



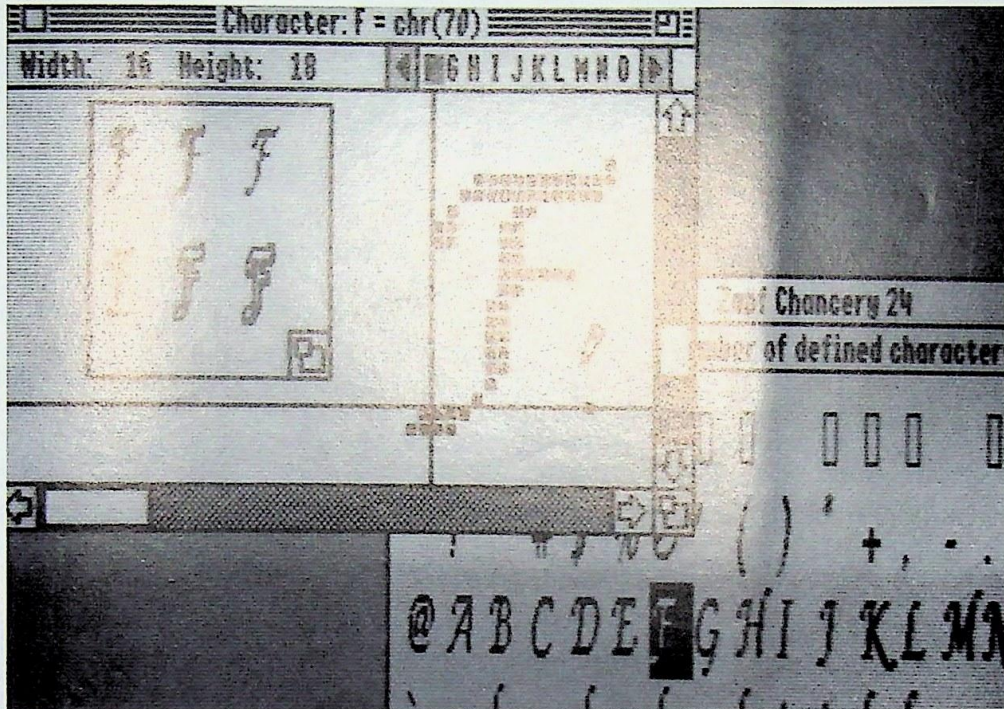
TM

November
December
1991

Volume 3
Number 2

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

How Fonts Work



Featuring

An Introduction To 3-D Graphics
How To Buy Used IIGS Equipment
Working With The Toolbox Part 5

Reviews

Octo-RAM Memory Board • DataLink II EXPRESS
Talking First Words • Talking Greek Mythology
CosmoCADE • Star Trek: Classic

Programs

AutoSave • EGOed v1.37 • NoDOS v1.7
RAM Namer v2.0

Plus

The Traditional Assortment Of Neat IIGS Stuff!

Writer's Block

By Steven W. Disbrow

1-800-662-3634

I'm extremely happy that the first bit of news I have for you this issue is that we now have a *toll-free* order line! (That's the number up there at the top of this paragraph, but for those of you who insist on completeness; the number is 1-800-662-3634). As I said, this new line is for *orders only*! This includes requesting subscription information, new subscriptions, renewals, back-issues, and T-Shirt orders. When you call, please know what it is you want to order and have your customer number (your customer number is that ten-character string that comes after your name on your mailing label) and credit card information ready to go. If you need technical support or you just want to shoot the breeze, *please* use our regular number: 1-615-870-4960.

8/16-Central

If you have not heard yet, Resource-Central has discontinued publication of *8/16-Central*, and *GS+* Magazine has committed to fulfill the subscriptions of *8/16-Central's* remaining subscribers. So, I just wanted to take a line or two to welcome all of you from *8/16-Central* to *GS+* Magazine! If you have *any* questions or comments about your new *GS+* subscription, feel free to drop us a line (the *GS+* Feedback form is a good way to do this) or to give us a call at 1-615-870-4960. We are here Monday through Friday from 9 a.m. to 6 p.m. Eastern Time.

If you were a subscriber to both *8/16-Central* and *GS+* Magazine, your remaining issues of *8/16-Central* have been added on to the end of your *GS+* Magazine subscription. Check your mailing label to make sure that your last issue has been changed accordingly. If your *GS+* Magazine subscription was for the magazine *only*, you will begin receiving the *GS+* Disk when the *8/16-Central* portion of your subscription "kicks in." (In other words, when your original *GS+* Magazine subscription expires.)

Thanks!

I'd also like to take a moment to thank everyone that sent wedding congratulations and/or gifts to Noreen and me. We were married late in October (near her birthday—she's *so* sneaky) and spent a wonderfully relaxing week in Miami Beach and the Bahamas. To be honest, I was about *this close* to being completely burnt out! The time off really helped me get back on track. It also helped me slip yet another week behind schedule. Oh well . . .

Rawhide!

Effective December 30th, *GS+* Magazine will be moving into a new set of offices—actually, we are going to be operating out of the basement of our new home! (God bless President Bush and the recession—you can't beat an 8% loan!) The only problem is that this new home is *way* across town. Among other things, this means that our phone number will be changing (the 1-800 number will stay the same though). At this point, I do not know what the new number will be, so I would suggest that until next issue, you mail all correspondence to either our P. O.

Box or one of our electronic mailboxes. (Which is what you should do anyway!) If you have to send us a U.P.S. or overnight package, please give us a call on the 1-800 number to find out our new address. And don't forget to check the **a.Read.Me** file on your *GS+* Disk for any last minute information (like whether or not we are actually going to be moving—I'm such a pessimist!)

Also, since we *will* be in the process of moving, I can't guarantee that we will be able to answer the phone every time it rings (if I'm in the process of moving a washer or dryer, I can *guarantee* I won't be running for the phone!), or to return your calls immediately. This is another good reason to write instead of calling during this period. (And don't forget to include your phone number or on-line addresses so that we can get back in touch with you when we do get settled in!)

That's all I can think of right now. How can I possibly fill the rest of this page? I know! A wedding picture!

Diz

GS+



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GS+

Magazine

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On The Cover

Seven Hills Software's Font Factory GS gives us a close-up look at the 24-point Zapf Chancery font. For more information on fonts, see the article "How Fonts Work" in this issue.

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Letters

Our fist letter comes to us from an old and dear friend of our who just happens to be an emotionally scarred Gulf War veteran.

Formerly a sane IIGS die-hard, he bought a PC Clone just weeks after returning from 6 months in the desert. Who says the Allies won the war?

Dear IIGS Owners,
"Ever dance with the Devil in the pale moonlight?" Jack Nicholson's Joker asked us in "Batman." Most of us, Jimmy Page excluded, would say nope. Not me, though. I did, and still do. I'm not undertaking some Faustian endeavor, you see. Far worse than that, my friends. My soul is indeed forfeit. I bought a PC. As Jami Lowery says, I'm "dancing with the Devil in the pale BLUE light." Get it? As in "Big Blue?" She had to explain it to me, as well.

If you've read any of my features in this magazine, you know that my distaste for the MS-DOS knows no bounds. I just plum' don't like the direction computing has taken since the PC became dominant. I still bought a PC. I had to, you see. I wanted to run some high-end CAD applications, and the IIGS CAD category is somewhat soft right now. So, I did it. Plunked down big bucks, and came away with a PC.

This isn't just any PC, mind you. It's a 33 MHz 386 with all the trimmings. It's got more meg than Dennis Quaid. Super VGA, sound card, the whole enchilada. This thing is so powerful that when I turn it on the lights dim. I feed it a digital watch a week. When I did some number crunching a few days ago, the task was accomplished in a manner that would do Joe Amato's Top Fuel rail dragster proud. The very time/space continuum was threatened by this thing's power-point singularity.

However, just like Mr. Amato's machine, my PC doesn't handle too well in town. Or at home. The Windows 3.0 environment I'd hoped would deliver me

from the unspeakable horrors of MS-DOS 4.01 has failed me. Nice joke, Mr. Gates. Ha ha ha. I know where you live, by the way. At the Atlanta COMDEX, Windows 3.0 was spoken about in tones that bordered on the reverent, if not devoutly worshipful. For MS-DOS weenies, this is hot stuff. For us of the Apple sect, it's much ado about nothing. While it may look like the GS/Mac GUI, it certainly doesn't handle like it. Not even close. This reminds me of putting one of those ridiculous Rolls-Royce grills on a VW Beetle. The front end might look like a quality product, but you learn better when you try to drive it. Windows 3.0 might look good, but it still has the sinister specter of MS-DOS lurking just behind the screen... patiently waiting for you to try something productive. Foolish mortals.

Since this high-speed idiot had taken up residence on my desk, my life has been a constant stream of CONFIG.SYS, AUTOEXEC.BAT, HIMEM.SYS, Extended Memory, Expanded Memory, and other cryptic messages too ominous to repeat. There's no relief from this in the PC magazines. Where the Apple press has nice guys like Diz dedicated to elevating home computing to new heights, the PC magazines have inane debates between John Dvorak and Jim Seymour on the future of OS/2. For some reason, Dante didn't mention this circle of Hell.

Before you begin your descent into madness and buy one of these things, take a moment to evaluate your needs and desires for the future. Do you truly enjoy the wonderfully friendly interface of your GS? While you may gaze in resentment at the cartloads of cool games coming out for the PC, ask yourself if it's worth the hassle. At times I wish I had a ninja outfit so I can sneak up on this thing at night and make some progress when its guard is down. I could always threaten to club it into oblivion with the 600+ page Windows 3.0 manual, but I can't even lift the tome.

Woz, can you ever forgive me?

Bryan Walker
Address withheld out of pity.

Dear Sir,
... Sometimes when I restart my GS, a message "Fatal System Error -> 0911" displays on the monitor. Would you please tell me what it means?

Mr. Yang Chun Ping
Taichung, Taiwan

I used to see this one a lot myself, but I couldn't quite remember exactly what it meant. So, I asked our good friend Matt Deatherage what it meant. According to him, this error code means that the Apple Desktop Bus controller could not get itself synchronized properly. The most common cause of this problem is an overheated system. So, you should probably get yourself a System Saver GS or Conserver to cool things off inside your IIGS. If you already have a fan, check it to make sure that it is working properly.

Diz

Dear GS+,
Do you have an annual index of articles in your publication? I have volunteered to help our Apple group's librarian sort out "stuff" he has collected for years. (I just joined the group last year.) He tells me the group has copies of your magazine from September-October 1990 to the present.

Arlene Chiero
Niles, IL

Currently, we don't publish an annual index of articles, but each issue contains a listing of previous issues with the most important articles in it. We hope that as the magazine grows that we can eventually add an index of articles.

Wilma

Dear GS+,

In addition to Greg Zimmerman's review, "A Comparison of Two 100MB Hard Drives," [GS+ V3.N1] I would simply add that TMS Peripherals has always used (and continues to use) Quantum mechanisms in its hard drives. Frog Systems has been using and currently uses Rodime mechanisms in its hard drives. Rodime is, at present, in Chapter 11 proceedings! Perhaps this is one reason for the cost disparity of the two drives?

Greg Sammons
Sales Manager, TMS Peripherals
Boca Raton, FL

That's a good point Greg. Perhaps we should compare two Quantum drives in the near future?

Diz

Dear Steve:

I received my trial issue [GS+ V3.N1] and disk today and found it to be very interesting. . .

I installed Autopilot and plan to use it to launch applications. I did find several applications that it seemed unable to launch. Also it seems to be having difficulty in launching a data file on hard drive partition 2 with AppleWorks installed on partition 1. . .

I was unable to get the "Joke.A.Rama" software to launch. And I haven't a clue as to what is wrong. I did look at the text files, but what does the program do? From the description I would need ORCA/Talking Tools to take full advantage of this anyway. . .

James Harris
Fairburn, GA

Here at the office, we have not found any applications which Autopilot would not launch. If you could tell us exactly which applications were giving you the trouble, that would be helpful in tracking down the problem. As for the problem of launching AppleWorks data files, AppleWorks Classic does not support this feature. (No 8-bit program does.) Only certain IIGS-specific applications (like AppleWorks

GS) support the launching of data files. Since you did not specify which AppleWorks you are using, I can't offer much more advice than that.

Joke-A-Rama was written as a supplement to the reviews of ORCA/Integer Basic and the ORCA/Talking Tools. It's main purpose was to demonstrate how to write programs with ORCA/Integer Basic and the ORCA/Talking Tools. Rather than doing a dull, "Sieve of Eratosthenes" type program, Joe wanted to do a "fun" program. Joke-A-Rama is supposed to tell jokes. It can work with or without the ORCA/Talking Tools, but it won't actually talk unless you have them installed. Again, there wasn't enough information in your letter for me to even hazard a guess as to why Joke-A-Rama wouldn't work for you. If you could, please fill out the problem form that was on your GS+ Disk and send that to us. That should give us enough information to try and solve the problems.

Diz

Dear GS+,

I tried to call you between 9 A.M. and 9:30 A.M. one morning but your line was busy during that time. That is 6 A.M. our time, and then I had to go to work. I'm not sure that is typical of your phone line, but if so, maybe you need to address that issue. As I am calling from across the nation a hold system wouldn't do much good as I am not about to be on long distance hold for half an hour. . .

Also [I have] a question, maybe for your magazine. I've had my used IIGS for only 9 months (and love it, especially after having a hard drive with which to boot GS/OS) and it will sometimes crash. Sometimes it is older desk accessories that crash (probably incompatibility with newer GS/OS) and sometimes just older programs crash. I have a fairly complete list of GS/OS error code explanations of probably 300+ ProDOS errors, etc. What I need is some way to find out what error occurred so I can tell what happened. For example, Milestones 2000 was not working right only because I didn't have the TOOL.029 (ACE) in the tools folder.

I know there is a program called GSbug, which you have referred to, but that seems beyond my experience. I don't want to correct the programs, just find out what error message is, which will sometimes help me correct the problem. Is there a program/utility to help me in this. . . ?

Lyle J. Horwath
Aloha, OR

Our office hours are from 9 A.M. to 6 P.M. Eastern time, and our phone line has the "call-waiting" feature (rather than "on-hold"—we detest being put "on hold" when calling long-distance, too), except first thing in the morning when we disconnect the call-waiting feature to check our mail on the various information services. This usually takes a half hour or so. If the line is busy, try calling back in about half an hour or send us E-mail on America Online, GENie, or Delphi—see the title page for our addresses on those online services. As for the error messages, GSbug is definitely not the program you are looking for. However, there are several public domain and shareware programs that provide error codes and relevant messages. One of our favorites is Nifty List by Dave Lyons (shareware \$15). This is mainly a programming utility, but it does include a list of error codes. Another is the Error Codes CDA (shareware \$5), which is a favorite of our "games editor," Big Dave Adams. Both of these can be obtained from the Big Red Computer Club, Norfolk, NE, phone (402) 379-4680, or you can download them from the one of online services listed above.

Wilma

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

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

GS+

How Fonts Work

By Matt Deatherage

Introduction

I was recently traveling across the country and, being bored with the programming books I was reading, stopped in at an airport newsstand to see what might be interesting to read (although, for some strange reasons, there are never any books about plane crashes or the airline industry available there). One of the MS-DOS magazines had a cover that read (and I kid you not), "You can never have too many fonts." It then went on to detail several articles such as what kind of font software you want, what kinds of fonts you want, what kinds of printers you want, etc.

Well, for Apple IIGS owners, at least a large part of those questions are irrelevant—software to manage and render fonts is built into the Apple IIGS System Software and has been since about version 1.1. All you have to do is get a font installed and QuickDraw II will happily draw in it with no additional help from anywhere.

However, most people want to be able to not only display a large variety of type faces and styles, they also want to be able to print them. (There are some cases where printing is not required—consider some HyperStudio or HyperCard stacks, games, About boxes, etc.) Printing becomes a bit trickier—does QuickDraw II work on your printer? Don't you have to have PostScript fonts? Does it work with those new "TrueType" printers? Don't I have to have special fonts or sizes to avoid getting "jaggies?"

Fortunately, there's one answer to *all* these questions. Unfortunately, it's "maybe." By the time you're through this article and the one to follow, you should know everything you could ever want to

know about getting the text you want on the screen and on your printer. But let's not get ahead of ourselves—we should start out with the basics.

They Work Like This . . .

