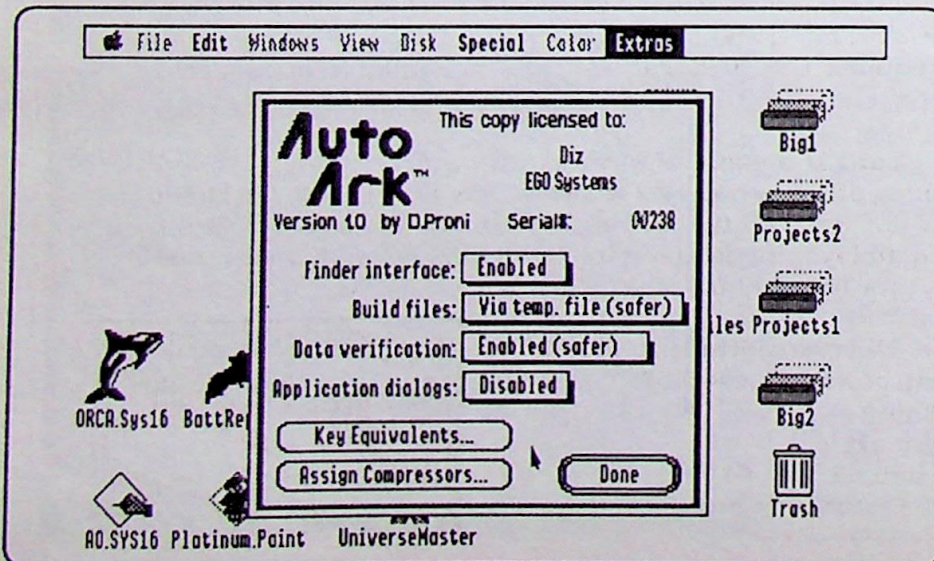
In addition to its interface with the Finder, *AutoArk* contains two New Desk Accessories (NDAs) that allow you to expand and compress files from within any IIGS desktop program. On the off-chance that you run into a program that isn't 100% compatible with *AutoArk* (or you use a program launcher other than the Finder), this can be extremely handy.

Speaking of compatibility, I have yet to find a program that *AutoArk* does not work with. However, it is extremely important to note that *AutoArk* only works with GS/OS-based applications. So, while you can compress and run your 8-bit applications from a GS/OS program launcher, once ProDOS 8 is active, you will *not* be able to get to any of your compressed files!

Problems? What Problems?

AutoArk sounds great, and it is. But, there are a few problems that you should know about...

First of all, if you are familiar with Macintosh software, you are probably thinking that this sounds just like *AutoDoubler* for the Macintosh. (And if you aren't familiar with Macintosh software, *AutoDoubler* is a control panel that compresses files in the background and then expands them "on the fly" when you try to access them.) Actually, the "Auto" in the name is the main thing



these programs have in common. The biggest difference is that while AutoDoubler works completely in the background, AutoArk requires you to *manually* compress the files you want compressed. While this does give you ultimate control of which files are compressed, it can be a tedious process. However, after your files are compressed, AutoArk will step in to uncompress and recompress the files as needed. (My final note on this subject is that AutoArk is actually more like the Macintosh program DiskDoubler [which is by the same people that make AutoDoubler] than it is like AutoDoubler.)

Speaking of recompressing, after your files have been uncompressed, the only way they will be *automatically* recompressed is when you restart the Finder. This is keen for all of us Finder-maniacs, but if you use another program launcher, like Autopilot or UtilityLaunch, you will have to use the AutoArk NDA to recompress your files. And if you use a text-based launcher like ProSel-16, recompressing (and compressing) your files will be even more of a problem. However, D. Proni, the programmer of AutoArk, tells me that the next release of AutoArk will overcome this problem by

letting you specify when and where you want files to be recompressed (for example, whenever you quit from one application to another). This will make AutoArk much more valuable to everyone that doesn't use the Finder as their main operating environment.

Speaking of uncompressing your files, another problem that AutoArk has is that if you decide to boot with no INITs or Desk Accessories (by holding down the shift key when you boot), you will have no way of getting to your compressed files! AutoArk should include a separate application program to allow you to uncompress your files, but it doesn't. In my opinion, this is a very serious oversight in an otherwise complete package. But, I was pleased to learn that ECON plans to address this problem in the near future by releasing a freeware application that can open AutoArk files. Of course, if you have Universe Master v1.0.2 or later, you can use that to open these files, but if you don't, you are out of luck until you reboot.

The final problem I have with AutoArk is that it can be *very* slow. For smaller files, AutoArk performs quite well, compressing your files in the blink of an

eye. However, for larger files, AutoArk seems to slow to a crawl. While it doesn't address this problem directly, the AutoArk manual does make the point that you probably shouldn't compress large files or files that you access every day.

So? Should You Buy It?

Good question. AutoArk is a really neat piece of software for your IIGS, but I don't think that it's for everyone. If you don't have a hard disk, you really don't need AutoArk. If you do have a hard disk, but not an accelerator, I would suggest that you take a long hard look at the size of the files you would want to compress and decide if the amount of disk space you will save is worth the time you will spend waiting on AutoArk.

However, if your hard disk is getting dangerously full, and you don't feel that any of the problems I've listed are too horrible (particularly the speed problem), I'd say that you should definitely get AutoArk. If you are a Universe Master user, I would also recommend AutoArk. The ability to open backup files as if they were ordinary documents is an amazingly convenient thing and makes the Universe Master/AutoArk combo well worth purchasing. **GS+**

Pegasoft

Software that Takes Flight!

IIGS Programmers: Are you tired of this?

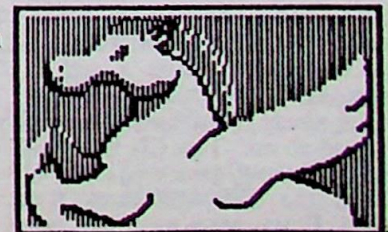
```
if x > y then WriteLn; else  
  ^illegalsymbol
```

Pegasus Pascal is a new language for the Apple IIGS, designed to reduce spurious syntax errors and to offer increased functionality over standard Pascal. It's no-nonsense syntax means you can stop fussing over details and get your programs up and running without losing readability or the error-checking of standard Pascal. Pegasus Pascal supports macros, conditional compiling, binary literals, ELSIFs, and even TYPE/VAR/CONST/LABEL statements in any order. Pegasus Pascal requires ORCA/Pascal 1.4, and is available at a special introductory price of \$40.00.

Be a Quester, too! Quest for the Hoard is a game of strategy and quick-thinking. An evil sorceress has snatched the treasures of the world and someone has to get them back! You race against the clock to uncover and de-spell the missing treasures hidden in her vaults. Features great stereo sound, a multiplayer mode and a high-score system with an attitude. Still \$15.00; updates to version 1.1 for only \$7.00.

Support low-cost, quality software! All orders include a subscription to the Pegasoft Newsletter. Canadian orders: we eat the PST & GST. Please send check or money order to:

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Jordan Station, Ontario, Canada
L0R 1S0.



1990 GEM Apple II CD-ROM

Retail price: \$119
ProDOS format CD-ROM
Not copy protected

Requires CD-ROM Drive

Wayzata Technology Inc.
P. O. Box 807
Grand Rapids, MN 55744
(800) 735-7321
(218) 326-0597

Reviewed by Bill Patterson

The title of this CD-ROM is an acronym for "Generous Efforts of Many," implying, of course, that this disk is filled with public domain software, freeware, and shareware (which it is). There are approximately 148 megabytes of software on this CD. How much of this will be of use to you will depend on what you use your IIGS for.

Pros

The GEM CD has files that you almost certainly have stashed away on 3.5-inch disks. Once you get this disk, you can go reformat those old archives and use the disks for new files, without fear of losing something valuable. I was able to free up four disks full of pictures because this CD had duplicates of them.

There are demos here of stuff I've never heard of. How about a IIGS-specific calendar printing program from MECC, or BeagleWrite GS, or Medley 2.0? If you ever wondered what these and many, many more were like, you can check them out here. As you might expect, though, these demos all have features disabled.

One of the most useful things I found on this disk was the **Fonts** folder. It has over 10 megabytes of fonts! Once you get this CD, you'll probably never need to look for a font again. Unless, of course, you bought Pointless and are a TrueType font junkie. None of these fonts are TrueType fonts, since this CD was made long before Pointless was available for the IIGS. Still, if you are a font junkie you should probably get this CD.

There is a **Games** folder loaded with 16 megabytes of entertainment software. All your old favorites are here. Stuff like: Grackel, Life, Backgammon, FillMaze, As the Link Turns parts I and II, Orbzone, Moria, Senseless Violence, Bounce It!, ninety-two different Mean 18 courses, and so on. This CD is a good way to get the old games you lost or never had the time (or money) to download. If you are a new IIGS user

looking for IIGS-specific entertainment, you will thrill to all the games available. Old-timers will still spend many hours perusing these classics.

Inside the **Sound** folder you will find the usual "I'll Be Back" and "The Force Is With You Luke," as well as a couple "Nya Nya Nya WubWubWubWubs" from the Three Stooges. The **Sound** folder accounts for only 4 megabytes, and though the sound quality is good, serious sound-bite junkies will probably already have most of these sounds. However, if you are just getting into using sound-bites on your IIGS, this is a good place to start.

The **Graphics** folder contains a slew of demos. There are a few of the early 3200-color pictures, but not many. Most pictures on the CD are 16-color ones that have been around for quite a while. There are lots of utilities both for the IIGS and the 8-bit Apple II machines, as well as lots of slideshow programs. Today, the ShowPic New Desk Accessory (NDA) blows away most everything else (including everything on the GEM CD), but if you want a program just to show pictures, you'll probably find a suitable one here. There are several animations both in 8-bit Double High-Res and 16-bit IIGS modes, and you'll find files for all three Print Shop programs. Most stuff in the graphics folder is for the IIGS, though, and new and old IIGS users will find plenty of programs to play with.