A *font* is a term used on personal computers to represent a particular typeface, including its design, weight, style and size. The font's *design* is what makes the typeface look different from every other typeface. For example, GS+ is set in the Times typeface, named because it was originally designed for the London Times. The font can also come in several *weights*, such as light, regular, book, and bold. Also, each font has a *style*—plain, italic, emboldened, outlined, shadowed, or some combination of these styles.

Each font also has a *size*, which is usually represented as a number between about 6 and 255. Ostensibly, the size is in a typographical unit of measurement called a *point*—there are 72 points in an inch. However, when a designer creates a font, the size is only determined by a value stored in the font itself—no calculations or verification of the size is done. Anyone could create a font as tall as the entire screen and call it "10 points," the system won't complain. Because of this variation in font sizes (which is true even when using metal type, by the way), they're most often used to organize sizes within a given typeface. For example, Times 12 may not be the same size as Helvetica 12, but it's almost certainly right at 20% bigger than Times 10.

A font consists of each of these components, although sometimes the terminology is confused. You might hear

people refer to the "Times" font, but you can't ask your Apple IIGS's Font Manager to display "Times." You also have to specify what style and what size (neither the Apple IIGS nor the Macintosh support different weights as an intrinsic property of a font). To help avoid this confusion here, we'll refer to a given combination of typeface design, weight, style and size as a "font." We'll use the term "face" to mean all sizes of a given design, weight and style (such as "Times Italic"), and we'll use "family" to represent all instances of a given design (for example, the "Times" family includes Times, Times Bold, Times Italic, etc.).

There are two common ways of rendering fonts on personal computers. One is fast and simple, the other is slower and complicated, but more accurate. The faster method uses *bitmap* fonts, also known as *screen* fonts. This method is what the Apple IIGS System Software uses. Any font used by QuickDraw II follows a format that's defined in Volume 2 of the *Apple IIGS Toolbox Reference* in the "QuickDraw II" chapter. You can look there if you're interested in the specific definition of a font. The important thing to know is that the font consists of a bunch of information about the font as a whole, a bunch of tables that contain information about each character in the font and the size it takes, and a bunch of data that represents this particular instance of the font. This is called the *font strike*.

The font strike is an image of every character in the font drawn next to each other with no space between the characters. Imagine this all drawn on a giant sheet of graph paper, with a square darkened if a given pixel is turned on for a character, and white if the pixel is not turned on. After that's done, go through starting at the upper left of the first row and group all the boxes into groups of eight. Turn each square into a binary digit (1 for darkened, 0 for empty) and turn each group of eight into a byte. Repeat this until all the squares are accounted for. Congratulations, you've just created a font

Some Basic Font Terminology

<i>Font</i>	A given combination of typeface design, weight, style and size.
<i>Face</i>	All sizes of a given design, weight and style (such as "Times Italic").
<i>Family</i>	All instances of a given design (for example, the "Times" family includes Times, Times Bold, Times Italic, etc.).

strike! Fortunately for the typographers of the world, excellent programs exist on the Apple II and the Macintosh to help create these beasts. ("Font Factory" from Seven Hills Software is one such program.)

To draw the font, QuickDraw II does some processing on it to expand it for the Apple IIGS hardware (the font strike contains one bit for each pixel, but the Apple IIGS screen uses two bits for each pixel in 640 mode, or four bits per pixel in 320 mode) and more or less "blasts" the expanded version to where you want to draw the character. When you consider how this kind of font works, something will become apparent. This kind of font only works well for *exactly* the font you requested. The font strike for Times 14 would be substantially different from that of Times 12, and Times 12 doesn't have any information in it about Times 14. For example, the "a" character looks similar to us in both fonts, but to the computer it's a bunch of different bits in a different-sized rectangle. The Times 12 font strike doesn't tell you much, if anything, about where the extra bits for the 14-point Times "a" should go.

This is where the Font Manager comes in. The Font Manager owns the **Fonts** folder in the **System** folder of your boot disk. When you ask for Times 14, the Font Manager looks in memory for it, but it probably won't find it. Then it looks on disk, but it doesn't look at filenames; the name of the font family and the size are embedded inside the font file. The Font Manager has to look at the font header for each font file to know this information, which is why starting up the Font Manager can take a long time if accurate information isn't cached in a "cheat" file called **Font.Lists** kept in the **Fonts** folder. If this wasn't true, you'd never be able to rename a font file. If Times 14 isn't found on disk, the Font Manager uses an internal scaling algorithm to try to create Times 14 from one of the other Times fonts that is available. Only if no other Times font is available does the Font Manager eventually give up and return a 14-point version of the system font (usually Shaston on the IIGS).

ARRGGH! That Isn't Square!

You may be wondering what all this talk about "squares" of pixels means when four pixels on the IIGS don't make a square—they make a rectangle that's about 43% taller than it is wide.

It turns out that fonts, like other creative works, are covered by copyright law. Apple has the rights to distribute several of the most popular fonts with the Apple IIGS System Software, but that doesn't include the right to change the font strikes. If you had the right to sell *The Satanic Verses* by Salman Rushdie, you couldn't change his words and continue to call it the same thing. You might get him in trouble, for one thing.

All the font strikes Apple has the right to distribute were originally created for the Macintosh, where pixels are square (and usually fit 72 per inch—one point each). If Apple modified the font strikes to make them look "better" on the IIGS hardware, the fonts would have to be renamed, which would have confused a lot of people. Besides, the Apple IIGS does have 320 mode, where pixels are *almost* square, which would make the "corrected" fonts look wide and fat.

So Apple chose not to change the font strikes and to keep the familiar names. There is a convention, though, that font family numbers of fonts designed for the aspect ratio of the IIGS are greater than \$8000 while fonts designed for square pixels have font family numbers of \$7FFF or less. All the font numbers assigned by the GENIE Font Clearinghouse follow this convention. Unfortunately, this information is hidden in the font family number where users will usually never see it.

It's that scaling algorithm that's responsible for the "jaggies" you've probably seen from time to time. The Font Manager tries to be as clever as it can, but as we noted above, there's not a whole lot the Font Manager can do to figure out how to scale a font by a multiple of something like 1.2. Since pixels are by nature integral (it's either on or it's off; a pixel is never 75% on), scaling a font by an integral multiple usually doesn't produce incredibly ugly results, although it's not exactly perfect either.

The first thing the Font Manager will try when creating a scaled font is scaling down a font that's a higher integral multiple of the one you want. For example, when you ask for Times 12 and don't have it, the Font Manager will try to create it from Times 24 or Times 36. Since the larger font strikes usually have a lot more detail, this is usually a good strategy. Let's imagine we're creating Times 12 from Times 24—we'll have to scale it down both horizontally and vertically. For each two pixels across or down (a four-pixel square) taken from Times 24, we'll have one pixel in Times 12.

If all four of the pixels are either on or off in a given square in Times 24, the way to scale that pixel for Times 12 is easy—make that pixel the same way all the ones in Times 24 are. The problem comes when some of the pixels in a given four-pixel square of the original font are on and some are off. The Font Manager can't just count pixels and average them—that way it could lose important features of characters, or turn on pixels in Times 12 when it's not appropriate. For example, if a given four-pixel square has the upper-left and lower-right pixels on in Times 24, how should that pixel be represented in Times 12?

What the Font Manager winds up doing is turning that pixel on in Times 12 if *any* of the pixels in the square are on. Other strategies all result in lost character features, but this strategy often gives smaller characters that are "chunky," or that have too many pixels on to be really good representations of the font at a smaller point size. Try removing all but the 24 point version of some font from your system and ask a word processor for the 12 point version. Compare it to the 24 point version and you'll see this difference.

If a larger integral multiple of the requested point size isn't available, the Font Manager tries for a smaller integral multiple. The scaling problem is much easier in this case—instead of turning a big square into a smaller one, the Font Manager now has to turn a smaller square into a bigger square. Say you're trying to create Times 48 from that Times 24 font we already have—it's the same problem as trying to create Times 12 from it, but the other way around. Now each pixel in Times 24 will be four pixels in Times 48, and that's easy—turn all four pixels on for each pixel in Times 24 that's on. Unfortunately, this makes the larger scaled font look "blocky" and "jaggy"—it's twice

as big, but it has no more resolution. The curves aren't any more well-defined. On the bright side, though, no features are missing or over-compensated for.

If integral multiples of the font aren't available, the Font Manager starts trying to scale down non-integral bigger fonts, and then it tries scaling up non-integral smaller fonts. This creates even more problems, since now instead of mapping pixels to more pixels (or less pixels), the Font Manager has to map pixels to more or less pixel *parts*, and pixels don't really have parts. If you want to create Times 14 from Times 12, the Font Manager has to figure out how to turn each Times 12

pixel into 1.167 pixels in Times 14. It does the best it can, but it's a thankless (and sometimes totally unworkable) task.

That's Enough For Now

In the next issue of *GS+* Magazine, we'll see how the Font Manager interacts with the Print Manager to produce the pages that your printer churns out. We'll also talk about printing to PostScript printers (like the LaserWriter IINT) and I'll attempt to explain just exactly what "TrueType" is. In the mean time, if you have any questions on this article or suggestions for new articles, let me know by writing to me care of *GS+* Magazine. See you next time. **GS+**

Advertisers Index

By Steven W. Disbrow

GravenStein - Page 10

What's this? An ad for a *user group*? Sure, why not? Even if you don't live in the greater Petaluma area, you owe it to yourself to contact the folks at the GravenStein User Group. If you represent a user group, you should definitely begin exchanging newsletters with GravenStein. They have one of the best newsletters that I have seen (and I've seen quite a few newsletters) and the discounts that they offer their members on hardware are nothing to sneeze at.

TMS Peripherals - Page 12, 13

Several months ago, I desperately needed a 45 MB removable to do backups with (see review in *GS+* V2.N5). TMS got it too me in less than 24 hours and I paid about \$100 less (shipping included) than the "base sticker price" of just about any of the big name 45 MB removable drives advertised in the MacRags. Since then, the drive has not given me a single problem. Even if the drive *had* been bad, TMS has a Toll-Free support line, a 30 day Money Back Guarantee and a 2 year Warranty!

Part of our job here at *GS+* is to find the best people in the business and point them out to our readers. I was so impressed with TMS' products and service that I practically *begged* them to advertise with us.

Raptor, Inc. - Page 29

The products advertised here are *image enhancement programs* for your black-and-white 320 mode graphics. Although I have not had much time to play with the review copies that Raptor sent us, they seem to do exactly what they promise—and they do it very well! And recently, John Majka of Raptor contacted us to say that they have sped up the operation of both programs. If you need the ability to perform the same kind of processing that NASA does on satellite photos give the folks at Raptor a buzz, there simply isn't any other product like this for the IIGS.

DreamWorld Software - Page 35

After a long wait, DreamGrafix is here! Well, that's what they tell us anyway. At this point, I have not personally seen a copy of this program. However, I have heard some *amazing* things from the beta testers I've talked to and the folks at DreamWorld Software promised that the program would be shipping before they placed an ad with us. You can see the ad in this issue, so it *should* be available now. Give DreamWorld a call for more information.

Triad Venture - Page 42

Way back in *GS+* V1.N2, we reviewed one of the earliest versions of Graphic Disk Labeler. The reviewer, Wayne

Packard, really liked the program, but found a few problems: In the two years that have passed, Triad has updated the program (fixing all of the problems Wayne found during his review) a couple of times and shown their commitment to the IIGS market. One sign of that commitment was the release of the HyperStuff collection which we reviewed in *GS+* V2.N5. Triad Venture is in the IIGS market for the long haul, and these are good products, give 'em a try.

GS+ Magazine - Page 48

This is a definite conflict of interest, but what the heck! These shirts are great! Order yours today! Seriously though, if you want a size that we don't have shown, let us know. If we get enough requests, we'll have some shirts printed up in those additional sizes.

Econ Technologies - Back Cover

Econ is a new advertiser with *GS+* Magazine, and they are a new player in the IIGS internal hard drive market. At this point, I have not had any first hand experience with the Econ drive, so I can not make a recommendation one way or the other. However, I have met the folks at Econ and they seem very committed to the IIGS market place. If you have an Econ drive and would like to write a review of it for us, I want to publish it! **GS+**

Working With The Toolbox

By Josef W. Wankerl
Part 5: The Event Manager

Starting with this issue, all code examples for this series of articles will be in ORCA/Pascal. I'm currently using version 1.4.1 of the ORCA/Pascal compiler. If you're using an earlier version, it might be worthwhile to upgrade—the cost is only \$10 (see "Product Updates" in this issue). It should be fairly easy to translate Pascal code into C or assembly, since most of the contents will be Toolbox calls instead of program logic.

What Is An Event?

An event is: a keypress, a button press on the mouse, a window activating, and other things that your program wants to know about. The *Event Manager* keeps track of events, prioritizes them, and then feeds them to your application. So basically, the Event Manager tells you about important user actions (keypresses, mouse buttons) and window information.

Event Types

Each event has an event code. Table 1 describes all the currently defined event types. For each event type, there is information stored in an event queue. For example, a keypress event carries information about which key was pressed and which modifier keys were held down at

the time of the keypress. An event record describing a mouse down event (i.e. the user pressing the mouse button) contains information about where the mouse was when the button was pressed. The section "Common Event Manager Calls" explains this related information in more detail.

Will I Use The Event Manager?

Much like the Miscellaneous tool set (see "Working With The Toolbox - Part 3" in *GS+ V2.N6*), the Event Manager is a "low level" tool set. The reason "low level" is in quotes is because it's not *really* a low level tool set—but hardly anyone ever uses it. You, most likely, won't ever have to fool with it. Instead, you'll use the Window Manager's `TaskMaster` call to automatically take care of the mundane events and housekeeping. However, since `TaskMaster` makes heavy use of events and the Event Manager, you should know what the Event Manager does.

Queue

The Event Manager stores events in an event queue as they happen. The event queue is prioritized, as well. Window activation events always take precedence over other events. For example, if you pressed a key, a `keyDownEvt` event would be generated. Then if a window

activates before your application checks for an event, another event is generated and its priority is higher than the `keyDownEvt` event. Now when your application tries to see what event to do next, it will see the window activation event before it sees the `keyDownEvt` event. The *Apple IIGS Toolbox Reference: Volume 1* contains a very good description of event priorities starting on page 7-4. I suggest that you read that section to become familiar with how events are kept track of.

Common Event Manager Calls

The most frequently used Event Manager call is `GetNextEvent`. It returns the currently pending event in the event queue. The call also removes the event from the queue. If you want to see what the next event is, but leave it in the queue, the `EventAvail` call should be used. When you ask for an event, the Event Manager fills in an *event record* which contains information about the event. An event record is defined in Pascal as:

```
eventRecord = record
  eventWhat: integer;
  eventMessage: longint;
  eventWhen: longint;
  eventWhere: point;
  eventModifiers: integer;
end;
```

The `eventWhat` field contains what type of event occurred (in other words, one of the codes shown in Table 1). The `eventMessage` field contains information specific to that type of event. For example, the `eventMessage` field for a `keyDownEvt` event would contain the key pressed. The `eventWhen` field contains the time (in ticks) that the event occurred. The `eventWhere` field contains the mouse location at the time of the event. The `eventModifiers` field contains the modifier keys (Command, option, etc.) that were pressed and the mouse button state when the event happened. The *Apple IIGS Toolbox Reference: Volume 1* has a diagram and explanation of the modifier field on page 7-9

Table 1 - Event Codes

Code	Event	Comment
0	<code>nullEvt</code>	No events are in the event queue
1	<code>mouseDownEvt</code>	The mouse button was pressed
2	<code>mouseUpEvt</code>	The mouse button was released
3	<code>keyDownEvt</code>	A key was pressed
4	(undefined)	
5	<code>autoKeyEvt</code>	A key was held down so it repeated
6	<code>updateEvt</code>	A window wants to be updated
7	(undefined)	
8	<code>activateEvt</code>	A window activated or deactivated
9	<code>switchEvt</code>	(reserved)
10	<code>deskAccEvt</code>	The CDA menu was brought up
11	<code>driverEvt</code>	Device driver event
12	<code>app1Evt</code>	Application-defined event 1
13	<code>app2Evt</code>	Application-defined event 2
14	<code>app3Evt</code>	Application-defined event 3
15	<code>app4Evt</code>	Application-defined event 4

The Event Loop

Creating a desktop application that follows Apple's guidelines requires that you have an *event loop*. Basically, an event loop looks like Figure 1. This short partial program will beep whenever a key is pressed (or held down) and will quit when the mouse button is pressed. This program spends most of its time checking for an event. When an event occurs, it is acted upon. Properly written desktop applications should only have one main event loop—everything that requires user interaction will take place because of this main event loop. At first, the concept may seem a bit weird, but with some practice and some examples, you'll hopefully start to see the elegance of this method.