The GEM CD has approximately 75 NDAs, 50 Classic Desk Accessories, and 20 INITS, the majority of which are still very useful. You'll find clocks, screen savers, sound file players, window color changers, alarms, text viewers, picture viewers, and so on.

The GEM CD is formatted under ProDOS and is divided into 6 partitions, each less than 32 megabytes. This is great for someone who's running a BBS and wants an instant download area. It's also great for user groups to use. A group wouldn't even have to have a IIGS, just a ProDOS-compatible Apple II with a SCSI card and CD-ROM drive. And I would think it'd be easy for a user group to recoup the cost of the disk just from copying fees for the **Fonts** folder alone! The down side of the ProDOS format is that it chews up almost half your available drive locations (i.e. slot 6 drive 1, slot 6 drive 2, etc.). On the other hand, you can impress your friends with all those CD-ROM icons on your desktop ("Yeah man, I got five more CD drives in the closet!"). Being formatted in ProDOS allows you to run the 8-bit programs right from the CD. Some won't run, but most will, and this

saves time over copying everything to a hard disk.

Cons

Everything on this disk is at least two years out of date. The HyperStudio demo is version 2.1. There are GIF and IFF converters that evolved into SuperConvert. There are many file utilities on the GEM CD, but most of them can no longer be used with confidence. (I doubt anything on this CD can handle a file with a resource fork.) There are Splash screen editors, Startpic programs, and so on, almost all of which are incompatible with System 6. This is the price of progress, I guess. I expected lots of IIGS pictures, instead I got 34 megabytes of MacPaint files! There are also lots of BASIC programs and 8-bit stuff that I personally don't have much use for.

There are lots of templates, databases, and spreadsheets for both AppleWorks GS and the 8-bit AppleWorks Classic. This is a plus, but, unfortunately, all the databases I tried for AppleWorks GS were in the old (pre-AppleWorks GS v1.1) format. My AppleWorks GS tools disk crashed long ago, so now I have no way to convert them to AppleWorks GS v1.1 format. The spreadsheets work fine as-is. There are about 60 AppleWorks GS files totaling less than one megabyte. I can't talk much about the AppleWorks Classic templates since I don't have that program. But there are two directories, one named NAUG (488 files taking up over three megabytes), and one called TAWUG (818 files taking up over five megabytes) that are full of AppleWorks Classic files. If you still live for the old AppleWorks, this may be a good CD for you to get. By the way, AppleWorks GS will import all of these files, so they are not a total loss for AppleWorks GS users.

Such A Deal

As you can see, I had to try hard to come up with some problems with this CD. Most of my gripes are because of its age. I also feel \$119 might be a little steep for two-year old public domain and shareware stuff. But, if you are committed to keeping your IIGS until hell freezes over (like I am), or you just want an instant collection of Apple II software, then this CD is definitely worth it. You will never have to worry about losing any of these classic files again. I hope Wayzata comes up with another CD with all of the new stuff that has come out in the last two years. Ideally, it would have all the files on this CD, plus another partition (formatted as HFS) with just IIGS-specific files on it. After all, there's almost 500 megabytes of free space on this CD-ROM!
GS+

IIGS System Transport Case

Retail price: \$19.95

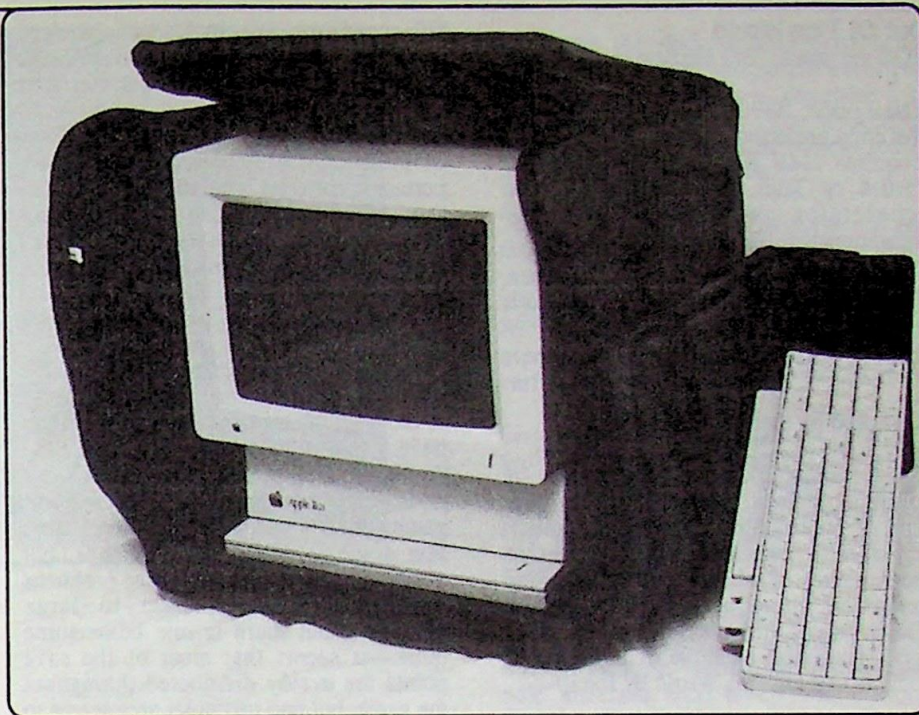
Alltech Electronics Co., Inc.
602 Garrison St.
Oceanside, CA 92054
(800) 995-7773 (Orders)
(619) 721-7733 (Tech support)

Reviewed by Robert A. Ribaric

Have you ever needed to transport your IIGS? For most, the answer would probably be—not that often. Maybe you're going to a user group meeting, or perhaps you're using Astronomer GS and need to be outside. The point is—these situations do come up, and your (very!) expensive hardware investment needs to be protected while you are moving it.

I personally found it necessary to take a IIGS home from my job here at the magazine. I was reviewing Out Of This World (see review elsewhere in this issue) and got hooked. I do not have a IIGS of my own, so I packed my work system up for further play over the weekend. First, I had to unplug everything—easy enough. Then, I simply put the whole thing straight in to the carrying case just like it sits on my desk, with the exception of the System Saver GS. Leaving it in place made the machine too tall to fit in the case, so I had to slide it in sideways in the back of the case. After a little practice, I was able to completely load and unload my system in just a few minutes!

This product is actually a carrying case for the IBM PS/2 Model 25 (and it says so on the front of the case), but it is very versatile and can be used to transport your IIGS. You can carry your CPU, hard drive (mine is an internal hard drive, so that was *really* no problem), keyboard, System Saver or Conserver, mouse, external floppy, joystick, and cables—all



at the same time. Some software and documentation can also be squeezed in.

The case itself is constructed of heavy duty nylon, and is very tough. There are many pockets for miscellaneous items, and a side pocket for the keyboard. Everything is secured through the use of zippers and velcro. The covering is well padded to guard against the usual bumps, too. Two side handles permit lifting, or optional wheels and a strap can be used to tow the whole thing behind you. The case opens up wide for different ways of loading and unloading. It also completely breaks down and folds up for storage.

While this is a tough case, it is very important to note that this is not a piece of carry-on luggage! It's really best suited for transporting your IIGS short distances by car. If you have to ship your computer

to a far-away place, you should definitely pack it in the boxes it originally came in!

The only thing I would have liked to see in this product would be a shoulder strap. The IIGS is a bulky machine and carrying the case by the handles makes it awkward to walk, and rough terrain prevents use of the wheels. You'd think all this hardware would add up to a lot of weight, and it is a bit heavy, but most folks should be able to easily carry everything by the handles. Still, a shoulder strap would provide better leverage and make it easier to move. Other than that, I really like this carrying case. I was very surprised at the low price, too. Other Apple II's and some Mac models can also be transported with this case. It's amazing that this product was actually produced by IBM. Little did they know how useful IIGS owners would find it.

GS+

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Out Of This World

IIGS version by Bill Heineman

Retail price: \$49.95

Not copy protected

Requires 1MB RAM, System Software v5.0.4 or later. A hard drive and accelerator card are strongly recommended.

Interplay Productions
3710 S. Susan, Suite 100
Santa Ana, CA 92704
(714) 549-2411

Reviewed by Robert A. Ribaric

There seems to be a new breed of computer games emerging. This new type of entertainment blends the movie screen with traditional action/adventure video games. Probably the first software to use this format was Defender Of The Crown from Cinemaware some five years ago. The latest example of this type of game is Out Of This World by Interplay.

In The Beginning . . .

The game begins with your character, the professor, heading off to work one evening. Little does he know that through the traditional "lightning strike premise," he would be in for a very rough night (someone should have reminded him not to use his computer during an electrical storm). He and his entire desk are zapped into another dimension! Once in his new environment, the professor must learn to cope with immediate dangers, the *most* immediate of which is drowning. After that, a series of poisonous slugs, ravenous beasts, and falling rocks conspire to take the professor's life. Unfortunately, surviving one threat only sets him up for another. Eventually, he encounters an alien race and is soon imprisoned with one of them. His fellow captive will prove very helpful, if not necessary, to our good doctor's survival. His only other aid is a laser gun that he pilfers off one of his captors. This amazing weapon can blast through just about anything, but there's a trade-off—it must be recharged somehow after a certain amount of use (which is much more realistic than most games). By creating shields, this pistol can be used for defensive purposes, as well. After his initial orientation, the doc must then navigate through a series of screens filled with catacombs, caves, streams, and buildings.

As I said earlier, this new world is loaded with nasty obstacles. The alien guards are "assisted" by tentacles, chompers, acid drips, and monsters whose only goal in life is to see you fail. There are about

fifteen different areas in this game, each of which is composed of several screens. Before you can proceed to another area (and save point), you usually have to perform a hidden task of some sort. Each of these areas/save points is assigned a certain code to be used after you "die" so you won't have to keep starting completely over. Most areas are shown from the usual third person, two-dimensional viewpoint. However, some interesting scenes are 3-D and either first or third person.