Masking Events

There are times when you don't want to know about every single kind of event. For example, if you are displaying an "About" dialog and want it to disappear whenever a key or the mouse button is pressed, you couldn't care less about all the other event types. An *event mask* is useful in this situation. When asking for events, simply tell `GetNextEvent` to only return `keyDownEvt`, `autoKeyEvt`, or `mouseDownEvt` events. The event mask is detailed on page 7-11 of the *Apple IIGS Toolbox Reference: Volume 1*. Some code to wait for a keypress or mouse button is:

```
While  
GetNextEvent(autoKeyMask +  
keyDownMask + mDownMask,  
MyEventRec) = 0 Do;
```

The previous line of code works because `GetNextEvent` will only return key down, auto key, and mouse down events. If anything (or nothing) else happens, `GetNextEvent` will return a zero. That's the elegance of the event mask.

Figure 1 - A Simple Event Loop

```
Quit := False;  
While Quit = False Do  
  If GetNextEvent (everyEvent, MyEventRec)  
  Then  
    Case MyEventRec.eventWhat Of  
      mouseDownEvt: Quit := True;  
      keyDownEvt: SysBeep;  
      autoKeyEvt: SysBeep  
    End;
```

Application Defined Events

Sometimes it's useful for your application to define its own event types. A bad example is to define a `Quit` event. Taking the example code from Figure 1 and modifying it a bit, the code in Figure 2 can be used to set the quit flag when a `Quit` event occurs. You might be wondering how an application defined event is generated. The `PostEvent` call is used to place *any* event in the event queue. So, to place the `Quit` event, the following call could be made:

```
Res := PostEvent (applEvt, 0);
```

In thinking about how application defined events could be used, the only good use I could think of was to use them when an error occurs while your program is doing something outside its main event loop (loading a file, for example). You don't want to have an error displaying routine in each of the routines you write, so whenever you find an error, you post an event for it and wait for your main event loop to pick it up and handle it. Now you're probably thinking, "I could just do that with a subroutine." Well... maybe. There might be an error (or some other event—see, we're looking for *events* that occur within your program—most things can be thought of as events if you look at them in the proper perspective) that you don't want to handle right away.

So you post an event for it and handle it later. (If you can think of any other situations that could be handled by application defined events, please let me know.)

Catching Up

Since we finally have a way of interacting with the user, I've written some source code that demonstrates the use of the Event Manager and QuickDraw II. The program doesn't do all that much, but it provides some examples of Toolbox calls that I have discussed before. You can find the program and the accompanying source code in the `EventManager` folder on your `GS+` Disk. The source code is commented heavily so you can get a feel for what is happening. A good way to read the source code is to start at the main procedure (at the bottom of the source code file) and then check out each individual procedure that the main calls.

Once you're familiar with how the program is working, try taking out the comments, putting the source code aside for a week or so, then try to figure out what the program is doing without the comments. Hopefully it won't be all that difficult. Then, wait another week and try to re-create the program from scratch. It doesn't have to do everything mine does—just try a simple event loop that quits on a keypress, or when the mouse is clicked in the lower left hand corner of the screen. Of course you can use your Toolbox references. It'd be silly not to. Just don't look at my source code. (Oh yes, be sure to understand type casting in ORCA/Pascal—it took me a while to code my `StartupTools` line because of all the weird errors I was getting because my parameters weren't type cast correctly.)

Figure 2 - The Same Event Loop Using A "Quit" Event

```
Quit := False;  
While Quit = False Do  
  If GetNextEvent (everyEvent, MyEventRec) Then  
    If MyEventRec.eventWhat = applEvt Then  
      Quit := True;
```

To give you a better overall understanding of the program (sometimes comments just show the little picture, not the big one) I've described what is going on in these next couple of paragraphs. The program starts up all the tools it needs (with the `StartUpTools` call) and then enters its main event loop. The main event loop checks for a keypress or a mouse click, and if it finds one, it posts a Quit (application defined) event. If a Quit event is found, then the quit flag is set and the program shuts down the tools it started (with the `ShutDownTools` call) and quits. If no keypress, mouse click, or Quit event is found, some random shapes are drawn on the screen.

The QuickDraw II portion of the Event program relies heavily on two constructs: the pen pattern, and the rectangle. The

pen pattern defines what pattern (in this case, the color) will be drawn, and the rectangle defines where the object will be drawn (i.e. inside the specified rectangle.) For more information on the calls, refer to the *Apple IIGS Toolbox Reference: Volume 2*.

Is That All?

The Event Manager may seem like a rather small tool set from the few calls that I've talked about. However, there is a bit more left to explore. For example, the Event Manager supports *Journaling*—a way in which the Event Manager records all the events and can then play them back. That's the basis of how macro programs work. Reading the Event Manager chapter in the *Apple IIGS Toolbox Reference* should open your eyes to the flexibility and power of the Event Manager.

Stay Tuned . . .

Next issue I'm going to be covering a tool set that many people are uncomfortable with: The Resource Manager. (It's really simple—trust me!) So, if you haven't already, go out and get the *Apple IIGS Toolbox Reference: Volume 3!!!* (And volumes 1 and 2 as well, since you're going to need them one day anyhow.) To work with resources, you'll need some kind of resource utility—like Rez, Genesys, or Design Master (I prefer a combination of Genesys and Rez). Since ORCA/M 2.0 is now out, you might want to buy that—it comes complete with Rez, GSBug, and a whole lot more! If you have any questions about topics that have been covered previously feel free to send them in and I'll do my best to answer them. **GS+**

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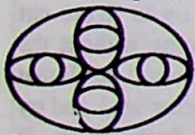
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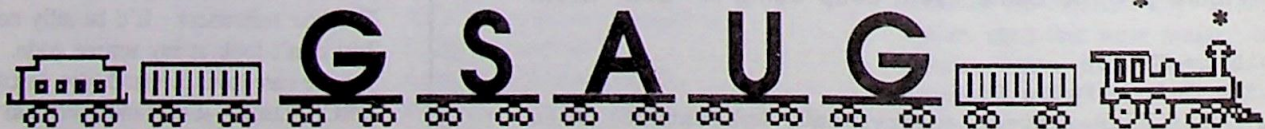
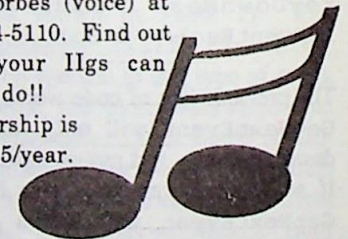
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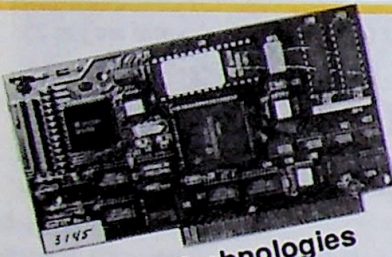
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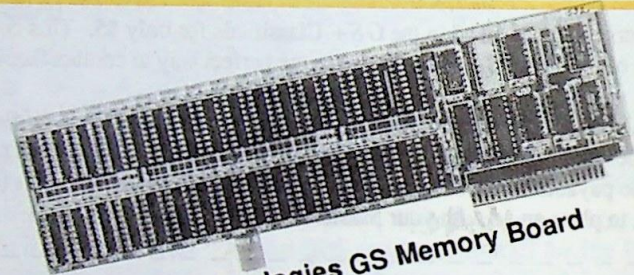
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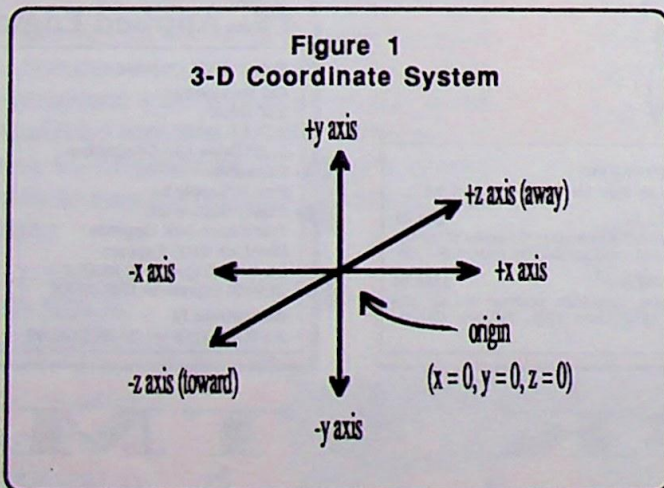
Introduction To 3-D Graphics

By Michael Lutynski

Have you ever seen those flashy three-dimensional (3-D) animations in commercials, music videos, or in the movies and wondered how they're done? It's not hard to learn the basic principles of 3-D graphics, and your Apple II GS makes it all the easier with its built-in drawing tools. We'll learn step by step just how 3-D works by showing the data structures, presenting the 3-D formulas, and then creating a sample program using ORCA/C. (See "How To Use The GS+ Disk" for more information on using this program.) If you prefer programming in a language other than C, you should have no problem converting the 3-D formulas to your language.

Coordinate Systems

Almost everyone is familiar with two-dimensional graphics because they're easy to understand. There is an x and y axis where the x axis runs horizontally and the y axis runs vertically. Where the two axes meet is called the *origin* and has the value of 0 for the x coordinate and 0 for y coordinate. In 3-D, we use an extra axis called the z axis which runs neither horizontally nor vertically, but away from us. By convention, the positive x axis is to the right and the positive y axis is up, but there isn't an industry standard as to whether the positive z axis is away from us or toward us. We will abide by the convention of the positive z axis moving away from us. (See Figure 1.)



Data Structures

All objects are defined using 3-D points. A 3-D point has three components: an x, y, and z coordinate. A point is not a number, but a group of three numbers that are dealt with as a whole. Moving, rotating, and scaling points are done with respect to the origin. For example, when rotating a point, it is always rotated around the origin.

In our program, we will have two objects: a box and a pyramid. To represent an object, such as a box, we will need to place a point at each of the object's corners. A box has eight corners and so our box will have eight points (see Figure 2). We then find the coordinates of each point and make a list of points for every object. The origin will be at the exact center of the box.

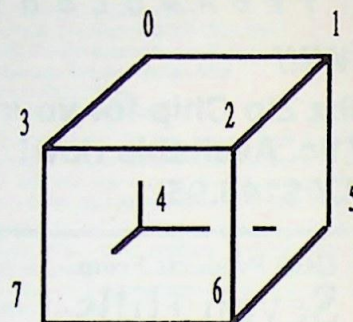
Objects are not just points—they have *surfaces* too (see Figure 3 on the next page). So we will make a list of surfaces for each object. In addition, each surface contains a list of *vertices*, which are indexes to the object's points.

We won't actually need to compute anything about the surfaces in this article, but we will need the surface data when we are drawing the surfaces.

Operations On Objects

We will perform three operations on an

Figure 2
Vertices For The Box



Point	(x, y, z)
0	(-1, 1, 1)
1	(1, 1, 1)
2	(1, 1,-1)
3	(-1, 1,-1)
4	(-1,-1, 1)
5	(1,-1, 1)
6	(1,-1,-1)
7	(-1,-1,-1)

object: *scaling*, *rotating*, and *moving*. It's important to perform these operations in the given order because rotating before scaling would not bring about the expected results. The operations are performed only on the points of the object because the points are what define an object's shape.

Scaling

If we wanted to expand or shrink an object, we would scale all of the object's points. To scale a point, `thePoint`, we use these formulas:

```
scalePoint.x =  
    thePoint.x * scale.x;
```

```
scalePoint.y =  
    thePoint.y * scale.y;
```

```
scalePoint.z =  
    thePoint.z * scale.z;
```

Notice that the variable `scale` has an x, y, and z component just like a point. We can use points for dual purposes like scaling, and it works. If we did not want to scale the object at all, we would set

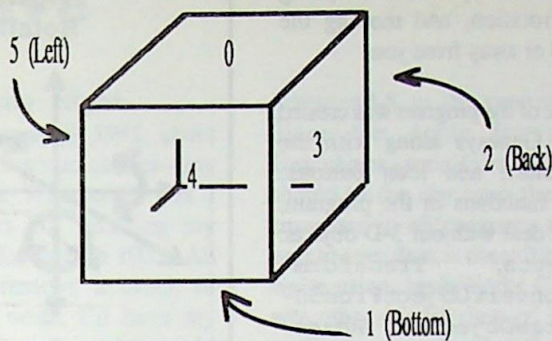


Figure 3 - Surfaces Of The Box

surface	points (from Figure 2)
0	0, 1, 2, 3
1	7, 6, 5, 4
2	1, 0, 4, 5
3	2, 1, 5, 6
4	3, 2, 6, 7
5	0, 3, 7, 4

each of the scale components to 1 because multiplying by 1 does not change the original value. Also notice that we can scale each axis individually. So if we wanted to elongate our box object, we would set `scale.x` to, say, 5 and leave `scale.y` and `scale.z` at 1. Then the box would be 5 times wider than its original size.

Rotation

How do we rotate an object? We do so by rotating each point of the object about the x, y, and z axes one axis at a time (see Figure 4 on the next page). To rotate a point, `thePoint`, around the x axis, we use the following formulas:

```
rotatePoint.x = thePoint.x;

rotatePoint.z =
(cos(angle) * thePoint.z) -
(sin(angle) * thePoint.y);

rotatePoint.y =
(sin(angle) * thePoint.z) +
(cos(angle) * thePoint.y);
```

The variable `angle` is in *radians*. There are 360° in a circle, but 360 is a meaningless number with computers; radians are better suited to expressing angles. In contrast, there are 2π , or 6.28, radians in a circle. And dividing 360 into 6.28 gives the number of radians per

degree: 0.0174. So, for example, if we wanted to rotate a point about the x axis 2°, we would set `angle` to 0.0349 ($2 * 0.0174$). That's all there is to rotating a point. (Rotating about the y and z axes is very similar, and is shown in the program source code.)

Moving

Each object has to have a location in space; we use a 3-D point to hold the object's location, appropriately called `location`. In the program, we will put the box at location 40, 10, 900 and the pyramid at -40, -10, 900. After an object's points have been scaled and rotated about the origin, all of the object's points are moved away from the origin using the following formulas:

```
thePoint.x =
thePoint.x + location.x;

thePoint.y =
thePoint.y + location.y;

thePoint.z =
thePoint.z + location.z;
```

If we did not move the object's points away from the origin, it would be as if the objects were completely surrounding us and not out in the distance. This is because the origin is *our* viewing location.

Converting 3-D To 2-D

We need some way of translating objects so that their 3-Dness looks natural on a 2-D screen. We could just throw away the z coordinate of every point, and plot the x and y coordinates, but that would make the object look flat and perspectiveless. Fortunately, creating the effect of perspective is easy; we use the following formulas with `thePoint`:

```
screenPoint.x =
(distortion * thePoint.x)
/ thePoint.z;

screenPoint.y =
(distortion * thePoint.y)
/ thePoint.z;
```

The value of `distortion` is set at the beginning of the program and is usually not changed. A value of around 1200 for `distortion` makes objects look natural. A value of around 100 makes the objects look grossly distorted, but it may be the effect you need. If you decide to change `distortion`, be willing to experiment with the objects' locations and sizes because what you are effectively doing is changing the field of view for the entire scene, and the objects will appear smaller than may be expected.

Finally, the x component of the calculated `screenPoint` must be adjusted to match the pixel aspect ratio of your IIGS. Since the pixels are not square, we have to use the following formula only on the x coordinate:

```
screenPoint.x =
screenPoint.x * aspectRatio;
```

The constant `aspectRatio` is set to 1.27 for the 320 graphics mode and 2.54 for 640 mode.

Drawing The Objects

Once the object's points have been scaled, rotated, moved, and converted to 2-D, we can now draw the object on the screen one surface at a time. We must take care to draw the surfaces so that the farthest surfaces do not obstruct the frontmost ones. We do this by finding the average z coordinate of the surface's vertices and then

sorting the surfaces by their averaged z coordinate. The sorted surfaces will be in the order of the furthest surface to the closest. When we draw the sorted surfaces in order (furthest to closest), the closest ones will overlap the furthest ones. This is known as the "painter's method" of rendering and works well, but only if no surfaces intersect each other in 3-D space.

We will use QuickDraw's Polygon routine to take care of all the drawing chores. All we need to do is issue an OpenPoly call, define the perimeter of the surface with MoveTo and LineTo calls, call ClosePoly and then finally PaintPoly. Be sure and call KillPoly after the polygon has been drawn.

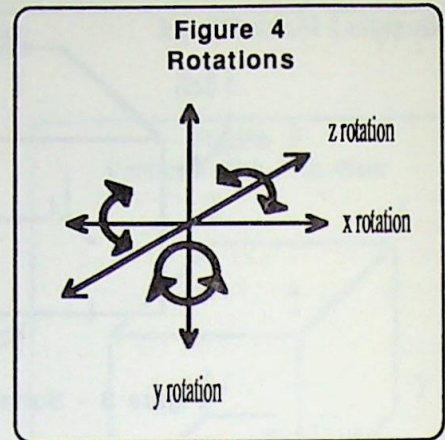
The Demo

When you use the demonstration program, you'll be confronted with two windows: the tool window and the viewing window. The viewing window shows the box and pyramid, and the tool window has nine different arrow controls which change the rotation and scale of the objects; the upper six arrows rotate, and the lower three increase the scale. In the "Special"

pull-down menu are options for resetting the scale or rotation, and moving the objects toward or away from you.

The framework of the program was created entirely with Genesys along with the windows, menus, and icon buttons. There are 23 functions in the program, but only eight deal with our 3-D objects: CreateObjects, TransformObject, ConvertObjectFrom3Dto2D, DrawObject, ResetObjectsRotations, ResetObjectsScale, MoveObjectsCloser, and MoveObjectsFurther. The rest of the functions take care of the desktop environment. CreateObjects sets up the arrays with the appropriate values for the points and surfaces. TransformObject scales, rotates, and moves an object according to the object's scale, rotation, and location variables. ConvertObjectFrom3Dto2D does just what it says, and DrawObject draws an object in the window.

This tutorial is by no means complete because the art and science of 3-D evolves every month to new levels of



sophistication; just keeping up with the latest advances is a part-time job. But feel free to experiment with the program. Create new objects—I designed the program so more objects could be added easily. Be sure and change the MaxObjects, MaxPointsPerObject, MaxSurfacesPerObject, and MaxVerticesPerSurface constants, and follow the examples of the box and pyramid. It's not that hard, although it helps to plan ahead. **GS+**

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A Dark & Stormy Night . . .

It was Thursday, August 8, 1991, about halfway through the summer quarter—my first at Georgia Tech. At around 5 p.m. I was in AppleWorks GS finishing my second theme paper for English 1001. All I had to do was remove a block of unwanted text and voilá, I'd have my assignment finished early and I could leisurely waste the rest of the evening. I felt a certain amount of relief as I selected the text for deletion, but something went dreadfully wrong when I hit the delete key—my system crashed. Now I've been a computer user for almost ten years and I know the importance of saving data periodically, especially if it's a theme paper that I'm making up as I go along! Nevertheless, I hadn't saved a lick of my paper. My relief quickly turned to dread. A single keystroke changed my evening of relaxation into another late night stint in front of my computer. *I've got to write a program to periodically save my work*, I thought to myself. So AutoSave was born! And then quickly forgotten. There were about five other projects in front of this one, so the idea began to gather dust. Then, a few weeks later, someone on Cider City (blatant plug #1), the local BBS, asked if anyone had seen a utility that would automatically save documents in AppleWorks GS. I promptly replied that I could write one if they really wanted it (and would pay \$5). Another user said I should make it shareware and sell it for \$2. Then "Big" Dave Adams said I should sell it to *GS+* Magazine. I decided to take Dave up on his suggestion, and now you, the loyal *GS+* subscriber can now enter data, worry-free, into your favorite IIGS-specific application. So what's the point of all this drivel? If someone hadn't called their local BBS and asked around, you wouldn't have this program now. Support your local Apple BBS and user group and they'll support you! OK, enough of this tirade, on to the good stuff.

The Good Stuff

AutoSave is a New Desk Accessory (NDA) that periodically saves documents on the IIGS desktop by sending a

Command-S to the current application. Since the Apple Human Interface Guidelines specify that Command-S should be the key equivalent of the Save command in all programs that allow the user to save data, it doesn't really matter if we're using AppleWorks GS, EGOed, or any other of the slew of IIGS desktop applications out there! (Of course, there is at least one exception to this rule—GraphicWriter III. GraphicWriter III uses Command-s [lowercase "s"] as the key equivalent for its save command. Command-S [uppercase "S"] activates the Shadow menu item of GraphicWriter III. However, since GraphicWriter III has its own "autosave" feature, this is not that much of a problem.)

AutoSave is about as simple a program as you will find. Upon opening the AutoSave NDA window, you will be confronted with 6 radio buttons and two check boxes. Use the six radio buttons to select the desired time interval between each Command-S. In order to activate AutoSave or to have AutoSave beep the speaker when it sends a Command-S, simply click in the appropriate check box. For those of you who would like key equivalents for these controls, refer to Figure 1.

Look Into My Crystal Ball . . .

O.K., so you are now content and at peace with the world. What more could you ask for in a kinder, gentler desktop? Well for starters, you've got to remember to turn on AutoSave if you want to benefit from it. And I'm sure there are two or three wierdos out there who just couldn't be content unless they could set the interval to 7 minutes and 41 seconds, so a little more flexibility in this area might also be desirable. So, version 2.0 will allow you to "select" an application, and AutoSave will automatically activate itself when that application is run. You'll also be able to set the time interval in minutes and seconds. If anyone else out there has any brilliant ideas for new features, send them in; good ideas are always welcomed! In the mean time, "be ye warned and filled,"

Figure 1

Command-1	1 Minute
Command-2	2 Minutes
Command-4	4 Minutes
Command-5	5 Minutes
Command-8	8 Minutes
Command-0	10 Minutes
Command-B	Beep on AutoSave
Command-A	Activate AutoSave
Command-?	About AutoSave
Command-W	Close AutoSave

secure in the knowledge that your desktop is a safe place for your data.

That's all you need to know to use AutoSave. For installation instructions, see "How To Use The *GS+* Disk" in this issue. If you want to know how AutoSave actually works, read on . . .

Technically Speaking

Technically speaking, there really isn't much to AutoSave. Essentially, we create a handful of controls in a window and let the user play with them at his/her whim. There are a few things I'd like to mention, though.

AutoSave Is Resourceful

First and foremost, AutoSave has and uses resources. All of the controls are defined as resources, and we have our own custom resource, the interval resource. Before we go on, let me just say this, "Resources are our friends." Resources are data—nothing more and nothing less. Yes, Apple has done a lot of the dirty work by defining a bunch of resources, but it's nothing you couldn't either modify or do yourself. So we've created our own special resource for AutoSave. More on that later. Right now let's talk a bit about what we need to do to use the Resource Manager.

First, we have to make sure our resource file is open and we have to make sure that the Resource Manager knows we want to use our resources. AutoSave has four subroutines that handle the Resource

Manager. `ActivateRM` and `DeactivateRM` take care of opening and closing our resource file. `ActivateRM` *must* be called before using our resources. Once it is called, we can leave our resource file open, then call `RestoreRM` before returning control back over to the system. Then we can call `SwitchRM` every time we regain control from the system (namely when the Desk Manager calls `AutoSave's Action` entry point) and then `RestoreRM` before we leave. When we decide to finally wrap it all up and close our resource file, we call `DeactivateRM` to do the job. Clear as mud, eh?

You've Waited Long Enough

Now a few notes about our interval resource. The interval resource is where we store important information such as whether or not `AutoSave` is active. The `AutoSave` interval resource is simply defined as a long constant. The high bit of the high word is defined as the "Active" bit. If it is set, `AutoSave` is active. The last four bits of the high word hold the resource ID of the radio button control that is selected. (The IDs of the radio buttons

are range from 1 to 6, so all IDs can be represented by only four bits.) The high byte of the low word is the number of minutes between `Command-S's` and the low byte of the low word holds the seconds. These definitions translate directly into `ASFlags` (high word of interval resource) and `ASInterval` (low word of interval resource).

A Big Event

Curious as to how we generate an event? Well, it's very simple. The `_PostEvent` tool call allows us to generate mouse and keyboard events. All we have to do is tell it that we want to generate a keydown event, and then tell it which key we wanted to report and the status of the modifier keys! A quick glance at the source code will tell you exactly where on the stack `_PostEvent` wants all of this information.

That's It

I've tried to write my code as cleanly as possible, and almost every line is commented, so it shouldn't be too hard to figure out what all those cryptic little mnemonics are doing. There are two

macros that I use frequently; `wordresult` and `longresult`. They simply push the direct page register onto the stack (twice for `longresult`) in order to create space for a tool call's result. Nothing complicated about that.

If you will skim through the source code, you'll find many more tips and techniques. The source code will show you how to install an event into the Run Queue, how to use the stack as a direct page, and how to make the most of the stack (like leaving tool results there, or pushing tool call inputs onto the stack prematurely in order to cut down on the number of variables you need).

One hint before we close; if you are using `ORCA/Desktop (PRIZM)` to edit `.rez` files, *you must save any changes you made to the .rez file before you re-compile!* Sorry to "shout" like that, but it's one of those little annoyances that 1) really gets to me and 2) took me a day to figure out! **GS+**

Errata

In our review of the Nite Owl Slide-On Battery (*GS+ V3.N1*), we gave an incorrect street address for Nite Owl Productions. The correct address is:

Nite Owl Productions
Slide-On Battery Dept.
5734 Lamar Ave.
Mission, KS 66202-2646

`NoDOS v1.6 (GS+ V3.N1)` contains a small error in the file Info dialog. The File Access switches for Read and Write, were reversed! If you have a resource editor (and know how to use it) you can easily fix the problem by changing the appropriate strings. If you don't have a resource editor (or don't know how to use one) this issue's update to `NoDOS (version 1.7)` will solve the problem for you.

In last issue's "EGOed v1.36" article it was stated that, "... the version of Apple's "Teach" application (which Apple is planning to ship with System Software v6.0), that we saw at KansasFest would not read Macintosh TeachText files ..." This is not entirely true. If you are hooked up to an AppleShare server, the AppleShare FST will display any Macintosh TeachText files as being of type Text. In other words, they will show up on your IIGS as plain ASCII text. Any program that can read ASCII text files should therefore be able to read Macintosh TeachText files on an AppleShare server. However, you will not be able to see any graphics that are in the TeachText file.

If you find an error in *GS+ Magazine* or a bug in one of our programs, we want to fix it! Call us at (615) 870-4960 from 9 a.m. to 6 p.m. Eastern time Monday-Friday to tell us about it. Or write to us at:

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GS+

Believe it or not, we got lots of positive feedback on RAM Namer v1.0 (*GS+* V2.N3, see "What Is RAM Namer?" for more information on RAM Namer.) Although this little Control Panel Device started out as a joke, it seems to have become quite popular with a lot of you out there in *GS+* Land. So, I decided to take some time to add a few of the features that some of you requested.

The original RAM Namer was written with a single RAM disk in mind. However, some of you wrote in to say that you had more than one RAM disk (i.e. the built-in IIGS RAM disk and a PC Transporter) and wanted to be able to set the names of both RAM disks. Others wanted the ability to easily turn RAM Namer on and off. So, I added both of those features.

Using RAM Namer

Before you can use RAM Namer, you have to install it on your startup disk. To install RAM Namer, use the Installer that is supplied on your *GS+* Disk (see "How To Use The *GS+* Disk" for more information). When the Installer is finished, restart your computer with the disk that you installed RAM Namer on. (Make sure that you install RAM Namer on your startup disk, or it won't work!)

Once you have restarted your computer, pull down the Apple menu and select the Control Panel NDA. (If you normally boot into a text-based program like ProSel, you will have to go to a desktop program, like the Finder, to access the Control Panel NDA.) Scroll down the list of Control Panel Devices until you see the RAM Namer icon. Click the mouse on the RAM Namer icon and in a few moments the RAM Namer controls will appear.

The first control is a list showing the *GS/OS* device names of all of the RAM disks that are currently available in your IIGS. If you are like most folks (and your IIGS RAM disk is turned on) there will only be one entry in this list. Below this

list is a line edit control showing the current name of the RAM disk device that you have selected in the list. Below the line edit control is a check box labeled "RAM Namer Active." This check box should be empty—signifying that RAM Namer is not active.

At this point, all you have to do is click the mouse on the RAM disk device you want to rename (if there is only one entry in the list, there isn't much point in clicking on the list, just type the new name into the line edit control). When you do, the current name for the selected RAM disk will be displayed in the line edit control. To change the name, simply type a new name into the line edit control. Note that you do not have to type a ":" or a "/" in front of the name that you type into the line edit control; RAM Namer will supply one if you forget.

However, the name you type in *must* be a valid ProDOS disk name. RAM Namer does not check the name you type in and, if you did not type in a valid name, RAM Namer will let you know by making your IIGS beep at you during the boot process (when the RAM Namer icon appears on the screen). For the rules of naming a ProDOS disk, see Figure 1 on the next page.

Now that you have your new default names typed in, you need to activate RAM Namer. To do this, simply click on the

"RAM Namer Active" check box. When you do, an "x" should appear in the check box. (If you prefer, you can also press Command-A to toggle the "RAM Namer Active" check box.) At this point, it is important to note that RAM Namer does not immediately change the names of your RAM disks. The names will be changed the next time you reboot your IIGS.

Turning RAM Namer Off

If you turn your RAM disk(s) off, don't worry; if RAM Namer can't find a RAM disk during the boot process, it won't try to rename anything. If RAM Namer has changed the names of your RAM disks, you will need to either manually rename them (perhaps using the Finder) or to shut down your IIGS. To make sure RAM Namer leaves your RAM disks alone the next time you reboot, click on the "RAM Namer Active" check box so that the check box becomes clear.

Limitations And Quirks

RAM Namer's biggest limitation is that it works only with RAM disks. RAM Namer will not work with ROM disks (like the one created by the Applied Engineering RAM Keeper). This isn't much of a problem however, as ROM disks are supposed to remember their own names anyway.

RAM Namer does have a few "Quirks." However, most of these are actually quirks in the way that various RAM disks work

What Is RAM Namer?

RAM Namer is a Control Panel Device that allows you to set default names for any RAM disks that you have in your system. Examples of RAM disks include the RAM disk that is built into the IIGS Control Panel and the RAM disk created by Applied Engineering's PC Transporter. (RAM Namer does *not* work with ROM disks, such as the one created by the Applied Engineering RAM Keeper.) Using RAM Namer you could, for example, specify a default name of `:GSplus.Magazine` for the built-in IIGS RAM disk (which would otherwise be called `:RAM5`). RAM Namer will then automatically rename the RAM disk each time you restart your IIGS.

For more information on the RAM disk that is built into the IIGS, consult your IIGS owner's manual. If you don't ever plan on using a RAM disk with your IIGS, don't bother installing RAM Namer at all.

Figure 1 - Rules For Naming A ProDOS Disk

A ProDOS disk name must start with either a slash "/" or a colon ":". After the "/" or ":", the remainder of the name must:

- 1) Be from 1 to 15 characters long.
- 2) Consist only of the numerals 0-9, the letters A-Z, a-z, and the period "." character.
- 3) Start with a letter (A-Z or a-z).

on the IIGS. For example, the RAM disk that is built into the IIGS will retain whatever name it has until the power is turned off or you perform a "self-test" by pressing the Command-option-control-reset key combination. (This self-test also *erases* the IIGS RAM disk, so be careful when using it.)

So, if you rename your RAM Disk "**:Mary.Ann**" and you then reboot, the RAM disk will retain the name "**:Mary.Ann**". You will have to either turn the power off or run the IIGS self-test for the name of the RAM disk to revert back to "**:RAM5**".

Also, if you use RAM Namer to rename your PC Transporter RAM disk, and you then run your PC Transporter software; when you return to GS/OS, the name of the PC Transporter will once again be "**:AERAMPC**". Apparently, the PC Transporter completely resets its RAM disk when it returns to GS/OS.

The only real quirk that RAM Namer itself has is in the way it actually renames RAM disks during boot. If, by some bizarre set of circumstances, the internal ordering of your RAM disk devices changes, the names of the RAM disks will change accordingly.