The Bad Points:

A program of this complexity is bound to have a few problems. The ever-present Apple II joystick calibration is always annoying to someone like me who plays games on other computers. There are a few graphics and control glitches, but most of those are minor. These problems are pretty much inherent to large programs, but there is one bothersome quirk—it seems that most of the save points are evenly distributed throughout the game, but one particular area seems to take forever to complete.

The single biggest problem with this game is that it is very slow. To help

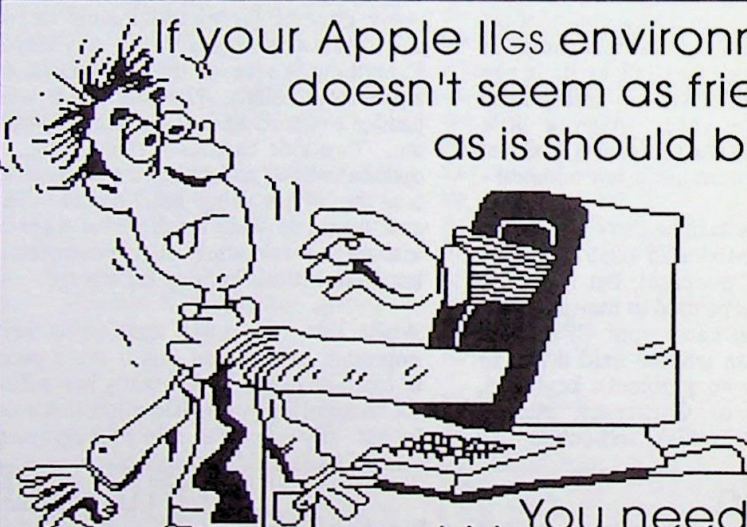
combat this problem, you are given several screen size options to choose from. The smaller the screen size you pick, the smaller the graphics are, and the faster the game runs. Unfortunately, as the screen sizes gets smaller, you lose detail in the graphics. Even more unfortunately, you really can't run the game in full-screen mode—even with an accelerator card, it's just way too slow. Out of the four screen dimensions provided, the fifty percent version is the only acceptable compromise between graphic detail and speed. I really think they should have just used this size for the game. But, I guess a choice is still better than being forced to play using screen dimensions you might not like.

Finally, the story's conclusion is very abrupt and very anticlimactic, leaving your character's situation unresolved, and the player somewhat disappointed.

The Good Points:

Fortunately, I have a whole lot more good things to say about Out Of This World than I do bad things. First of all, this game is just plain *fun!* A good feature is its lack of copy protection, which allows you to install it on your hard drive

If your Apple IIgs environment
doesn't seem as friendly
as it should be . . .

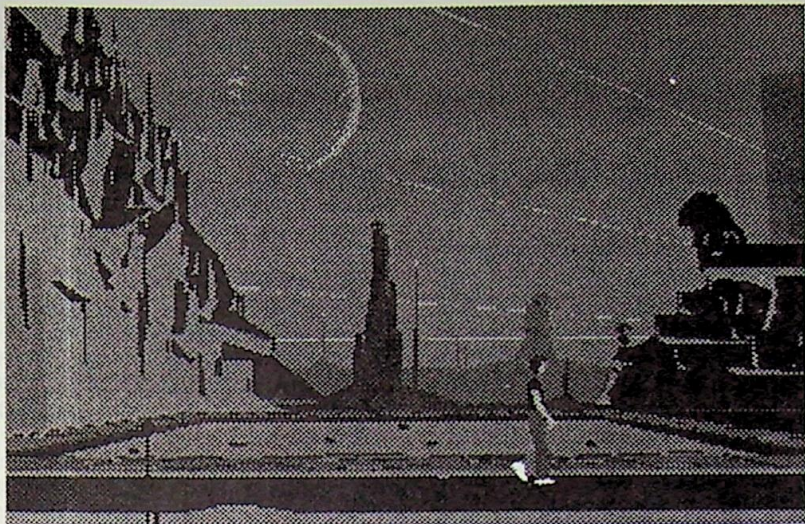


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(although the disk switching isn't too bad). The opening scenes are excellent. It's like watching a movie, complete with digitized sound effects. The screeching tires, laser blasts, and alien voices really add to the feel of the game.

The joystick control is fairly good, but there is a keyboard option for more precision. The screen-size setup menu allows you to custom-tailor the program for your machine. All these technical aspects are great, but like I said—the best part is the entertainment . . .

Out Of This World has fast-paced arcade sections, strategy parts, and places where you can just sit back and watch. There are some humorous scenes that serve to slow your panicked pace, as well. You *do* need to stay alert, however.

I also really like the way your weapon operates. This laser gun is more versatile than in average "shoot 'em up" games, with different blast levels. It is much more interesting, too, because the gun can run out of power or you can lose it entirely.

But don't worry, you aren't left defenseless. In some places, your alien friend makes sure you aren't always alone in your quest for freedom. The game never gets boring, and you're always wondering what is around the next corner.

In Conclusion...

Although it was originally written for the Super Nintendo, Bill Heineman has done an excellent job of converting it to the somewhat slower IIGS. Still, the speed is a problem when you want to use the best graphics display (full screen) for clarity. However, the smaller size is very playable, and the sights and sounds make you forget any other difficulties.

The game's complexity somewhat makes up for it being a little short for my taste. It took me about fifteen hours (and two calls to Bill for hints) to completely solve the adventure. After I knew all the tricks, I could navigate through the whole thing in about thirty minutes. Still, for the price, I expected a longer game. A lot of fun, Out Of This World is a unique concept and a nice change from the norm. I'm glad some companies refuse to ignore IIGS owners, and would like to thank Bill Heineman and Interplay personally for their support. This isn't the type of game that you can completely lose yourself in, but it is a pleasant diversion from reality, one you should definitely consider. **GS+**

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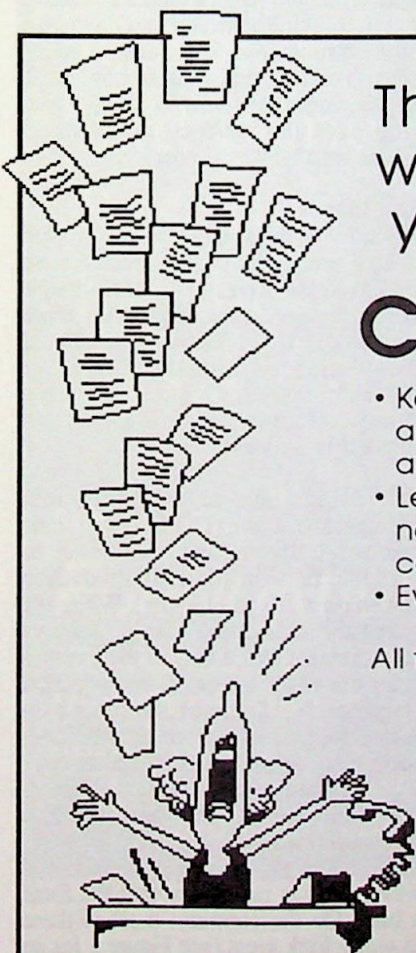
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TrueType Font Collection

Compiled by II Productive

Retail prices

TrueType Collection, Complete: \$85.00

TrueType Collection Part 1: \$50.00

TrueType Collection Part 2: \$50.00

Sample Collection (4 disks): \$30.00

Demo disk: \$10.00

Typical mail-order price: \$56 (entire collection)

Not copy protected

Requires Pointless

II Productive

1008 Ridgmont St
Round Rock, TX 78664
(512) 255-9235

Reviewed by Steven W. Disbrow

Heads up TrueType font junkies! If you can't get enough of that Pointless/TrueType technology, you will definitely be interested in this review. This product, known as the "TrueType Font Collection" (TTFC) is a collection of over 340 public domain TrueType fonts that have been converted from both Macintosh and Windows formats for you to use with Pointless on your IIGS.

That last sentence alone should be enough to get most font junkies drooling, but wait, there's more! You also get GS-ShrinkIt, the Apple II software for America Online, and HyperCard IIGS (minus the documentation of course!)

Why?

So, what do GS-ShrinkIt, America Online, and HyperCard IIGS have to do with a bunch of TrueType fonts?

Well, first of all, TrueType fonts are, generally speaking, huge. II Productive

has used GS-ShrinkIt to compress each and every one of the TrueType fonts in the collection. (So, you need to use GS-ShrinkIt to uncompress the files, which is why they included it.) It's a good thing that they compressed these files too. Compressed, the entire collection *still* takes up over 20 disks!

The America Online software is included because that's where most of these fonts seem to have come from, and it's a good place to get more TrueType fonts! (But then, so are GENie, Delphi, CompuServe and the InterNet.)

The final item, HyperCard IIGS, is included so that you can use the included HyperCard IIGS stack to look at samples of all of the fonts in the collection. Each and every font is shown in this stack, which saves you the trouble of uncompressing each font and then loading it with Pointless to see what it looks like. By perusing the stack, you can quickly and easily get an idea of exactly which fonts tickle your fancy.

A Great Idea

I love this idea. Font collections are big business in the Mac and IBM markets, and it's high time someone did something similar for the IIGS. Another very nice thing is that *all* of these fonts are public domain, so you can use them without worrying about shareware fees and without having to call up the vendor to buy a password to "unlock" more fonts. (A common practice in the Mac and Windows markets is to sell a CD-ROM full of fonts for a very low price. However, all but about 10 of the fonts on the CD are "locked." The user then has to call the vendor, with credit card in hand, and pay a separate fee to "unlock" additional fonts. A neat marketing idea, but also a real pain.)

Another good thing about the TTFC is the wide variety of fonts it includes. Regardless of what you are trying to write—love sonnets, flyers for a Star Trek™ convention, or even a ransom note—chances are you'll find a font that strikes you as "just right." The trick, of course, is finding that font among the twenty or so disks.