For instance, suppose you use RAM Namer to set up the following list of devices and default names:

```
.DEV2      :BuiltIn.RAMDisk
.AERAMPC   :That.PCT.Thing
```

Then, if you turn off your built in RAM disk (via the RAM Control Panel Device or text based Control Panel), the list will change to this:

```
.AERAMPC   :BuiltIn.RAMDisk
```

Which means that your PC Transporter RAM disk will be renamed "**:BuiltIn.RAMDisk**" the next time you reboot.

Of course, if you only have one RAM disk, you won't have this problem.

That's all there is to using and living with RAM Namer v2.0. Let me say once again that if you don't use a RAM disk on your IIGS, don't bother installing RAM Namer. If you do use a RAM disk, I hope you enjoy RAM Namer. Now it's time to move on to the . . .

Technical Stuff!

The major difference between RAM Namer v2.0 and the original version is the list control that allows the user to select one of the various RAM devices installed in his or her IIGS.

The code to construct and maintain this list was based on the source code for The New Order NDA (written by Joe Wankerl, GS+ V2.N4). For the most part, the article accompanying that program explains working with the List Manager well enough that anyone should be able to dive right in. However, there is one point that I think needs a bit more explanation.

When adding members to a list, you work with a data structure called a `listRef`. This `listRef` is simply an array of entries describing each item in the list. These entries can be of any length (the length of each entry is defined in the `listMemSize` entry in the list control template), but the standard size (and the size that RAM Namer uses) is 5 bytes. These 5 bytes are split into two fields: `memflag` and `memPtr`. As you might expect, `memPtr` is a reference to the string that will be displayed for this list item. The `memflag` field is made up of

bit flags governing the appearance (selected, unselected, etc.) and attributes of the list item. While bits 6 and 7 are well documented (they control the appearance of the item in the list) there are two other bit flags in this field that are *undocumented* anywhere—except in Joe's article! Bits 0 and 1 of the `memflag` field describe the type of reference that is stored in the `memPtr` field. To use the table that Joe used, bits 0 and 1 of the `memflag` field tell the List Manager the following things:

```
00 = memPtr is a pointer to a string
01 = memPtr is a handle to a string
10 = memPtr is a resource ID of a string
11 = invalid value
```

Other Stuff

In addition to being a good example of how to build a list, RAM Namer is a good example of how to build a *device list*. The function `BuildRAMList` (in the source file `rn.cc`) shows how to use the `DInfo` call to hunt down and identify devices and to then add them to a list. The type of device that RAM Namer looks for is defined in the `rndef.h` source file. For a laugh, change RAM Namer to list and rename your 3.5-inch drives or your hard disks. (This makes a great April Fools Day joke—if you don't mind being shot at.)

Other highlights of the RAM Namer source code include yanking text out of and stuffing text into line edit items and loading, deleting and adding resources. It's also a pretty decent example of how to write a Control Panel Device.

If you have any other suggestions for future versions of RAM Namer, let me know!

GS+

With this issue of *GS+* Magazine, EGOed is two years old! (New readers, be sure to read the "What Is EGOed?" sidebar for introductory information on EGOed.) So, it's only appropriate that this version of EGOed contain a feature that people have been asking for since EGOed v1.0 first appeared way back in *GS+* V1.N2.

Lost And Found

EGOed v1.37 has two new options in the Edit menu, "Find..." and "Find Next". These do exactly what you are hoping they will do. They allow you to find text (and other things) in the document that you are editing with EGOed.

Using Find... & Find Next

To use the Find option, you must first have some text in the EGOed window. When you do, select Find from the EGOed Edit menu or press Command-F. The Find window will then appear. Simply type in the text you wish to find and click the mouse on the Find button or press the Enter key on the keypad (do *not* press the return key—more on this below). EGOed will then search for the text you have specified beginning from the current position of the text insertion point. If EGOed finds the text, the Find window will disappear and the found text will be highlighted. If EGOed can not find the text, it will display a dialog telling you that the text was not found. To cancel the

Find operation, click on the Cancel button or press the escape key.

To find the next occurrence of the text, simply select Find Next from the EGOed Edit menu or press Command-G. EGOed will then search for the next occurrence of the text that you specified in the Find window. If the text is not found, EGOed will display a dialog telling you that it could not find the text, otherwise, EGOed will highlight the text that it found.

Special Features

When you are entering text for EGOed to find, you are actually typing into a control exactly like the one EGOed uses to display and edit your documents in (i.e. a TextEdit control). So, if you can type it into the main EGOed window, you can type it into the Find window, and you can have EGOed try to find it! So, if you want to search for a tab character, just pull up the Find window, press the tab key and click the Find button. EGOed can also search for carriage returns (just press the return key in the Find window—this is why you use the *enter* key for the Find button), sticky spaces and any other special symbol you might want to find!

When you click on the Find button, EGOed saves the text that you have specified. So, the next time you bring up EGOed, the last bit of text you searched for will still be there. If you really want it to, EGOed can search for strings up to 64K in length—just remember that your 64K string will be stored in EGOed's resource file when you are done!

What It Isn't

The Find feature of EGOed v1.37 is an extremely simple (and fairly slow) text search utility. It's not even case sensitive! I have plans for a much more extensive Find & Replace utility which I hope to have finished soon (being out of the country for a week, I was lucky to get this much done)! In the mean time, it's much better than searching for things "by hand," and the ability to search for carriage returns, tabs, sticky spaces, and other

special characters makes it incredibly useful. If you just can't wait for a "Replace" utility, simply use Find and Find Next in conjunction with Copy and Paste. It works quite well.

That's all for this time. If you want technical information on this version of EGOed, read on. If not, you can skip over to "How To Use The *GS+* Disk" for information on installing and using EGOed.

Techie, Techie!

The code to implement the Find and Find Next functions is in the source file `Find.h`. To get to the EGOed source code, you should use *GS-ShrinkIt* v1.04 or later to extract it from the file `EGOed.SRC.SHK` which is in the EGOed folder on your *GS+* Disk. (Note that you do *not* need the source code if all you want to do is *use* EGOed!)

EGOed has gotten so big, that it has become necessary to start compiling bits of it separately and then linking it all together. So, there are now three different make files included with the EGOed source code. The first, `makepar` compiles everything except the `Find.h` file. The second, `makef` compiles the `Find.h` file and links it with the file created by `makepar`. The third, `make` recompiles and links everything. While it is true that splitting things up like this makes for faster testing, the main reason I did this is that when I compiled everything all at once, the resulting EGOed would crash the computer during boot. Break the source files up and compile them separately and everything works fine! (Except that the resulting file is about 1K larger.) In upcoming versions of EGOed, I'll probably be splitting the compilation up even more.

Braindead

Earlier, I mentioned that the find algorithm I used was a tad slow. Actually, it's also quite braindead. It's what textbooks call "The Obvious Algorithm" or the "Brute Force Find." Again, my only defense is

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 v1.37, you *must* install it on a IIGS System Software v5.0.2 (or later) startup disk with at least 43K of free space. For more information on installing and using EGOed, see "How To Use The *GS+* Disk."

that I was short on time for this issue. But hey, it works! I'll try and speed it up in the next version.

However, there are a few neat tricks underlying the user interface on the Find option. First and foremost was the use of a TextEdit control for the user to type the search text into. Not only does this allow the user to search for just about any character in the IIGS universe, it also gives us a very neat way to store and retrieve our search text. By setting the `bufferDescriptor` parameter of the `TEGetText` call to a value of `0x12` we can have the TextEdit tool set extract the text for us and put it directly into a `ClInputString` resource! Storing the text in this way has several advantages. First of all, the string is stored in the resource fork. This means that we can get at it whenever we want simply by using Resource Manager calls. Second, the length of the string (which can be up to 64K) is stored along with the string. This information is needed by the Find function. If we had stored the string in an

`rText` resource, the length of the search text would be unlimited (as opposed to a measly 64K), but the length of the string would have to be saved separately. By having TextEdit save the string for us, all we have to do is use a `LoadResource` call to retrieve the string from inside the Find function. We don't have to worry about allocating memory or any of that other messy stuff, the Resource Manager handles it all for us.

Another Problem

Even though the Find window looks like a dialog, it's actually a window created with the `NewWindow2` call. At this point in time, the IIGS System Software seems to get a bit, um, cranky, if an NDA tries to have two windows open at once. System 6 is supposed to address this problem, but until then, opening up a second window (as opposed to a dialog) was the only way I could think of to get the TextEdit control up there for the user to type text into. (The Dialog Manager does not yet support the use of extended controls such as TextEdit controls. Hopefully this will

change someday.) The routine that makes this possible is the `FakerModalDialog` function. This function was originally written by Joe for use in Autopilot, but it had to be modified a bit to be used in EGOed. Basically, I had to replace the call to `TaskMaster` with a call to `TaskMasterDA` and I had to clear some of the event mask bits. Why? Well, having certain bits set would sometimes cause System Loader errors when quitting from an application back to the launching program. The version of `FakerModalDialog` that is in EGOed v1.37 seems to clear up this problem. (It should be noted that this is a problem in EGOed and other NDAs only! This is not a problem in Autopilot!)

That's about all there is to tell "techno-weenie-wise" for this version of EGOed. If you have any questions, or ideas for enhancements, send them in! Next time I hope to bring you the aforementioned Find & Replace utility and a few other surprises. I might even change the version number to 1.4! **GS+**

NoDOS v1.7

NoDOS is now up to version 1.7. The differences between v1.6 and v1.7 are very minor: the default prompting for deleting files is now set to prompt on all files, and a bug in the Info procedure has been fixed. In v1.6, if the read bit was set, the write checkbox was checked, and vice versa. Oops! Version 1.7 fixes this. (It was actually a case of mistaken identity—the code to check the read and write bits was correct, but it was checking the wrong control.) Please don't forget that if you want to make changes to NoDOS and recompile (or simply recompile without any changes) you must have the OS Library installed in your `2/Libraries` folder. You can use the supplied Installer script to correctly install it. (See "How To Use The *GS+* Disk" for more information.)

NoDOS is a great little utility to have hanging around under your Apple menu. You never know when you might need it. I'm always glad it's there for me, I hope it can make your life a little easier as well.

OS Library Update

OS Library is a collection of routines designed to make interacting with some commonly used *GS/OS* and Standard File calls easier. OS Library (OSLib) can be used from any language that supports linking to standard libraries. However, some additional work may be required to correctly access OSLib routines if the language that you use can't call libraries that follow the Toolbox parameter passing protocol.

Changes To OS Library

Since NoDOS relies on the OS Library (see *GS+ V2.N4* for complete information on OS Library) to handle all of its deleting chores, it stands to reason that the delete routine in the OS Library has changed. And so it has. A very simple change, in fact. The change is in the first two lines of the `Delete.ASM` file. Instead of storing a zero in the default prompting type field (prompt on locked files) a one is stored (prompt on all files.)

By Josef W. Wankerl

Detailed information about using the OS Library in your own programs is on your *GS+* Disk in the `OSLibrary` folder. If you want to program using the OS Library, you should definitely check out that file.

That's all for this update to NoDOS. If you have any suggestions for future versions, let us know! **GS+**

What Is NoDOS?

NoDOS is a New Desk Accessory (NDA) that allows you to delete, rename and get or set info on files. For example, you can use NoDOS to change the type of a file or to move a file from one folder to another on the same disk. For complete documentation on NoDOS, be sure to read the file `NoDOS.Docs` which is on your *GS+* Disk in the NoDOS folder.

Rumors, Wishes & Blatant Lies

By Prof. G. S. Gumby

All Quiet . . .

Is it just me, or has anyone else noticed that Vitesse hasn't put out any new IIGS software in a while. Not even an update! Of course, they were working on an outline fonts package (see "Interview: Jim Carson Of Vitesse" in *GS+* V2.N3), but apparently the project was shelved when they got wind of WestCode's "Pointless" project. (That makes for a weird sentence, doesn't it?) Well, fear not! Rumor has it that they have hired a certain Burger-dude to update all of the Salvation utilities for System 6 compatibility. However, it is unclear what plans, if any, the company has for *new* IIGS products.

Waiting For 6

It seems like four out of every five calls we get here at *MacWeak* contain the question, "When is System 6 gonna be out?" Well, the last word I have is that System 6 will be coming out sometime at the beginning of January. Beta testers are reporting that almost all of the bugs have been squashed, but there are still a few nasty ones remaining to be worked out.

Until then, most IIGS developers are working on new products (or updates) that will take advantage of all that System 6 has to offer. However, the local slave-driver insists on developing stuff that will work under System Software v5.04. Imagine, developing and releasing new IIGS software that will work with *today's* System Software! Who does this pinhead think he is?

What Really Happened?

So, what *really* happened to *8/16-Central*? Sorry, I'm not allowed to tell. Nyah! Nyah!

However, I can tell you that you shouldn't worry about the other Resource-Central publications. They are still going strong and should be around for a long time to come!

A Living Heck!

So you think *your* life is rough! Ha! Imagine having to sit through 5.3 zillion

honeymoon pictures featuring Diz in a bathing suit. Ick! After being confined to his office for two years he was whiter than Michael Jackson (not by much though) and looked like he had joined an international inner-tube smuggling ring.

ShareWhere?

"Support shareware." Everybody says it, but almost no one does it. Case in point is a shareware package of utilities that we released a couple of months ago. (The "Utilities" package which was written by our own Joe Wankerl.) Several people online told us that they really liked them and that the shareware fees were on their way. To date, only one person has actually paid the shareware fee. Don't you wish more folks would support IIGS shareware? We sure do.

More Wishes

While I'm on the subject of wishes. Let me just throw out our current (but by no means complete!) IIGS wish list:

- A IIGS relational database
- A IIGS spreadsheet with macros and 3-D spreadsheets
- A IIGS version of Quicken (or any other IIGS-specific business software)
- IIGS tax preparation software
- More CD-ROM software for the IIGS
- We *still* want a full page monitor! (We would even settle for monochrome!)
- An Apple dealer that actually knows something about the IIGS

Tips

There really aren't that many rumors out there right now, so, to fill some space, I thought I would share the following tip with you. (I don't get paid for tips—just rumors—so keep quiet about this!)

When you are confronted with a Standard File "Save As" dialog (like the one that

comes up in EGOed when you select the "Save As..." menu item), you can use the standard cut, copy and paste keystrokes (Command-X, Command-C and Command-V, respectively) to manipulate the filename shown in the line edit box. Give it a try!

Oh Yeah . . .

There was *one* really good rumor that came in this month . . . It seems that someone has made Apple Computer, Inc. a *very* serious offer for the rights to the Apple II. And, according to our source, Apple is actually considering it!

Would this be a good thing? I don't know . . . while another company would definitely *promote* the II better, I can't think of *any* company that has the developer technical support or research and development resources that Apple has. Of course, none of that matters if everyone thinks the machine is discontinued, does it? What a mess!

That's All!

Not enough for you? Well then why don't you send in a rumor or two? Send your Apple IIGS rumors, wishes and blatant lies to us via:

America Online, Delphi:
GSPlusDiz

Genie:
JWankerl

InterNet/BitNet:
JWANKERL@UTCVM.BITNET

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

If we use any of your items, we'll either send you a snazzy new *GS+* T-shirt or extend your subscription for one issue! Be sure to tell us whether you want the T-shirt or the extra issue. If you want the T-shirt, don't forget to include your T-shirt size. **GS+**

How To Use The 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) 870-4960. 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 v5.0.2 or later (preferably v5.0.4), and then 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.

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 v5.02 or later. (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.)

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

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

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

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

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

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

Making Room

If you do not have a hard drive, you will probably have to remove some files from your startup disk to make room for the New Desk Accessories, Control Panel Devices, and other system files that come on the GS+ Disk. Towards that end, we have prepared the following list of "expendable" files that you can "safely" remove from your 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.Disk:! Always work on a backup copy!

The standard :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.

Small Talk

Beginning with GS+ V2.N6, we began using GS-ShrinkIt to compress the *source code* on the GS+ Disk. To extract the

source code from their archives, you will need to use GS-ShrinkIt v1.0.4 or later. If you do not have GS-ShrinkIt, check with your local user group or give us a call here at *GS+* Magazine and we will help you locate a copy.

GS-ShrinkIt is not *required to run any of the programs on the GS+ Disk!* It is only required if you want to look at the source code that is used to create the programs!

What's On The Disk

There are 15 items in the root directory of this issue's disk. They are:

a.Read.Me

A lot can happen from the time we send this magazine to the printer and the time we get ready to mail them out. If anything does happen, we will put everything we can find out about it in this file. This is a plain text file.

AutoSave

This folder contains AutoSave v1.0.