Which is why the use of a HyperCard IIGS stack to give the user a quick look at all of the included fonts is such a neat idea. While it isn't exactly the most exciting stack in the world, it does the job it's supposed to do with a minimum of effort on the part of the user. The font name is shown for each font, along with the number of the disk that the font can be found on, and a small sample of the font itself. Unfortunately, the stack only shows a very narrow subset of the characters in each font. For each font, only the characters that are needed to spell out its name are shown. For example, the card for the Dragonwick font only shows the letters "Dragonwick" in the Dragonwick font. It would be much nicer, and much more useful, if more of the font were shown.

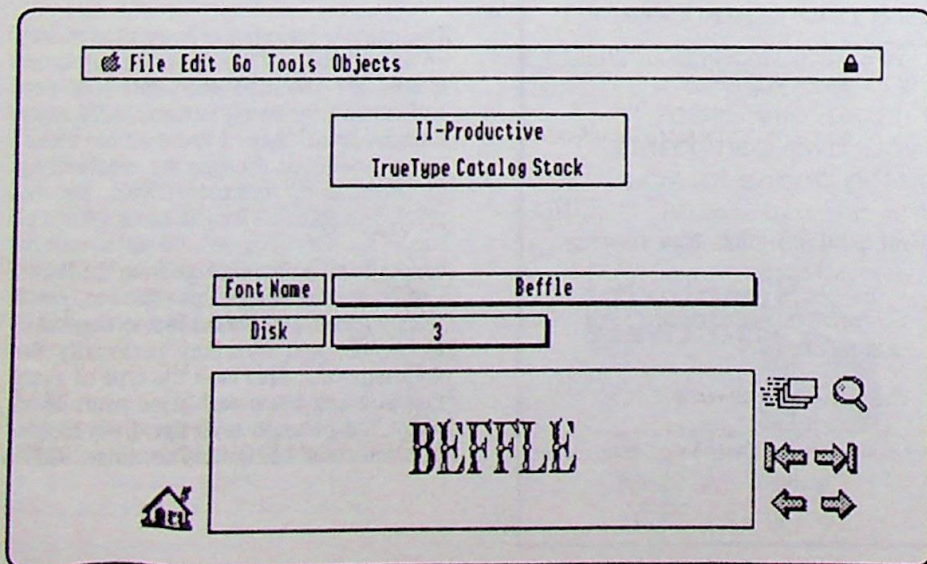
Of course, if you have a modem, you are probably thinking that you can download all of these fonts from your favorite online service. You can, but think of how much money it would cost you to do so. And do you have the patience to download over 340 fonts? I sure don't!

A Bad Idea

This is a *lot* of disks to juggle! Although I realize that not a lot of IIGS owners have either CD-ROM drives or 1.44MB drives, it would be very nice, and a lot more convenient, if II Productive also offered this collection on either CD-ROM or high-density diskettes. But, since that's not likely to happen any time soon, I can live with this problem.

Which brings me to my only real complaint about the TTFC: the fonts themselves. By limiting themselves to only public domain fonts, II Productive has taken on a mixed blessing. While it's nice that the user doesn't have to worry about shareware fees, many of the fonts (at least the ones I looked at) in the collection are incomplete. Some of the fonts only have the alphanumeric characters defined. Of the twenty or so fonts I looked at, only one or two had more than that defined, and I don't think any had all 256 characters defined.

However, this is not to say that the fonts *look* bad. On the contrary, most of these fonts really look great (see Figure 1 for an



example), it's just that there isn't much in them to look at.

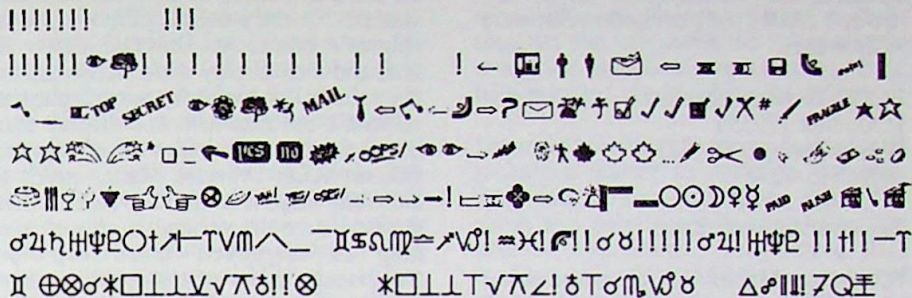
Like Fonts? Go For It!

If you love TrueType fonts, I would strongly suggest that you give this collection a try. While the subsets of the collection may be tempting, buying the TTFC through mail order brings the price down to where buying the entire set is a *much* more cost effective way to go (about 16¢ a font at the mail-order price shown above). Be warned, however, that many of the fonts are incomplete and may not have special characters that you need for your particular project.

While the TTFC does contain a *massive* number of fonts, it is also true that many of those fonts are incomplete. And, since the only way to see the whole font is to uncompress it and load it with Pointless, it could take quite a while to go through all the fonts to determine which ones have all of the characters you need. If you are a perfectionist, I would have to advise you

Figure 1
A Font From The TrueType Font Collection
Chosen Completely At Random
(And, of course, almost completely defined.)

IBDingbats3 10 point, Plain



to steer clear of this collection—at least until the HyperCard IIGS stack is modified to show more of each font. If the included stack showed more of each font, finding a complete (or mostly complete)

font wouldn't be such a hassle, but as it is, finding a complete font in this collection is purely a matter of luck. (As shown in Figure 1.)

GS+

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Foundation is useful for all Apple IIGS users, from experienced programmers who want to design their new programs to new users who want to change the colors of a window or better understand how bundles work under System 6.

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Universe Master

Programmed by D. Proni

Retail price: \$99
Typical mail-order price: \$79.00
Not copy protected
Requires one 3.5-inch disk drive, hard drive, 1.5MB RAM & System Software v6.0 or later

ECON Technologies, Inc.
P. O. Box 195356
Winter Springs, FL 32719
(407) 365-4209

Reviewed by Mark Raney

"Universe Master." An unassuming name for a new piece of Apple IIGS software, no? Well, if your Apple IIGS is your entire universe, perhaps Universe Master may be the only utility program you'll need.

Universe Master is a new disk management utility that includes features for file backup, disk and file repair, and disk cataloging. Future updates will also include a disk optimization feature. Universe Master is a solid contender in the integrated utility package market along with the Salvation-Supreme utilities from Vitesse, Inc. and ProSel-16 by Glen Bredon. All three programs share many similarities, but they accomplish the same tasks in different ways.

Universe Master is supplied on a single 3.5-inch disk. It is accompanied by a hefty, well-written manual. The manual even contains an appendix that offers suggestions for organizing your hard drive to minimize potential data loss. Like many of today's better IIGS utility programs, the Universe Master package includes Apple's Installer program.

Universe Master is a desktop-based program. Universe Master's main window is broken up into three areas: the online display region, the map view area, and the command buttons (see screen shot). The online display region shows the icons and names of all of the volumes that are currently online. Clicking on a volume's icon causes Universe Master to scan and then display a hierarchy map of the volume. A hierarchy map displays a volume's contents in a tree display that shows folders as branches off of the root volume. After Universe Master builds a hierarchy map, it is saved to disk so that the next time the volume is opened, the map is displayed more rapidly. (*Important!* If you are trying to recover a file that has been deleted, you should hold down the option key while selecting a volume. This will prevent Universe Master from writing the hierarchy map to disk and possibly overwriting the file you are trying to recover!) You can then scroll the map either vertically or horizontally to see folder items that are not contained within the display area.

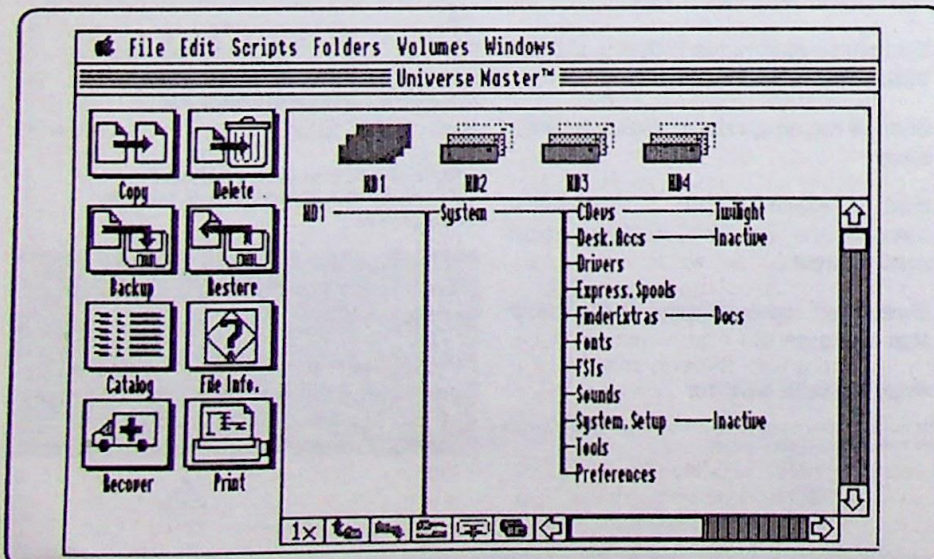
The Command Buttons

In addition to standard pull-down menus, Universe Master sports a series of on-screen buttons that initiate many of the program's main features. The Copy and Delete buttons allow users to copy and delete folders and the files that are contained in them. The Recover button allows you to recover files that have been previously deleted. After selecting the desired branch, the user presses a button to display a list of files that have been deleted. In addition to listing the file's file type, its status is also displayed. There are three possible deleted file status designations: Intact, Partially Intact, and Unrecoverable. Even though a file is listed as intact, the user cannot be guaranteed of the file's actual status until

after attempting its recovery. Recovered files can only be undeleted to another volume, as writing the file to the original volume may overwrite the file being recovered.

The Backup button allows users to select criteria for backing up specific files and then the generation of scripts that allow for the automation of the backup process. Selectable backup criteria include any or all of the following: files that have changed since the last backup, files that have not been backed up in a certain number of days, files that have increased in size by a user selectable amount or files that match a particular file type. After selecting backup criteria, the user can choose to create a duplicate backup script that is saved along with the data being backed up. This safety feature allows for the restoration of a branch even if the original script is damaged. Files being backed up can also be compressed so that the data takes up only an average of 50% of the disk space of the original files. AutoArk, also from the folks at ECON Technologies (see review in this issue), is a file compression utility that will allow direct access to Universe Master's compressed files. AutoArk comes to the IIGS in the form of a Permanent Initialization File. It allows for automatic compression and decompression of both applications and their data files. AutoArk shares similar compression routines with Universe Master that allows for complete compatibility between the two products. Backed up files can also be encrypted through the use of a password. After Universe Master creates a backup script, it can be carried out in one of three ways. It can be immediately executed, it can be selected via the Scripts pull-down menu, or best of all, by double-clicking on the script icon from the Finder. There is no longer any excuse for those people who find it difficult to perform regular backups, as nothing could be easier than executing a script by double-clicking on it from the Finder!

Universe Master approaches the backup process from a different angle than previously released utilities. Vitesse's backup program, Salvation-Backup, creates an image of the volume to be backed up and then allows the contents to be spread out over a series of 3.5-inch disks or a single high capacity volume. Universe Master addresses volume backups from a different angle. It backs up files using a *file mirroring* approach. File mirroring simply creates a new copy of the backed up files on another high capacity target volume. The advantage to this approach is that you have direct access to backed up files, unless you used



the compression option during the backup process, though even that won't be a hindrance if you have AutoArk. The drawback to this method is that you must have a large portion of your hard drive devoted strictly to backed up files. My 105MB hard drive is constantly full, although much of it holds applications I use quite infrequently. D. Proni, Universe Master's author, stated that the ability to backup a volume to multiple target disks, what he calls *Volume Spanning*, should be included in the v1.1 release of Universe Master.

The Restore button allows you to choose a script to be used to restore a branch of previously backed up files. Running the script reads the files from the volume with the backed up data and restores it to the volume branch where it initially resided. If you wish to restore the backed up files to a branch other than the original, you must use the Restore menu item.

The File Info button allows you to change the attributes of files that are contained in the chosen folder branch. The Catalog button allows users to display to the screen a list of selected folders and the files contained in them.

The Print button allows either a selected branch hierarchy or catalog to be printed. The printed hierarchy map is similar to Universe Master's main on-screen map display. The printed catalog is similar to the on-screen catalog generated by Universe Master's Catalog command button, although many of each file's attributes can be added to the printed catalog. Universe Master's printing function also allows for the saving of catalog templates that users use often, as well as selecting the font the catalog will be printed in.

Other Features...

Many of Universe Master's features are not accessible through the command buttons. Additional features that support data backup and restoration are available under the Scripts menu item. One of Universe Master's more powerful backup features is the ability to chain existing backup scripts together to streamline the backup procedure. For instance, after creating a script to back up my in-progress reviews and a script to back up my grade book data files, I can chain them together so that I can execute a single script from the Finder at the end of the day. In addition to being able to execute both the backup and restore functions from the Scripts menu, you can also edit existing scripts. The ability to edit existing scripts lets you restore

branches to destinations other than the original and also change a script's backup criteria.

The Folders menu allows you to create new folders, sort a folder's contents and edit the attributes of a folder's contents. Sorting the files in a folder is easy with Universe Master. Files can be sorted by name, kind, size, or date in either ascending or descending order. I only wish that files could be sorted manually. Sometimes I've had the need to have specific system files loaded first, and while this is not impossible with Universe Master, it can take some planning. Editing the contents of a folder is also easy using Universe Master. After selecting the target folder, a list of the folder's files is displayed. After scrolling to a specific file, thirteen different file attributes are displayed, such as file type, auxiliary type, access status, and creation and modification dates. After editing a file's attributes, clicking the Apply button makes the changes permanent.

The Volumes menu item allows you to carry out some of Universe Master's most powerful functions. In addition to basic functions such as erasing, formatting, verifying, and duplicating volumes; users can rebuild volumes, zero unused blocks, and validate a volume's file system. Rebuilding a volume allows users to repair seriously damaged volumes. The manual suggests using this function for three purposes only: to make a volume bootable, to repair the volume's header so that GS/OS will again recognize the volume, and to repair a corrupted root directory.

Universe Master also includes a block editor that can be used to edit individual bytes that are stored on a volume. It allows users to mark specific blocks that are then displayed in a Quick Jump menu. Selecting a marked block from the Quick Jump menu instantly loads that block for editing. To edit a byte, users simply click on the desired byte or a range of bytes and then enter the new values. Byte changes are stored in memory only, so to make changes permanent, users must select Save from the File menu.

Zeroing unused blocks writes zeros to all blocks that are not claimed by any file. The manual suggests performing this function as a part of routine maintenance for your hard drive. It makes rebuilding a volume or searching for orphaned files much easier.

A feature called Validate file system... allows you to check the soundness of a volume's folder and file structure. After

selecting a volume and starting the analysis, Universe Master checks the "logical integrity" of every folder and file and then reports any errors it finds. Each error is listed in a window, and you are given the option to repair any problems Universe Master finds. After repairing the reported errors, Universe Master politely suggests that you check the volume again to look for additional errors that may have been revealed after repairing the volume.

Universe Master v1.1, when released, will include a feature to optimize volumes. Any volume that undergoes many file saves and deletions will have files that become fragmented. Fragmented files load more slowly than files that are stored on volumes in contiguous blocks. An optimizer simply reads each file and then rewrites it to contiguous blocks for faster loading.

They're Off and Running...

How does Universe Master stack up against the other previously mentioned disk utility packages? First of all, there are some basic differences. Universe Master is desktop-based and is truly an integrated package. All of the features mentioned above are available from within a single program. The Salvation series of utilities includes most of the features included in Universe Master, but each utility is a stand-alone package. Salvation-Supreme also includes two utilities not included in Universe Master. Wings is a program launching utility that takes the place of Apple's Finder. In addition to multiple pages of programmable buttons, Wings includes a well thought out and easy to use set of file and volume utilities that mirror the functions of comparable items in Universe Master and the Finder. Wings also allows for the activation and deactivation of system files, such as desk accessories and drivers. Additionally, Wings includes a feature that allows users to manually sort a folder's contents, but does not include any predefined sort criteria. Both methods have their advantages and weaknesses. It's too bad neither utility includes both approaches to sorting a directory. Salvation-Supreme also includes Exorciser, a utility that checks volumes for viral infections. Luckily, most viruses belong to the MS-DOS and Macintosh worlds, so currently this utility is of limited value.

ProSel-16, a text-based integrated utility package by Glen Bredon, includes many of the same features shared by both the Salvation-Supreme utilities and Universe Master. Personally, I find ProSel-16's text interface far less intuitive to use. I've grown accustomed to standard Open File

dialogs for selecting volumes and files for manipulation. When I first used ProSel-16, soon after System Software v5.0 was released, I spent quite some time trying to figure out the way ProSel-16 identifies volumes with device numbers. Programs that follow Apple's desktop interface guidelines are simply easier to use. Even though I find ProSel-16's interface cumbersome to use, the actual execution of ProSel-16's utilities is excellent. Most features found in Universe Master are found in ProSel-16, you just have to know how to find them.

So, Now What?

Assuming that you don't own any of the utilities mentioned in this review, which one should you purchase? Since all three packages are in the same general dollar ballpark, money is not an issue. Ease of use is a serious concern for me when I evaluate any program.

Without a doubt, Universe Master is the easiest of the three utilities to use. The fact that Universe Master is both desktop-based and a true integrated disk utility package are two strong votes in its favor. Like Universe Master, the Salvation series is desktop-based, but users must hop from application to application to use all of its features. Perhaps someday Vitesse will integrate all of the Salvation-Supreme utilities into a single application. ProSel-16 comes in a distant third in ease of use. Once you've mastered ProSel-16's user interface, it holds its own in this category, but its learning curve is appreciably longer than Universe Master and the Salvation series utilities.

Also important when evaluating any program is the scope of its features. Again, Universe Master shines here. Universe Master simply includes more utilities than the Salvation series. Universe Master is currently missing its optimization routines, but all registered owners of v1.0.1 will receive a free update when v1.1 is released. ProSel-16 is equally as comprehensive in scope as Universe Master, but you have to know where to find specific utilities to use them.

All three software package's volume repair utilities seem to work as advertised, but readers should realize that not all damaged disks can be repaired. I encountered a disk with damaged data while preparing this review that none of the three utility packages could repair with the data intact. While the foregoing example was a worst case scenario, all three utilities were able to repair common problems like damaged volume bitmaps and bad media blocks.

Personally, I prefer Salvation-Deliverance's block editor over either Universe Master's or ProSel-16's. It includes powerful find and replace options that make disk sector editing a breeze. Finding specific bytes on a 3.5-inch disk with Universe Master is a laborious task, and just short of impossible on a high capacity volume. Perhaps Universe Master will include these features in a future version.

Of the three utility packages, Universe Master includes the most powerful backup function. Its scripting abilities give users far more options in selecting file backup criteria and the ability to execute scripts from the Finder simply by double-clicking is a real advantage for users who backup files on a regular basis. Neither Salvation-Bakkup or ProSel-16 allow direct access to backed up data, while Universe Master lets you directly open backed up documents from within an application. In addition, Universe Master is the only commercial backup utility that currently supports backup data compression. Using AutoArk with Universe Master allows users direct access to compressed backed up data.