AutoSave must be installed on a startup disk with at least 6K free. See the "AutoSave" article in this issue for more information on using AutoSave.

Demo.3D

This folder contains the 3-D demonstration program described in the "Introduction To 3-D Graphics" article. This program can be run directly from your backup copy of the *GS+* Disk. From the Finder, simply open the **Demo.3D** folder and then double-click on the **Demo.3D** file that is inside the folder. This folder also contains the ORCA/C source code (**Demo.3D.cc**) required to recreate the **Demo.3D** program.

EGOed

This folder contains EGOed v1.37. EGOed is a New Desk Accessory text editor that allows you to read and print ASCII, AppleWorks (Classic and GS) and Teach files.

This folder also contains complete documentation for EGOed v1.37 in the file

EGOed.Docs. This documentation file is a plain ASCII text file.

EGOed must be installed on a startup disk with at least 43K free.

Event.Manager

This folder contains the Event Manager demonstration program described in the "Working With The Toolbox" article. This program can be run directly from your backup copy of the *GS+* Disk. From the Finder, simply open the **Event.Manager** folder and then double-click on the **Event** file. This folder also contains the ORCA/Pascal source code (**Event.PAS**) required to recreate the Event program.

Feedback

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

(continued on next page...)

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+ V3N2 Disk Offer
c/o EGO Systems
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. ET, to bill it to your MasterCard or VISA.

Tennessee residents add 7.25% sales tax.
Prices include \$1.50 for First-Class delivery to the U.S., air mail to Canada and Mexico, or surface 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!

Glossary

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

Icons

This folder contains the icons discussed in the "Icons" article.

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.

NoDOS

This folder contains NoDOS v1.7. This folder also contains complete documentation for NoDOS v1.7 in the file **NoDOS.Docs**. This documentation file is a plain ASCII text file, you may use EGOed to view it. NoDOS must be installed on a startup disk with at least 22K free.

OSLibrary

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

RAM.Namer

This folder contains the RAM Namer Control Panel Device and its ORCA/C source code. RAM Namer must be installed on a startup disk with at least 9K free. See the "RAM Namer v2.0" article in this issue for more information on using RAM Namer.

Problem.Form

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

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.

Writers.Guide

This 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 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+**

Icons

Offer to give people t-shirts and magazines and what happens? They send in icons! However, since we've got so many people sending us icons, I'm going to have to modify the prize giveaway procedure just a bit. Of all the icons we get for each issue, I will pick a single icon as "best" and give its creator a *GS+* t-shirt or, if they forget to include their t-shirt size, I'll add an issue to their subscription. (If we awarded prizes to everyone that was sending in icons we would—ahem—lose our shirt.)

All of the icon files described in this article are on your *GS+* Disk in the **Icons** folder. For the most part, these icons aren't intended to be used with any one program. So, you will have to have an *icon editor* to look at them and modify them for your own use. Two of the more popular icon editors are *IconEd* by Paul Elseth, and *DicEd* by Dave Lyons. Both of these are shareware programs that you can obtain from just about any online service, shareware clearing-house or your local user group. If you can't find either of these icon editors, give me a call at (615) 870-4960 and I'll try to help you locate a copy.

Second Runner Up

Krishna Sadasivam of Knoxville, Tennessee (just up the road from Chattanooga), sent us a few nifty new icons. My two favorites are on your *GS+* Disk in the file **KS.Icons**. The first is a replacement for the Finder's trash can icon. It features a very famous grouch (no, it isn't a portrait of me). The second is an icon for Brøderbund's music program, Jam Session.

First Runner Up

Dave Johnson of Arleta, California didn't just send us a bunch of icons, he sent us a bunch of icons and a HyperStudio stack to explain them all! Unfortunately, the stack was a bit too big to include on the *GS+* Disk, but I was able to pick a few of Dave's icons to share with you. All of these icons are in the file **DJ.Icons**. Most of these icons are for specific applications: ProTerm, AppleWriter, Nexus, Columns GS, Pipe Dream and Land of Y's. But, the last icon is intended to help you identify all of your Publish It! fonts. This icon displays a large "7" (the file type for Publish It! fonts is \$F7) and "PI! FONT" for each Publish It! font you have, making

By Steven W. Disbrow

it easy to identify them among all of your other files. A neat idea, Dave!

And Our First Winner Is...

Alex Pomeranz of California didn't send in as *many* icons as these other folks, but the icons he did send in are certainly eye-opening! Four of Alex's icons are in the file **AP.Icons**. These icons include a grey-haired girl in a green bikini (ya' gotta love those 640-mode colors!), a rather large pumpkin, a portrait of my Insurance Agent, and an absolutely beautiful castle. The castle is actually the icon that won Alex this issue's prize. Alex writes that it took him 5 hours to do this icon (using Paul Elseth's shareware program, IconEd.) Since Alex forgot to include his t-shirt size, I'll be extending his subscription for an issue. Thanks for the great icons Alex!

That's it for this issue. Don't forget that we are now looking for HyperCard IIGS and HyperStudio icons as well as Finder icons! So get busy and start sending in those icons (and don't forget to tell us your t-shirt size!) **GS+**

Octo-RAM Memory Board

Retail price: 0K - \$120 (SIMM prices vary from dealer to dealer, shop around.)

T. B. C. Consulting, Repair & Resale
P. O. Box 378
Cortland, IL 60112
(815) 758-5040

Reviewed by Steven W. Disbrow

What? Another Memory Board?

If there is one area of the IIGS market place that isn't hurting, it's the memory board market. There are probably a dozen or more IIGS memory cards on the market. For the most part, they are all depressingly similar, with only a few exceptions. The Octo-RAM is one of the more exciting exceptions.

What's Different

To my knowledge, the Octo-RAM is the only IIGS memory board that can hold up to 8MB all by itself. Oh, sure, you can piggyback another 4MB card onto the C. V. Tech RAM board and some of the Applied Engineering boards can go up to 8MB with an optional "expander," but the Octo-RAM is the only board that can handle 8MB right out of its little

protective baggie. Since 8MB is all the IIGS was designed to handle, all you will ever need is the one Octo-RAM board.

SIMM-sational

Another thing that's different about the Octo-RAM board is that it uses Single Inline Memory Modules (SIMMs) for its memory expansion. There are a couple of other IIGS memory boards that use SIMMs (the GS Sauce card by Harris Laboratories is one such card—see review in *GS+ V2.N1*), but those cards can only hold up to 4MB, and they aren't that much less expensive than the Octo-RAM.

There are several advantages to using SIMMs for memory expansion. First of all, a SIMM is much easier to install than a set of 8 RAM chips. (A SIMM is actually a set of 8 or 9 RAM chips all attached to a single circuit board). Just plug in the single SIMM board and off you go. There is no need to worry about bent or broken pins or your dog mistaking it for a kibble. Of course, there is at least one disadvantage to using SIMMs; if a single chip goes bad on a SIMM, you have to toss the entire SIMM! However, SIMMs are fairly cheap these days . . . which brings us to the next advantage Octo-RAM has.

There are two basic sizes of SIMMs in the world today: 256K SIMMs and 1MB SIMMs. There are also two basic *kinds* of SIMMs in the world today: the kind used by the Macintosh (8-chip SIMMs) and the kind used in PC compatibles (9-chip SIMMs). The Octo-RAM can use both sizes and kinds. (It may be that other SIMM-based IIGS memory boards can use both kinds of SIMMs, but I don't know for sure.) This means that you can shop for the best price on SIMMs from the suppliers in two *extremely* cut-throat markets. Using 256K SIMMs you can expand the memory on the Octo-RAM up to 2MB. Using the 1MB SIMMs, you can expand the Octo-RAM up to its full 8MB potential.

Problems

The main problem with the Octo-RAM is that the original manufacturer (MDIdeas) is out of business. This isn't too much of a problem though, as the manufacture and sale of the Octo-RAM is now being handled by its creator, Peter Baum and his partner Dan Halverson, of T. B. C. Consulting.

The problem that you are most likely to encounter with the Octo-RAM is that it only supports DMA on the Apple High

Speed SCSI card with 4MB or less installed on the Octo-RAM.

Install more RAM than that, and you will have to disable the DMA function of your Apple High Speed SCSI card. The Ram-FAST card is compatible up to the full 8MB. (Yes, I'm starting to wish that I had bought a Ram-FAST

too—although Dan Halverson at T. C. B. Consulting tells me that if you use eight 256K SIMMs [for a



total of 2MB], DMA will not work properly with either SCSI card.)

The last problem is more of a nuisance than an actual problem. Whenever you change the memory configuration of the Octo-RAM, you have to reset some jumpers to let the card know the new setup. In real life of course, you won't be changing the memory configuration on the card that often. When you do have to do it though, you'll find some very nice diagrams in the Octo-RAM manual that make this operation fairly easy.

Did I Forget Something?

Oh yes, the Octo-RAM also comes with a diagnostic program that you can use to test all of the SIMMs on your memory card. The program is ProDOS 8 based, but it does a good job, so I won't hold that against it.

The manual is seven pages long and quite well done. A compatibility list is included in the manual and basically tells you everything that I just did about the DMA problems. Other sections in the manual tell you how to install and remove

SIMMs, how to run the diagnostic software and what to do if something goes wrong.

Conclusion

I have had my Octo-RAM board for about two months now, and I must say that I'm very impressed and pleased with it. With the exception of the Apple High Speed SCSI card problem, it is, in my opinion, the most flexible, expandable and cost-effective IIGS memory board product on the market. **GS+**

DataLink II EXPRESS

Typical mail-order price: \$219.95

Applied Engineering
P. O. Box 5100
Carrollton, TX 75011
(214) 241-6060

Reviewed by Josef W. Wankerl

What? Another Modem?

If there is one area of the computer market place in general that isn't hurting, it's the modem and FAX modem market. There are more modems on the market than I care to count. Sure, they come in different speeds, colors, sizes, types (internal or external), and they have different options... but which ones will work for sure on the IIGS? The answer is: the modems that Applied Engineering makes—specifically the DataLink II EXPRESS.

A Tale Of Dollars And Surprises

Way back in *GS+* V1.N5, I got (and reviewed) my first modem: a DataLink Express. I couldn't have been happier with it. However, I really wanted to get the FAX option. So, I scrimped and saved (all the way to *GS+* V3.N2—this modem is not cheap) until I had enough money to get a new modem with the FAX software. I figured it'd be easier for me to buy a new modem than to send my current modem in to Applied Engineering and have them put it on a shelf for a month and then return it to me unchanged. Imagine my surprise when I got the new modem out of the box and it was a

DataLink II! What's the difference between a DataLink and a DataLink II, you ask?

Features

The DataLink II EXPRESS (a 2400 baud modem) supports both the MNP-5 and the V.42BIS data compression as well as error detection and correction schemes. With MNP-5, data transfers can take place at a maximum of 4800 baud, and with V.42BIS, the maximum transfer rate is boosted to 9600 baud! These maximum transfer rates are theoretical maximums. The data is still travelling over the phone line at 2400 baud, but the compression scheme allows more data to be transferred in a shorter time. So the transfer speed is directly related to how well the data travelling across the phone line can be compressed. Error detection and correction means that all data transferred will always arrive correctly. I revel in the fact that an ignorant visitor in my apartment can pick up the phone when I'm online and my connection stays intact and I don't get any line noise. With error detection and correction, file transfer protocols are redundant, since all they do is send data and check for errors. To get maximum file transfer performance with an error checking and correcting modem, a streaming protocol such as YModem-G should be used. ZModem is also a good low-overhead protocol to use. The XModem and KERMIT file transfer protocols have lots of overhead, and while they will eventually get the job done, YModem-G and ZModem will be finished a long time before XModem and KERMIT are.

FAX

The main reason I got my DataLink II EXPRESS was for the FAX option. I wanted to be able to FAX my favorite songs into the local radio station from my computer. With AE's FAX software, it's a breeze. First, I set up my modem and cover page information in a Control Panel Device (CDev) that AE supplies, then I select the AEFaxDriver and the Modem Port from the direct connect printer control panel. I then compose my message with EGOed: "Please play a Rush song."

Then I choose Page Setup... from the EGOed File menu and turn condensed print on. Then I choose the Print... option from the EGOed File menu. I select the local radio station's entry from the phone book list, and then I click on the OK button to send the FAX on its way. Sending a FAX is as easy as printing!

FAX Features

The neatest feature of the FAX software is the phone book. The phone book is a list of people and/or places that you FAX often. A phone book entry can be a single person, or a group of people. When you send the FAX to a group of people, each individual in the list is called. If there is a busy signal or bad connection, you have the option to reschedule the send through the "AE FAX Log" New Desk Accessory (NDA).

The AE FAX Log NDA contains a list of all the FAXes that you have sent. You can choose to resend any of the items in the list. This means if you sent someone a FAX three days ago and you want to

send it again, you don't have to reprint it. Just open the AE FAX Log NDA and reschedule it. Of course, if the list gets too big, you can delete some of the items.

When you reschedule a FAX, or when you are first printing a FAX, you can choose *when* the FAX will be sent. That's right, you can specify a time. If your favorite time to FAX is at 1:00 a.m., then set that as the send time. The FAX software will wait until 1:00 and then dial up all the people that you want to send FAXes to.

FAXes can also be sent in the background. This means that you can work on other projects while the FAX is being sent. Most printing requires all the IIGS resources, so you just sit and watch a dialog box until printing is finished. The AE FAX software actually lets you work while it sends. This is a *very* nice feature.

Still The Same

All the great features of the original DataLink Express are present in the DataLink II. Display lights to monitor the modem status such as power, transmitting data, receiving data, carrier detected, auto answer on, data transmission speed, terminal is ready, modem is ready, modem has the phone line off the hook (in use), and line engage (someone is using the phone).

The manuals for the DataLink II are fairly well written in that they get you up and running. But, the manual doesn't really explain every feature of the modem clearly. It assumes that you have used a modem before, and it only gives a quick run down on the Hayes AT command set. A chapter on how these options can be used to enhance the use of the modem is blatantly missing from the documentation.

Some AT commands are even missing from the manual. For example, the AT\S command shows the modem status. One of the returned status lines is a Leased Line indicator which is controlled by the AT&L command. The manual doesn't even recognize that such a command exists.

But It's So Expensive

True, the DataLink II EXPRESS is expensive, and the FAX is *send-only* (you can't receive a FAX at your IIGS). But, while other, cheaper, modems advertise send FAX capability, only the AE modems come with FAX software that will work on the IIGS. And, if you want truly exceptional speeds and reliability on your IIGS with a 2400 baud modem, the DataLink II EXPRESS can't be beat. **GS+**

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Talking First Words

Program by Dylan Gladstone

Retail price: \$49 (\$59 with back-up disk)

Typical mail-order price: \$38

Not copy protected

768K Required

Orange Cherry Software
Box 390 Westchester Avenue
Pound Ridge, New York 10576-0390
(800) 672-6002

We've Been Here Before

Talking First Words is another program in what is becoming a rather large group of Apple IIGS educational offerings marketed by Orange Cherry Software under the Talking Schoolhouse name. The series has approximately 22 programs marketed for both school and home education. Orange Cherry also produces many other programs targeted at the educational market for the Apple IIGS which are not part of the Talking Schoolhouse series.

Talking First Words contains five learning activities on two 3.5-inch 800K disks. The program will run on either a ROM 01 or ROM 03 IIGS, is compatible with System Software v5.04, is hard drive installable, and is not copy protected.

Talking First Words is recommended by Orange Cherry for children ages 4 to 7 years old. This recommendation appears appropriate based on the content.

Talking First Words comes with a 90-day free replacement for defective disks, and lifetime replacement for a \$10.00 fee—even if you damage the disks yourself. This is a great selling point for software that is intended for use by young children.

The manual that accompanies the program is short but useful. It does contain several misstatements and mischaracterizations, such as calling a "quit" button a "pull-down menu," and giving conflicting recommended age groups for the use of the software. However, it

adequately explains all of the features of the program, includes hard drive installation instructions, and also offers ideas for additional learning activities both in conjunction with the operation of the software and away from the computer.

What Does It Do?

Talking First Words contains five learning activities named:

- Action Blocks
- Noun Board
- Word Machine
- What am I?
- Sentence Fun

Each of these activities is selected from a main menu by clicking on the activity name.

In Action Blocks, children are presented with a screen picturing six blocks each containing a verb such as "swim" or "fly." If the child clicks on one of the blocks, the program recites the word in a human voice and presents a small, short animation depicting the word. For example, clicking on "jump" brings up a small picture of a gorilla jumping. There is a "next" button at the top of the screen which takes the child to one of two additional screens of blocks, for a total of 18 blocks (words) in the Action Blocks module.

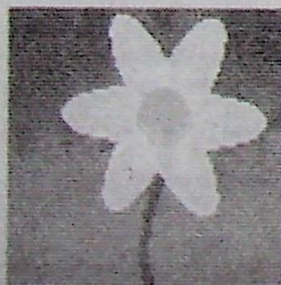
Noun Board consists of a screen of 16 nouns (the "Board"). Examples of these words include ring, fan, man, top, and dot. When the child clicks on a word, the program recites the word in a human voice and then displays a small picture of the named object. A "next" button takes the child to another screen of 16 more nouns, giving this module a total of 32 selections.

Word Machine is a game in which the program shows the child the last two letters of a three letter noun while reciting and picturing the word on the screen. The child must then make the appropriate keyboard selection to insert the missing first letter of the word. The child only has one chance at getting the answer because the program moves on to the next word whether the answer selected is right or wrong. The program keeps a running total of correct answers displayed on the screen throughout the activity. After 10 words, the activity stops. All of the words and pictures used in this module appear to be from the Noun Board activity.

The "What am I?" activity presents the child with a screen with two statements, one question, and two pictures. For example:

"I am Tall. I am green. What am I?"

I am tall.
I am green.
What am I?



No, you are not Diz the morning after a late night out! You are either the tree or the flower pictured with the sentences, Diz is simply not one of the choices.

The child is supposed to click on the picture which is described in the two statements. Unlimited wrong answers are allowed in this module and are greeted with "Please try again" spoken by the human voice.

After five different problems, the child is returned to the main menu. By the way, the five queries that the child gets the first time through this activity are also the only five screens for the module, and they are repeated in order each time the module is used.

Sentence Fun presents the child with five sentences on the screen, each accompanied by a small picture relating to the sentence. Each sentence contains two or three choices for the last word in the sentence, and the child must select the choice which most accurately describes the picture. For example:

"The cow is sad/happy."

The child must look at the small picture of the cow, decide if this is a happy or sad cow, and click on the proper answer. Clicking on the wrong answer any number of times elicits the "Please try again" statement.

The five sentences presented on the first screen are the only five sentences contained in the activity.

My Thoughts

Talking First Words contains nice graphics and sound. The interface is appropriate for the age group, however there should be oral instructions for the young child, as well as more consistency in the written instructions that do appear.

For example, only one of the five modules tells the user to click on ESC to return to the main menu, even though it works at all times (a big improvement over some other Talking Schoolhouse programs).

Along the same lines, many modules have no instructions telling the child what to do. This isn't too terrible in this point and click

world we've created, but the ones that do have instructions have them in writing.

A child that doesn't know the word "fan" is unlikely to be able to read and understand instructions telling him/her to click on a noun to see a picture. Oral instructions for this age group would be a lot better.

Orange Cherry programs are generally slow to load and operate; Talking First Words is no exception. Booting from a stock one drive ROM 03 IIGS, it takes nearly two minutes to get to the main menu. This time could be considerably shortened without the animations contained in the introductory sequences as the program loads however, it is well over one minute from booting before these animations begin.

Booting from a ROM 01 IIGS equipped with a 7 MHz TransWarp, the loading time to the main menu is reduced to just under one minute and 30 seconds.

Launching from a hard drive shortens both these times considerably. Booting from a ROM 01 IIGS equipped with a 7 MHz TransWarp and a TMS Pro 105 hard drive, the loading time from the System Software v5.04 Finder is only 25 seconds.

The overall operation of the program is also slow. Getting from the main menu to the Noun Board activity on the stock ROM 03 IIGS takes over 20 seconds.

Two short programming notes, though I don't know if Orange Cherry had a choice with the first one, which is the way in which the modules are placed on the two disks. Normally, I would expect that on a two disk program, one disk would be a boot disk, and the other disk would then be placed in the drive to stay while the program is operating. However, with Talking First Words, on a one-drive system the first activity, Action Blocks, is on the Boot Disk. The rest of the activities are on the Program Disk. When the child selects any activity other than Action Blocks, the program prompts the child for "Disk B" if the Program Disk is not in the drive. Selecting Action Blocks when the Program disk is in the drive

brings up a dialogue box prompting the child to place "Disk A" in the drive.

My second programming comment concerns the Word Machine activity and to a lesser extent, three of the other modules. In Word Machine, after completing the first set of 10 questions, the only way to answer more questions is to leave the module, go back to the main menu, select Word Machine again from the main menu, and then start over. The other modules also have no "start over" option or button, or any way to get back to the beginning of the particular module without first going back to the main menu. While this would normally be just annoying, considering the slow operation of this software when used from the 3.5-inch disks, it amounts to a real waste of time.

Do I Like It?

I do like the program, however there just isn't a lot here for the money.

The interface and the overall operation of the program are generally smooth and intuitive, and both the idea behind the program and the presentation are pretty good. In addition, many of the problems that I have found objectionable in the past with Orange Cherry software have been eliminated.

However, the program content is weak and limited. The first three modules use a total of 50 words (that's a buck a word at retail), and the last two modules are so short and shallow that they contribute very little to the program, particularly after the first time a child uses the software.

The limited amount of learning material combined with the slow operation of the software almost insure a quick onset of boredom for children in the target age group.

While it truly pains me to say "don't buy" a new IIGS educational program, particularly considering the current state of the market and the dearth of new offerings for our machine, I would be very hard pressed to recommend the expenditure of \$49 (or \$38) on this software. **GS+**

Talking Cloze Technique Greek Mythology

Program by Dylan Gladstone

Retail price: \$49 (\$59 with back-up disk)
Not copy protected
768K Required

Orange Cherry Software
Box 390 Westchester Avenue
Pound Ridge, New York 10576-0390
(800) 672-6002

Overview

Talking Cloze Technique Greek Mythology (hereafter referred to simply as "Greek Mythology") is yet another in the long line of Orange Cherry's Talking Schoolhouse Series of educational software offerings.

Greek Mythology comes on three 3.5-inch disks, requires at least 768K of RAM, and is not copy protected. It will run on either the ROM 01 or the ROM 03 IIGS, is compatible with System Software v5.04, and is hard drive installable.

Greek Mythology carries the Orange Cherry 90-day free replacement for defective disks, and a lifetime replacement for disks damaged for any reason for a \$10 fee.

The software is recommended by Orange Cherry for ages 8 to 13. This is a wide range of ages, and this software will not be appropriate for many, and possibly most children in this age group at any particular time, depending on their specific level of development.

The manual that accompanies this program is short and concise. As you will find out in a few minutes, there isn't a lot to say (OK—I let it slip out now), so the manual is entirely adequate.

What It's All About

Before I start, I have to say that when I read the description on the box that this software came in, and when I opened it up and saw that this program came on three disks, I was both excited and hopeful that this program would represent continued improvement on the part of Orange Cherry in their educational software offerings for the Apple IIGS. Here's what I found.

Greek Mythology contains 8 stories; "Newly adapted Greek myths" according to the manual.

Its goals (actually, what it claims it will do), as stated quite explicitly in the manual, are to teach children to read in context, and to further their understanding

of order, sequence, plot development, theme, and contextual meanings.

The software also is claimed by the publisher "when used effectively," to increase vocabulary, and to produce *marked* increases in children's retention of detailed material and reading comprehension. Oh, it also will "... enhance fine motor skills and eye-hand coordination."

How, you ask, does this little three-disk package do all this? Inquiring minds most certainly want to know. I sure was anxious to find out.

Well, remember the eight stories (oh pardon me, "newly adapted Greek myths") that I mentioned earlier? Are you sitting down? Seriously, you must be sitting down to continue reading this. Each of these eight stories has 10 missing words! That's right, 10 missing words!

When the child clicks on a little box in a story where a word should be (one of those missing words), up pops a dialogue box with three possibilities. Yes my friends, three, that's three choices for that missing word. And, to make things even more interesting, there is a picture of an owl next to the three choices. Who could guess that the owl is there to tell the child if he chooses wisely or not? What's the name of this owl you ask? "Mo

Mentum" is his name, and he is the wisest owl you'll ever meet. Talks he does, tells the child right off the bat if he got the correct answer or not. Shakes his head and everything. Cute little thing too!

The whole time I was reviewing this software, I kept looking back at the main menu screen thinking there was a hidden button somewhere that would lead to the real program. I knew I had to be missing something. And all those things the manual said that this software should do for children using it! Come on!

Friends, this program is a joke. It consists of 8 short stories, 80 missing words, and \$49 missing from your wallet. **GS+**

Click on the word that best completes the sentence.

his crown. Pelias said that Jason could be king if he completed a task. Pelias asked Jason to steal a great treasure from King Aetes of Colchis. The [] was the golden fleece. Jason agreed to this adventure; he built a giant ship, called the Argos, and named his sailors Argonauts.

cost
penalty
prize

The Software Bargain Bin

By Brian M. Winn

Entertainment?

In the last installment of the Software Bargain Bin, we discussed what shareware software is and where we can find it. In this issue we are going to examine my favorite category of shareware software: games! I can always find the time for a relaxing computer game after a hard day's work. From addicting Tetris-type games (*Columns v2.0* by Kenrick Mock and James Brookes and *Antetris* by Peter Jensen) to arcade shoot-'em-ups (*Orbizone* by Pangea Software), the library of entertainment shareware software available for the Apple IIGS is endless.

I have encountered two shareware games that I believe are definite "must-haves." It is obvious it took the programmers an enormous amount of time to bring us these masterpieces and they deserve our support. The following are detailed reviews of these two games.

CosmoCADE:

The Arcade of Tomorrow

Programmed by Brian Greenstone

Artwork by Dave Triplett

Music by Gene Koh

Shareware price: \$10.00

Requires 768K RAM, joystick

Pangea Software

10918 Kirwick

Houston, TX 77024

A Shareware Marvel

Pangea Software has been cranking out awesome IIGS shareware games for a couple years now. This time they have outdone themselves. CosmoCADE for the Apple IIGS combines excellent graphics, animation, and music to create the ultimate arcade environment.

Pangea Software designed the game with the idea that it would be sold to another company and commercially published. After several months of delay and negotiation problems, Pangea decided to release the game under their own name to the IIGS users in the form of a shareware

product. By doing this, they risked a lot of money and work in the hope that the IIGS users would support their efforts.

The game, in its current shareware form, is not entirely complete. The original plan was to combine three arcade-style games in one. The shareware version has two of the games. If the shareware version sells well, Pangea hopes to finish and release the third game to complete the package.

Two Classic Games Return!

In the past, Pangea's shareware games have been remakes of classic arcade games. CosmoCADE, "The Arcade of the Tomorrow," is no different. It contains two games, Journey to Calibus and Naxos, that resemble past arcade greats.

Journey to Calibus reminds me of the classic video game Xevious. You are controlling a space ship (with the joystick) as it rockets over the surface of a planet. There are several creatures, enemy space craft, and objects you must avoid as you approach the mother ship. When you destroy an enemy ship, it might drop an object. If you run over the objects, they will increase your score, strengthen your shields, expand your firepower, or give you a piece of the level's puzzle. When you collect all the pieces to the puzzle on that level, you must face the mother ship. If you complete the level (by destroying the mother ship), you are launched to another planet surface to face a new enemy.

The action in Journey to Calibus is exciting and quick. I found myself playing the game over and over, trying to get through to the higher levels, but I was never quite good enough to get to the last level. If you do complete the game, however, there is no need to stop playing it. With a Map and Tile editor, you have the ability to create your own levels to play and share with your friends.

Naxos is a futuristic version of Taito's very popular Operation Wolf. You are on an alien planet, deep in a jungle. As you travel through the jungle, you encounter

many different and strange alien creatures. Unfortunately, they don't want to be pals (and your character is not exactly James Baker). You must carefully aim your machine gun (with the mouse) and destroy them before they destroy you. Don't go Rambo-happy though, you only have a few rounds of bullets to burn. If you are lucky, you will manage to shoot an occasional bonus cherry as it falls from the trees. This will give you a couple more rounds to spread over your alien friends. But, if you are like me, you will run out of bullets and be a sitting duck for the alien lasers.

The graphics in Naxos are amazing. The colors are very bright and vivid. The animation is smooth and interesting. I must admit, however, I was a little disappointed that the game didn't have the brilliantly untasteful "guts" present in Pangea's previous titles.

Brian Greenstone, the programmer, has mentioned that the third game, in its current state, is a combination of Moon Patrol and Rastan. Hopefully Pangea Software will decide to finish this game and release it. (Send in your shareware fees!) If it is the caliber of the other two games in CosmoCADE, we are in for a fine treat.

Another Xenocide?

No, this game is not as good as Micro Revelations' Xenocide (another production of Pangea Software). The graphics are more colorful and vivid and the music is more empowering in CosmoCADE, but the storyline and game play does not compare with that of Xenocide. While Xenocide is an in-depth, integrated arcade/adventure game, CosmoCADE is more of a simple, shoot-'em-up. You must also remember, CosmoCADE costs a fourth of the price of Xenocide.

Conclusion

I cannot believe this game was released as shareware! CosmoCADE demonstrates some of the best animation and music I have encountered on the Apple IIGS to date. If arcade shoot-em-up is your hat, CosmoCADE should be in your drive!

Star Trek: Classic
Programmed by Joe Jaworski

Shareware price: \$20.00
Not copy protected
Requires 1.5MB RAM, a hard disk is recommended

Joe Jaworski
18405 Tamarink St.
Fountain Valley, CA 92708

Trek Fans Unite!

Stardate 1991.11, your Apple IIGS is about to embark on a journey into the depths of outer space with you as its captain. That's right, you are in control of the legendary U. S. S. Enterprise. Unfortunately, this will not be a pleasure cruise—Starfleet is under attack once again and it is up to you and your crew to halt this attack before it is too late. The Reliant, Nimitz, and Constellation, three other starships, have already been destroyed. You alone will have to use your cunning and wit to navigate your ship through space and conquer the enemy in the allotted time.

From Basic To Bodaclouds

If you are a new comer to the Apple II world, you have probably never played the original 1979, Applesoft BASIC game, "Star Trek." When I first got my Apple II+, it was the best public domain game available. Joe Jaworski has abstracted the general concept from this game and rewritten it in assembly. He then added over half a megabyte of digitized sound effects and music from actual episodes and detailed hand-drawn graphics to create a new shareware masterpiece.

You begin the game by selecting your skill level: expendable crewman (put on your red shirt!) to admiral. Each level varies in time allotted to complete the mission and in the strength of the enemy. Believe me, this is not an easy game to win. It took me several attempts to win at the easiest level. After selecting the level, you are presented with your mission. Missions generally

consist of destroying around 20 enemy vessels in around 30 days with a few starbases present to assist you. The starbases refuel your ship with dilithium crystals and repair damages obtained in battle.

You are then presented with the ship's bridge controls. You can control the entire ship from here (with the mouse), including navigations, weapon systems, and the ship computer. I found this game very easy to learn how to play but very difficult to win. It wasn't until I received the manual (which you get when you send in your shareware fee) that I realized how complex the game actually was. There are many elements in the game you have to consider in order to be victorious. But when you finally win a game, you will feel as if you have earned it.

"I'm A Computer, Jim, Not An Entire Galaxy!"

Unfortunately, this is true. The game does not have all the elements of the actual show that I would like to have seen. It would be great if the missions varied more; possibly missions of peace and exploration, but all the missions are "go kill the aliens in this amount of time." Three-dimensional graphic views and communications with the aliens would have also been a nice feature. But, what

can you ask from a shareware game? The game in its current state is a great remake of the original Applesoft game with several added features. Maybe if enough people support it, Joe will think about expanding it.

Conclusion . . .