At first I was somewhat dismayed that Universe Master doesn't currently allow data to be backed up to multiple target volumes. I was just too used to dumping the contents of a hard drive partition on to a series of 3.5-inch disks after several years of using first ProSel-16 and then Salvation-Bakkup. I had to clear a partition on my hard drive for storing backed up data. After backing up my boot volume and my main data volume (with compression) to a single partition on my hard drive, it was a simple matter to create a chained script to backup only those files that had changes since the last backup. I now backup my hard drive far more frequently than in the past. It is great to be able to execute a chained script and walk away from my IIGS while the backup takes place automatically. No more sitting in front of the computer stuffing 3.5-inch disks into the drives for long periods of time. For those of you who just can't let go of backing up to a series of floppy disks, v1.1 of Universe Master should include this option when it is released.

One last thing to consider before purchasing the disk utility program of your dreams is customer support. The folks at ECON Technologies are actively writing software for the Apple IIGS. D. Proni has stated that Universe Master v1.1, which will include several major enhancements, will be released sometime around the first of the year.

Vitesse has been developing for other computer platforms recently, so updates to System 6 friendly software have been slow in the making. Lowell Erbe, of Vitesse, has stated that updates to Salvation-Bakkup, Deliverance, and Renaissance are in the works and should be released sometime next year. The remaining modules of the Salvation series may be updated sometime in the future. Wings currently has serious problems dealing with HFS volumes, so hopefully Vitesse will decide that an update is in order.

ProSel-16 has been updated constantly over the four years I've owned the product. New versions have included many new features and enhancements. Users with access to the major online services can upgrade ProSel-16 simply by downloading an application that updates their existing copy of ProSel-16. I can only hope that someday Glen Bredon will rework ProSel-16 into a desktop-based application. The user interface is the main reason I've moved on to other disk management utilities.

Overall, I'd recommend Universe Master for anyone that wants a well implemented, tightly integrated, disk maintenance utility. Users can perform most disk maintenance functions quickly from a single application. The user interface is well designed and easy to use. Data loss may well be a thing of the past if you let Universe Master take control of your IIGS housekeeping chores! **GS+**

For information on where to get the other products mentioned in this review, check the "Product Information" department, elsewhere in this issue.

Review Updates

Desktop Enhancer v2.0

By Steven R. McQueen

Retail price: \$24.95

Not copy protected

Requires System Software v5.0.4 or later,
hard disk, 1MB RAM

Simplexity Software
1305 Chapman Ave., Ste. 302
Orange, CA 92668
(714) 283-3957

Reviewed by Steven W. Disbrow

Desktop Enhancer (originally reviewed in *GS+ V3.N4*) is a New Desk Accessory (NDA) that allows you to customize various features of your IIGS. Desktop Enhancer allows you to change your desktop pattern and the sounds that are played when certain system events occur. It also includes a screen saver and a very cool clock/alarm function.

So much for the recap, let's talk about what's changed, and what hasn't, since I originally reviewed Desktop Enhancer.

Screen Saver Changes

The screen saver portion of the Desktop Enhancer has received quite a few new features, the most important of which is the ability to blank the screen while in a ProDOS 8 application. This gives it a distinct advantage over the screen blanker in Signature GS, and puts it on an even footing with Twilight II. However, Twilight II only blanks the screen in 8-bit applications, while Desktop Enhancer actually plays an animation! While I personally never use 8-bit applications

(except to test stuff like this), this is a definite plus for the Desktop Enhancer.

Of course, one place where Desktop Enhancer lags behind Twilight II is in the number of blanker modules available for it. Desktop Enhancer v2.0 takes a big step towards correcting that by providing complete specifications on how to write additional blanker modules. All Simplexity Software needs now is for someone to actually write some additional blankers!

Sound Changes

The biggest problem I had with the original Desktop Enhancer sound module was that it only allowed you to set up *three* custom sounds. Version 2.0 allows you to specify up to 26 different events to play custom sounds for. Quite an improvement!

Another improvement, and a definite advantage over the competition, is the fact that Desktop Enhancer allows you to use either rSound resources (like the Sound control panel that comes with System 6) or HyperStudio sound files (like Signature GS). Being able to automatically use these two common sound file formats is a very nice feature.

The only problem with the sound module is that sometimes it doesn't actually play the sounds I've requested when I expect it to. I'm not certain, but after investigating with GSbug, I think this is because it's not actually working with the SysBeep2 tool call to determine when to play its sounds. Apparently, the Desktop Enhancer uses a custom means of figuring

out when to play a sound. This is almost certainly necessary to ensure compatibility with System Software v5.0.4 (SysBeep2 is only available in System 6), but it does lead to some weird behavior.

Palette Changer Changes

More big changes here as well. In addition to its old "pick two colors to mix" method of changing the desktop pattern, Desktop Enhancer v2.0 now includes an honest-to-goodness pattern editor and the ability to use either a pattern or a picture file for your desktop.

The pattern editor is fairly standard: an 8x8 grid that you draw a pattern in. As you draw your pattern it is shown in the pattern editor window, so you can get an idea of what your desktop will actually look like when you use the pattern. While this instant feedback is a good idea, having the pattern editor window redraw itself every time you click the mouse quickly becomes very annoying.

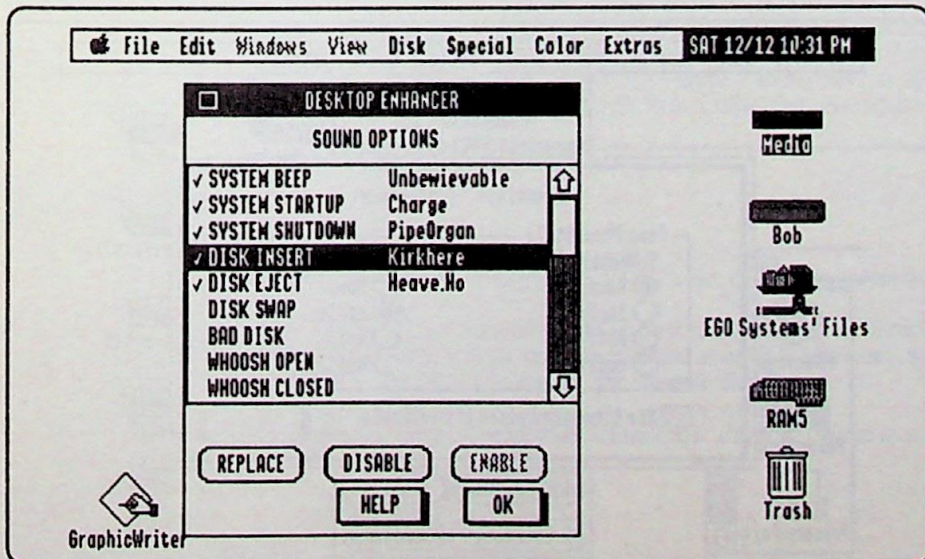
The ability to place a picture on the desktop is not new—several shareware products let you do this—but I've never seen one that lets you pick separate pictures for both 640 and 320 modes. In other words, you can have one picture, which was drawn to look good in 640 mode, displayed whenever you are in a 640-mode program, and another, completely different picture displayed whenever you are in a 320-mode application. Once again, this is a very smart feature that Signature GS simply doesn't have.

Clock Changes

The clock module is basically the same as in previous versions. You can still display the clock in different locations in both 320- and 640-mode programs, and you can still set three separate alarms, each with a different custom sound and a different custom message. My only complaint with the original clock module was that I could not turn off the seconds display, but that's been fixed with the addition of several new formats in which to display the time and date. Again, these are features that Signature GS simply doesn't have.

Problems

Unfortunately, I have had complaints from several readers that Desktop Enhancer has been somewhat less than well-behaved on their computers. Personally, however, the only problem I've ever had with Desktop



Enhancer is that it seems to make my system hang up sometimes when I am in a Standard File dialog. Other than that, I've not personally had any major problems. It is important to note, however, that I've *never* had a problem with Signature GS.

A Strong Challenger

Feature-wise, Desktop Enhancer v2.0 is a very strong challenger to Signature GS. The improvements in the screen blanker, sound, and palette modules give it

capabilities that Signature GS simply does not have. However, the complaints that I've gotten from readers, and the fact that Desktop Enhancer sometimes hangs up my computer, keeps me from giving it a whole-hearted recommendation. One thing to consider however, is that Simplicity Software is, in my experience, very interested in correcting any problems that are found in the Desktop Enhancer.

My recommendation is that if you already have Signature GS, stick with it.

However, if you are in the market for this type of product, the Desktop Enhancer will give you more features than Signature GS for slightly less money. Just be sure to check with Simplicity Software first to see if there are any known compatibility problems that may keep the Desktop Enhancer from working with your system. GS+

Pointless v2.0

By Alan Bird

Upgrade To Version 2.0: \$19.95

Retail price: \$69

Typical mail-order price: \$49

WestCode Software, Inc.
15050 Avenue of Science, Suite 112
San Diego, CA 92128-9720
(800) 488-4250
(619) 487-9200

Reviewed by Steven W. Disbrow

Pointless. What Is It?

For those of you that don't know, *Pointless* is a control panel that gives your IIGS access to the large library of TrueType fonts that are available for the Macintosh. Unlike standard bitmapped fonts, TrueType fonts are outline fonts that can be scaled to any point size that you request (up to 255 points on the IIGS). (For definitions of these terms, see the Glossary file on your GS+ Disk)

What's New In Version Two?

If you read my review of *Pointless* v1.0 (GS+ V3.N4), you may remember that my number one criticism of it was the fact that it was so slow when rendering fonts. Well, *Pointless* v2.0 completely does away with that problem. In fact, *Pointless* v2.0 is so much faster than the original that I've actually considered removing *all* of my bitmapped fonts from my system (except, of course, for the system font, Shaston [which is actually in a file called *Fast.Font* on disk])!

How Does It Do That?

Well, to understand why *Pointless* v2.0 is so much faster than the original, we need to look at how the original generated fonts. When you requested a font from the original *Pointless*, it first looked on disk to see if a bitmap for that font and size was available. If it was, *Pointless* loaded that bitmap and used it instead of bothering to generate a new font from the TrueType font. If a bitmap did not exist, however, *Pointless* would then load in the

TrueType font and use it to generate the font "on the fly." The problem with this was that *Pointless* was usually generating the *entire* font—all 256 characters of it. This takes time, and lots of it.

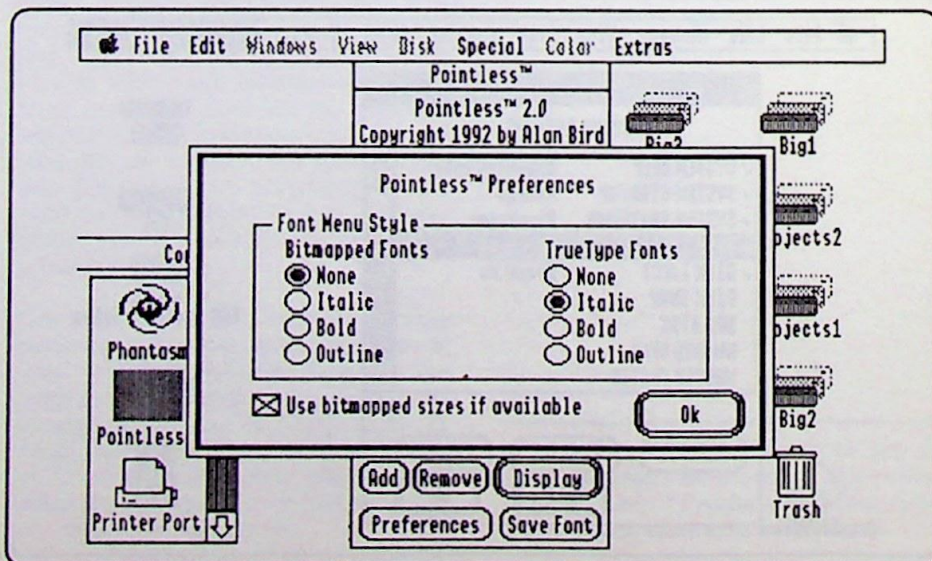
Of course, *Pointless* v1.0 had two ways to partially work around this problem, you could save a bitmap of a particular font size out to disk, or you could use the "Configure" option to tell *Pointless* exactly which characters to generate for a particular font. However, saving out bitmaps eats up *lots* of disk space and fiddling with the *Pointless* Configure dialog was something that you had to do for *every* font that you installed!

There had to be a better way, and in fact, there was. It had been in use on the Macintosh from the day TrueType fonts were first introduced. (And I've often wondered why *Pointless* didn't do it this way from the beginning. At any rate . . .) That way is to generate only the characters that you type, *as you type them!* So for instance, when I started this review, I did not have any characters available for Times (the body text) or **Helvetica bold** (the title text), as I typed each character, *Pointless* generated it and immediately displayed it on my screen. This is *much*

faster than the way things used to be! And, after a character is generated, *Pointless* does not have to generate it again, saving even more time. For me, this has almost completely removed my need for bitmapped fonts, thus freeing up about a megabyte of space on my hard disk. Not only that, but I've been using it on an unaccelerated IIGS, and I must say that the performance is actually very good.

Other Neat New Stuff

In addition to the wonderful speed increase, *Pointless* v2.0 has several other neat new features. Chief among these is the fact that the Configure dialog is gone! In its place is a new "Display" dialog that allows you to view a subset of the characters in a font (the old "The Quick Brown Fox Jumped Over The Lazy Dog" subset) at three point sizes, or you can see the entire character set at a single point size. The best part about this dialog is that if you click the mouse on one of the characters, *Pointless* will show you the keystroke equivalent for that character! This is very handy, but you still have to open up *Pointless* to get to it. It would be nice if, under System 6, you could double-click on a TrueType font and get the "... Quick Brown Fox ..." display



in its own window. That would make it *much* easier to peruse new TrueType fonts!

There is also a new "Preferences" dialog that lets you specify whether or not Pointless should even bother looking for bitmapped fonts, and a really neat little feature that lets you easily distinguish your bitmapped fonts from your TrueType fonts in an applications font menu. For example, you could have your bitmapped fonts show up in the font menu with their names in **boldface** and your TrueType fonts show up with their names in *italic*. However, this only works in *applications*. New Desk Accessory editors (like EGOed) can't take advantage of this feature (this is because they can't use the FixFontMenu tool call, which is what applications use to build their font menus). It would be nice if a future version of Pointless gave non-applications (and applications that don't use FixFontMenu) some way to differentiate between bitmapped and TrueType fonts... I know that I would use it in EGOed!

Of course, Pointless v2.0 isn't completely different from v1.0. You can still save out a bitmapped font to disk for use with your 8-bit programs that can use IIGS fonts (like Publish-It!), and you can still keep your TrueType fonts on a disk other than your boot disk.

And A Problem Or Two

Unfortunately, all is not beer and skittles with Pointless v2.0. As I reported in my original review, at small point sizes (10 points and smaller), some text styles (most notably **boldface**) simply don't show up on screen. While this does not affect your printed output, it can be very annoying and it's still a problem in Pointless v2.0.

Beyond that leftover problem, there is one major problem in Pointless v2.0. Namely, Pointless v2.0 has a tendency to eat up large quantities of memory. For

example, while editing this review, which isn't that large and doesn't use that many fonts, my editing keystrokes began to take longer and longer to execute. Simply typing a single character was taking upwards of 10 seconds! I went to the control panel to check how much memory I had available, and found that I only had 37K free! Some investigation with Nifty List soon revealed that Pointless was taking up almost 1.5MB of my RAM!

So, I called WestCode and was told that they knew about the problem and it had been fixed in Pointless v2.0.1. (Which is the version that is shipping now.) Unfortunately, I upgraded too quickly and had gotten a copy of v2.0. Even more unfortunately, I was not able to get a copy of Pointless v2.0.1 before we went to press, so I can't personally confirm that this problem has been fixed. (But I should be able to slip something about it into the **a.Read.Me** file on the **GS+** Disk, so be sure to check that.) However, the WestCode representative assured me that the problem was fixed and that anyone with Pointless v2.0 will be automatically updated to v2.0.1. If you were one of the first to update to Pointless v2.0, check the version. If you have v2.0, my advice is don't wait, call WestCode and ask them to send out the fix immediately.

The only other thing I have to mention is that if your primary printer is a PostScript printer, you should think long and hard before updating to or purchasing Pointless v2.0. Why? Well, if you have read our "TrueType On A LaserWriter" article (**GS+ V3.N5**), you know that with Pointless v1.0, it is possible to trick the LaserWriter driver into downloading a large bitmap of a TrueType font to a LaserWriter. The LaserWriter will then scale-down this large bitmap to give a high-quality rendition of a smaller point size of the same font. (For a more detailed explanation of this little trick, please refer to the aforementioned article. For an example what you can do with this trick, check out Figure 1 in my review of the TrueType Font Collection, elsewhere

in this issue.) You can still do this trick with Pointless v2.0, but it requires a bit more work. First, you *must* generate a large-size bitmap for the TrueType font you want to use in your document, and you must set the Pointless preference "Use bitmapped sizes if available" to true. Then, you must reboot (so that all of these changes can be recognized by Pointless) before you try to print your document.

This extra bit of work isn't all that bad, but if you *don't* do it, you won't get anything out of your LaserWriter except a nice blank spot (or spots) where you were expecting your TrueType fonts to be. I've spoken with WestCode about this problem, and they said that this extra work required to get Pointless to work with a LaserWriter was a direct result of the different font-rendering method that gives Pointless v2.0 its speed increase. Of course, if you don't use a LaserWriter or other PostScript printer, you won't have any of these problems and you will get amazingly great output.

The End . . .

All in all, Pointless v2.0 is an excellent update to an already great program. If you don't use a PostScript printer, I would suggest that you put down this magazine and order the update right now! (Make sure you'll be getting v2.0.1!) If you do have a PostScript printer and use it for most of your output, I recommend that you read the article I mentioned earlier to see if you want to be bothered with all of the extra work required to use Pointless with your printer.

Finally, I'm even going to recommend Pointless v2.0.1 (note the ".01" at the end!) to people without an accelerator—something that I simply could not do for version 1.0! Congratulations to Mr. Bird for a job even more well done! **GS+**

Errata

In the documentation for the Miscellaneous Library (**GS+ V4.N1**), the call `RemoveMemRec` should actually be called `DeleteMemRec`.

In the "Casual 6" article in **GS+ V3.N5**, in the discussion of how to install System 6 on a Vulcan hard disk (under the subheading "The Vulcan Thing"), the file `SCSIHD.Driver` was mistakenly referred to as `SCSI.Driver`. So, the sentence in question should read, "Next, trash the file `SCSIHD.Driver` from your backup copy of the `:Install` disk."

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

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The Apple Catalog

With the announcement of its Performa computers, Apple has finally gotten serious about making inroads into the home computing market. They also ticked off a lot of their older dealers by selling the Performas through mass-market outlets, bundling them with third-party software, and pricing them low. In another move that's sure to tick off someone else, Apple has begun selling its hardware and software (and some third-party stuff) via direct mail order—something that Apple resellers are not (as yet) allowed to do. Apple is even throwing in free next-day delivery on most items! Before you order, though, you need to realize that you'll be paying full retail price and, since Apple has offices in all 50 states, you'll be paying sales tax too.

To kick off this new marketing strategy, Apple has been mailing *The Apple Catalog* to user groups. As you might expect, it's basically page after page of Macintosh systems and peripherals (although, not every Macintosh system is presented). What you may not expect are the three pages of Apple II peripherals and software found in the back of the catalog. However, actual Apple II computers are conspicuously missing from this catalog.

While this may sound somewhat less than wonderful for Apple II owners, I also need to note that in addition to hardware and software, Apple is also selling manuals for almost all of their products (Macintosh and Apple II, old and new alike) through this service. You should call the number below to check on the availability of a particular manual.

To get your own copy of the *Apple Catalog*, call 1-800-795-1000, 24 hours a day, 7 days a week.

Hard Pressed For Space

In last issue's "Rumors, Wishes & Blatant Lies," we reported that WestCode Software was reported to be working on a new data compression utility similar to AutoArk by ECON Technologies. Well, it's true! Now, rather than take a lot of space telling you what Hardpressed does, I'll just refer you to this issue's review of AutoArk for a detailed explanation. When you get back, I'll point out the apparent differences between Hardpressed and AutoArk.

Welcome back! Anyway, according to the press release for Hardpressed, it will be a

control panel/INIT combination as opposed to AutoArk's INIT/Finder Extension/New Desk Accessory arrangement. Other than that, they seem to be identical... at least from what I can gather from reading the press release.

Of course, when Hardpressed finally hits the streets (remember all the delays that plagued Pointless?), we'll have a comparative review between it and AutoArk. Until then, you'll have to contact WestCode for more information.

WestCode Software, Inc.
15050 Avenue of Science, Suite 112
San Diego, CA 92128
(800) 448-4250
(619) 487-9200

Get Lively!

If you have not heard by now, and even if you have, Quality Computers is kicking off 1993 with a new Apple II publication, *II Alive!* According to the latest issue of *Enhance* (the Quality Computers catalog publication), *II Alive* will be "All Apple II. No Compromise." Sounds good to me!

II Alive will be published bi-monthly and will cost \$19 for a one year subscription (6-issues). (Canada/Mexico subscriptions will be \$30 a year. Foreign Surface subscriptions will be \$40 a year. Foreign Air subscriptions will be \$50 a year.)

For more information on *II Alive*, or to sign up for a subscription (the first issue will be published in February of 1993), contact:

Quality Computers
II Alive Subscription
P. O. Box 665
St. Clair Shores, MI 48080
(800) 777-3642

Passport House

I still haven't figured out why they picked this name, but the *Passport House Letter* is a new Apple II newsletter to be published by Passport House publishing. According to the information I've seen, it will be a monthly Apple II specific publication, 12 pages in length and similar in format to *A2-Central*. About the only other thing I know about this one is that the first issue should be available now. Unfortunately, I've yet to see a phone number in any of the information I've seen from Passport House, so I don't have any other information on them. For more information, contact:

Passport House
P. O. Box 145
Miles City, MT 59301-0145

Double Bill Burger

On November 2, 1992, Mr. and Mrs. Bill Heineman were proud to announce the release of their second wet-ware package, William Jeffery Heineman. Weighing in at 8 pounds, 4 ounces, and measuring 21 and one-quarter inches, young Master Burger is the second cooperative venture between Mr. and Mrs. Heineman. The first was Cynthia E. Heineman, who is said to be looking forward to putting her new brother through a lengthy period of vigorous beta-testing. Congratulations to the entire Heineman development team!

Send 'em In!

If you have a new IIGS-specific product that you want to get the word out about, send us your press release and I'll let our readers know about it here. You can FAX your press releases to us at (615) 843-3986 or send them to:

GS+ What's New?
P. O. Box 15366
Chattanooga, TN 37415-0366

GS+

Moving?

Well, don't forget to tell us! The Post Office does not normally forward Third-Class mail (they simply destroy it!), and we can't afford to replace magazines that were lost because a subscriber forgot to send us a change of address! If you miss an issue, we will extend your subscription, but you will have to buy the missed issue as a back issue! So, to avoid this hassle, send us a change of address as soon as you know your new address! Simply remove your mailing label from a previous issue of GS+ Magazine, affix it to a change of address form (available at your local Post Office), fill in your new address, and send it to us at:

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

While I was at the Apple EXPO East in October, Marc Wolfram from Lunar Productions came up and told me that he had been copying Foundation disks for customers with Replicator, and that Replicator was copying out bogus disk images. (I subsequently complained that Foundation hung my system when I chose the "New" menu item, and we generally had a great time exchanging bug reports and trying to track down the causes on each others' machines. You might not believe it, but debugging stuff is actually a lot of fun! Unless the bug is obnoxious and it's been bugging you for too many hours and there is no cause in sight... but I digress.) As it turned out, Marc's problem was that Replicator was reading in a corrupted document and then duplicating from a disk image that was ten bytes long instead of 800K! That's not very good. Marc also told me that when he originally saved the Replicator document, he saved it to a disk that didn't have enough free space, so he had to save it elsewhere. That was the key to the source of the problem. When I got back to work, I broke out the Replicator source code (which I thought I wouldn't have to look at again for a looong time) and, sure enough, Replicator was doing a very naughty thing when an error occurs while trying to save out the disk image. Version 1.3.1 of Replicator fixes this problem.

The Fix

Replicator was calling `DisposeHandle` on the disk image handle after it called

`AddResource`. This little nasty snuck its way in while I was adding support code for compression, even though I still haven't gotten around to actually writing the code that will compress a disk image. What was *supposed* to happen was that if `AddResource` failed, then the handle to the compressed data was to be disposed of. That got coded wrong into being if `AddResource` failed, dispose of the disk image handle! No, no, no. That's just plain wrong. Boy, you should have seen the look on my face when I saw that statement in my editor. Replicator does things correctly now... and that's the only change that's been made between version 1.3 and 1.3.1.

You might also like to know that the Replicator documentation on your **GS+**

Disk is now in Teach format instead of the plain ASCII Text format it's been previously. (And my re-editing of the Replicator documentation is the sole reason that EGOed has undo in it!) So there's no reason why you shouldn't go out there right now and read the documentation if you haven't already.

Happy Replicating!

Yet again, I'll go out on a limb say that Replicator has reached a "final state." Of course, if you happen to find a bug, as Marc did, this is subject to change. But, if you do find a bug, please fill out the problem form on your **GS+** Disk and send it in so that we can grind them into dust (the bugs that is, not the problem forms). **GS+**

What Is Replicator?

Replicator is a IIGS-specific, desktop-based disk duplicator. Unlike other IIGS disk duplication programs, Replicator will work with any GS/OS disk and any device supported by GS/OS. Replicator will even work with your old UniDisk 3.5 drives, and it's great for copying HFS disks!

*For complete documentation on how to use Replicator, be sure to read the file **Replicator.Docs** which is on your **GS+** Disk in the **Documentation** folder.*

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If you have any comments, good or bad, on the advertisers in this issue of **GS+** Magazine, we want to hear them! Send your comments to

GS+ Magazine
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Product Information

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(218) 326-0597

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(See review in this issue)
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602 Garrison St.
Oceanside, CA 92054
(800) 995-7773 (Orders)
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The Apple Catalog
One Apple Plaza
P.O. Box 9001
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(800) 795-1000

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(See review in this issue)
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If you need to ship your ad to us using a service other than the U.S. Postal Service, please call to make arrangements.
If you wish to place an ad for a product we have not reviewed, we request that you include a review copy with your ad.

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GS+ Magazine is published bimonthly and sold for \$3.00 an issue for the magazine only, and \$8.00 an issue for the magazine + disk. But, if you sign up for a 1-year subscription (six issues) or a 1/2-year subscription (three issues), you can save 11-25%! To sign up, send this completed form (or a photocopy) along with a check or money order (payable to "EGO Systems"), or your credit card number, to:

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Contact: Magical Software
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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 4, Number 3) of **GS+** is January 15, 1993. Simply fill out a photocopy of the coupon below; or 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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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.)

Bitmapped Font *

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

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.

CD-ROM

"CD-ROM" stands for "Compact Disk-Read Only Memory." 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 (like an encyclopedia).

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.

CPU *

"CPU" stands for "Central Processing Unit." The Central Processing Unit is the computer chip that acts as the "brains" in a computer. In the IIGS, the CPU is a W65C816, which was designed by Dr. William Mensch, Jr. at The Western Design Center, Inc. (The term "CPU" is also sometimes used to refer to the box that actually holds the CPU chip.)

DMA

"DMA" stands for "Direct Memory Access." This is the process where information is moved from a peripheral device (like a hard disk) directly into main memory. Normally, information moves from a peripheral, into the Central Processing Unit (CPU) and then into main memory. Using DMA cuts out the middle-man (the CPU), and can increase system efficiency dramatically.

Driver

A driver is a piece of software (known generically as a "System Extension" on the IIGS) that allows the system to "talk" to a particular piece of hardware.

Font *

A given combination of typeface design, weight, size and style.

Font Family *

All instances of a given typeface design (for example, the "Times" family includes Times, Times Bold, Times Italic, etc.)

Icon

An icon is a graphic representation of something. On the IIGS, icons are used to represent disks, applications, data files, folders, and other "items" that you work with while using your computer.

Installer *

The Installer is a program that automates the process of copying files. It is

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

Outline Font *

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

Random Access Memory (RAM) *

Random Access Memory is the memory that holds the programs you execute on your IIGS. RAM holds information until the power is turned off. As a general rule of thumb, the more RAM you have, the better.

Read Only Memory (ROM) *

Read Only Memory is similar to RAM except that the information that is in ROM can not be erased—even if you turn off your computer, the information in ROM will remain intact. On the IIGS, ROM is used to store parts of the operating system and the Toolbox. At this point in time, there are two common IIGS ROM versions, ROM 01 and ROM 03. You can tell which ROM version you have by looking at the bottom of the screen when you first turn on your IIGS.

Self-Extracting Archive (SEA) *

A "self-extracting" archive is a program that contains an archive. This program knows how to extract the contents of the archive attached to it. From the Finder, a self-extracting archive would show up on the desktop as an application program. You would simply double-click on it and it would launch, giving you an opportunity to tell it where to place the files after they are extracted from the archive.

TrueType *

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

Typeface *

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