If you enjoy watching Star Trek, you will love this game. The digitized sound is amazing and the game is very addictive. This program is closer to what you would find on the shelves of a software stores than what you would commonly find in the shareware libraries. "Star Trek: Classic" has my vote for the best strategy/adventure shareware game available. Get it! **GS+**

The screenshot displays the game's interface with several panels:

- Left Panel:** A vertical list of status indicators with numerical values in boxes:
 - Stardate: 2953.8
 - Quadrant: 5,3
 - Sector: 4,7
 - Dilithium: 2930
 - Shields: 0000
 - Photon: 6
 - Condition: (empty box)
 - Aliens: 17
- Top Center Panel:** A graphic of the USS Enterprise ship.
- Center Panel:** A table of system status:

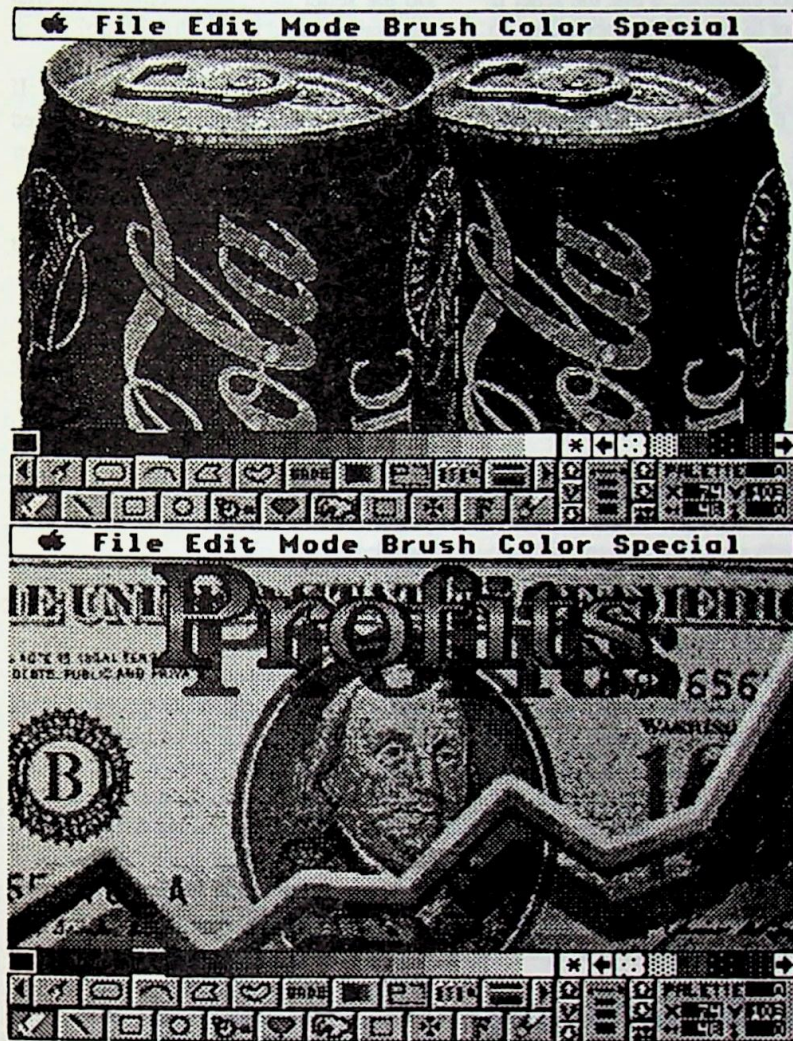
SYSTEM	EST REPAIR
Warp Drive	FUNCTIONAL
Short Range Sensors	FUNCTIONAL
Long Range Sensors	2953.8
Shield Control	FUNCTIONAL
Phaser Banks	FUNCTIONAL
Photon Torpedoes	FUNCTIONAL
Computer	FUNCTIONAL
- Bottom Left Panel:** A text box with mission progress:

161 Units Hit Alien at 8.1
Torpedo Hit Alien at 8.1
Alien Destroyed!
No Aliens within Sensor Range
- Bottom Right Panel:** A grid of control buttons:

NAV	SRS	LRS	SHE
COM	TRP	PHZ	DAM

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Buying Used IIGS Equipment

By Greg Zimmerman

I've bought quite a few used IIGS systems in my day, and more than my share of used peripherals. One thing's for certain; with the decline in the Apple IIGS market, prices are as low as ever. The current market has created quite an opportunity for many people willing to take the plunge into used equipment. A patient and knowledgeable buyer can pick up used IIGS equipment for up to 70% off the street price of identical new equipment. So if you are interested in acquiring an "affordable" IIGS ("affordable" sounds better than "used"), or if you are looking for some peripherals for your system at affordable prices, this article should head you in the right direction.

For those of you who would like a second system (I need one in my office, the kids playroom is just not a great place to work), or for those of you who never had a IIGS, and only subscribe to this magazine to look at the pictures (even though you tell your friends that you read all the informative articles), or if you just want to enhance your current system with some additional peripherals, buying used can be either an opportunity or a nightmare. Of course, the outcome mainly depends on how careful you are when you shop and make your used purchase.

Where To Buy

There are several different ways you can approach the purchase of used IIGS equipment. The two most likely places to find equipment are in your local newspaper classified ads, or in the advertising section of one of the major on-line services such as America Online or CompuServe.

If you are a first time buyer of used equipment, I would normally recommend that you stay with locally purchased systems and peripherals that you can see and operate prior to purchase. Buying long distance and through the mail (or UPS) from an individual on one of the on-line services usually entails risks that you

may not be comfortable assuming. The flip side of this is that you may be more likely to find a specific piece of equipment for sale on-line, as opposed to locally.

One risk of long distance buying of used equipment for example, is that the seller is likely to want to get their money either up front, or at the very least, will want to ship to you COD, which means you pay the shipper for the equipment before you even get to open the boxes. This leaves plenty of risk with you, if either the seller is dishonest, if there is any misunderstanding at all during the negotiations, or if there is a problem in shipment, like finding a 10 piece monitor in the box instead of the one piece variety most people prefer. (See the "Shopping On-line" sidebar for more details concerning on-line purchases)

What Questions To Ask

So, you've decided to buy that second IIGS you always wanted, and you find the following ad in the local classifieds:

Apple IIGS color monitor,
two drives, printer, modem,
TransWarp, hard drive, sound
card, software \$950. 555-
1212

Before you waste time and gas money, there are a lot of obvious questions that you should ask over the phone. These questions also apply to equipment that you are looking at on-line as well.

What ROM version is the CPU, and how much memory does it have?

Is the monitor the Apple RGB? Remember, there are composite monitors and third party RGB's as well.

What sizes are the drives? Are they Apple? Are they platinum in color and daisychainable?

What kind of printer? Is it an Imagewriter II? If so, is it platinum or creme (off-white) colored?

What make is the sound card? Is the modem external or internal? What is the modem's maximum Baud Rate?

How fast is the TransWarp?

Do the seller have the original CPU chip that was replaced by the TransWarp?

Is the hard drive external or internal? If it's external, what SCSI card is it attached to? If it's an internal drive, does the seller have the original power supply?

What original software is included? Does it all have docs? Does it all work?

Are the manuals for all the hardware included? Is any software that came with the hardware (like the System Software and the utilities disks for the sound card and modem) included?

Are all of the cables and connecting pieces included?

How old is all this stuff? Has it ever been repaired?

Is the seller the original owner, and if so, does he have the original receipts?

Remember to always say that you are "on a tight budget," and to ask if the price is firm.

Checking It Out

All right, so you're happy with the answers to all these questions, and off you go to the other side of town (these things are never just a 10 minute drive away) to check it out.

Before you leave, I suggest taking at a minimum, the following items:

- Appleworks GS
- System Software v5.04
- printer paper
- color ribbon for the printer
- a couple of blank disks for each size floppy drive
- a few of your favorite programs

It usually pays to take enough cash with you to effect the purchase. There are two reasons for this. First, there are some sellers that will not take a check. Second, the price may drop in negotiations when the seller sees the cash and knows that it's only a short "yes" away from his pocket.

On the other hand, it is best to pay with a check if for no other reason than if you overlook something that the seller is concealing, you can always return everything, stop payment, and if the seller wants to pursue it, do so with your money still in your bank account. One means of insurance in this regard is to try and pay part cash and part with check. This gives you at least some protection if you discover something (quickly) that was misrepresented by the seller. (Either intentionally or unintentionally.)

Whatever your plan, do *not* walk into a stranger's house with a pocketful of bills! I suggest leaving your money in the car, *locked*, until you have had a chance to check out the situation. At the very least, this will give you a couple minute romantic interlude to leave the house and reflect on your "deal" before forking over any money.

Don't cruise over in your new Porsche, or wearing your new Rolex, or dressed in obviously expensive clothes. This is a major decision you are making, and it is important that the seller know that you are not "loaded with bucks" so that when you make your offer (you are going to try and get the price down if you decide to buy, aren't you?) the seller will know that you earn each and every dollar one at a time, and that you may take a hike if the price doesn't budge.

My last piece of general advice is to do as little talking and as much listening as possible. It is impossible to learn anything while you are talking! There is no need to show off to the seller how much you know about computers, or about the IIGS. Ask questions, and wait for answers. Sellers are trying to sell, they want your money, and will usually do a lot of talking if you let them. The more a seller talks, the better chance you will have to discern the truth from the stretch. Also, you want to do maybe an hour's worth of testing on the equipment. You do not want to rush, or be rushed, as once you buy the stuff, you are going to have it for a long time. It will be an hour that is well spent. The seller will not get impatient if time is passing quickly, which it usually does for someone who spends most of it talking.

(continued on next page...)

Shopping On-line

If you do find a "deal" that you can't pass up on an on-line service, at a minimum, you should insist that you spell out every detail of the transaction in e-mail to be certain that everyone is in agreement. Include provisions for what happens if the equipment is damaged in shipment, if some equipment is damaged and some is not, if it arrives in non-working order, if it is not exactly as described by the seller, etc.. Try to get an agreement not to pay all the money up front or COD. I have purchased used equipment advertised on-line, and most sellers will take two-thirds of the money COD, and the promise to send the balance within 48 hours of delivery if everything is as advertised.

When everything is as advertised and no headaches arise, on-line deals can be great. The time you will be thankful that you spent a few minutes to spell out all contingencies and what happens for each one, is when a problem arises.

Also, keep in mind that when the seller insures a shipment, the insurance is for the seller, not for you. So if a UPS box arrives containing damaged equipment, UPS picks up the damaged merchandise from you (including the box and packing material), and then deals only and directly with the seller. However, there is no guarantee that the seller will get paid for the damage. If the shipper believes that the equipment was damaged *prior* to shipment (no one would do that, would they?) they may not pay anything. Also, the shipping company almost always has the right of repair, which could leave you with a patched-up, but working piece of equipment. Even if the shipper does pay the seller for the insurance claim, it takes lots of time, and once paid, there is no assurance that the seller will forward this money to you. Cover all these things in an e-mail agreement before you buy.

Don't purchase something through an on-line service thinking that the service (CompuServe, America Online, or whoever) is somehow policing the sellers and their advertisements of used (or new) equipment. My experience has been that there is *no* policing at all, though if a lot of complaints about the same person or company were received, they *might* do something about it. However that something would probably be to ban further ads, not to reimburse you for your loss.

So, make a list of everything you can think of that can go wrong, and exchange (and save) e-mail detailing what will occur in each instance. And don't forget the cost of shipping in a deal that falls apart. This can be significant if you are buying a whole system. Even if you are able to return a used system you are not happy with, the cost of doing so can be upwards of \$50 depending on what you are sending back and how far it has to travel.

I have found sellers on-line to *generally* be honest, but it only takes one lying, cheating dirtbag to ruin your day! This means that even if you follow all the steps I've outlined, someone wanting to get into your pocket probably will, and unless you are ripped off for a huge amount of money, it will not pay for you to try and sue someone that resides hundreds or thousands of miles away. And of course, you may then find that the "someone" is a 10-year-old kid! So, when shopping on-line, you must truly beware.

O.K., you get in the house, and are led to the room with the machine in it. Is the room well lit so that you can tell if the computer is "sunburned," scratched, or permanently yellowed from cigarette smoke? Is the computer clean? Is the house clean and well kept? I have found that, people who are pigs with one thing are usually pigs with others. So a pigsty house usually indicates a lack of care for the computer. This doesn't rule out a purchase, it just gives you more reason to check very carefully!

The Big Tests

Is all the advertised equipment present? Is all the software there?

Don't just sit down and start playing with the equipment. Ask the seller if it's all right to "try out" the equipment first. This is just a courtesy, but it can set the right tone from the beginning. Remember, you want the seller to like you. It will be easier to drop the price for someone likable as opposed to someone that is rude, crude, and pushy.

Turn on the hard drive if there is an external, and then the CPU and see what happens. First thing I would do is run the "self test" that is built into all IIGS CPU's. This test does not test everything that may be wrong, but it is a good start. Pressing the Command (Open-Apple), Option, Control and Reset keys will get the self test started. This test takes about 47 seconds, should not be interrupted, and should end with the message "System Good." If it doesn't end that way, try it again. If you get an error message, thank the seller and leave—unless there is a Zip GS installed. If a Zip accelerator is installed, the IIGS will almost always fail the 0Bxxxxxx or 0Cxxxxxx tests. This is normal for a IIGS with a Zip accelerator installed. To be completely thorough, you may want to remove the Zip card, reinstall the original CPU chip and run the self test again.

If the CPU passes the self test, then the next test is the Claris memory tester included with Appleworks GS. If you don't have Appleworks GS, or if Appleworks GS will not load because the CPU does not have enough memory or

because it is a ROM 0 that was never upgraded, you must now determine which memory card the CPU has. Open up the CPU at this point if you have to. Most memory cards have their own test disks which the seller should have, and which you should run. For the Apple card, there is a test program that can be obtained through any of the libraries from the major on-line services.

Serial Numbers

While the memory test is running, take a look at the serial number in the back of the monitor and on the disk drives. I think that the earliest (five or six years already?) Apple RGB monitors for the IIGS start with a letter (usually the letter "N") and then the number 6. A letter followed by the number 8 would put you somewhere around 1988, and a 9 would be pretty recent. I use the same general rule for the CPU serial numbers as well with the first letter (usually "E") followed by an 8 or a 9 being the more recent production. Sixes and sevens after the first number on either the CPU or the RGB mean that the equipment is getting kind of old. For well kept equipment, this doesn't cause me too much of a problem, except that the brightness of the RGB monitor deteriorates over time (due to natural causes beyond the scope of this article) and you will find on these older RGB monitors that the brightness knob has to be turned all the way up, and even then, it may not be bright enough for your liking. Also, the older all the equipment is, the closer to the end of its useful life it's getting, and the more heat, electric shock, etc. all parts have been exposed to. So newer is better, but that doesn't mean you shouldn't buy something just because it's a few years old. The IIGS is a real workhorse, and as far as my own personal experience it holds up really well over time.

On the disk drives, evaluate the Apple 3.5-inch drives the same way. A letter followed by a 7 is getting kind of old, and a letter or two followed by a nine is pretty new. Bar coding is pretty recent on all this stuff, so a bar coded 3.5-inch drive serial number is also pretty recent as well.

Another reason to check the serial number is to make sure that they are there. If the

equipment is stolen, they may have been removed. And if you ever do need service, an Apple dealer may not work on equipment with the serial numbers missing.

Last reason to check the numbers is to verify the claims of the seller in regards to age. If the CPU serial number starts with "E6" and the seller is telling you that the equipment is a year or two old, he's stretching things a might. By the way, I should mention now that my serial number experience is from personal observation only! I would love to see a summary from Apple showing the years of manufacture of the different numbers. So while I have used the above as a guide for myself, it is just that, a guide.

A couple other serial number tips are as follows. CPUs having a serial number that begins with a letter (my experience has always been the letter "E") and then a number beginning with 704 or a smaller number, have the old Video Graphics Controller (VGC) chip that needs to be updated (free) by an Apple dealer. Also, "E724" and prior (this includes the 704 and prior group) are before the ROM 01 came out and may need a ROM upgrade. Again, this is free from an Apple dealer. I haven't asked for one of these free upgrades in a while, but my dealer was still doing them as late as early this year, and even though they are free, there are still machines out there that the owners never upgraded! If you suspect the IIGS has one of these older chips, ask the seller if either of these upgrades has been performed.

If you are unsure as to which ROM the CPU is, merely boot it up and it will tell you at the bottom of the screen. If it says nothing about a ROM version, it is a ROM 0 which was never upgraded, and which will not run most of the software you are planning to test it with until it is upgraded by an Apple dealer.

On the 3.5-inch Apple drives, serial numbers preceding "Y7A0058" or those with a 6 as the second digit or 7 as the second digit with a 1 though 9 as the third digit have a daisychain problem that is fixed with a free upgrade. As this article

went to print, I could not find my source material to verify these serial numbers on the 3.5-inch Apple drives. But I believe they are correct, and the problem definitely exists. I learned about it when a seller of a system reduced his price for me because his 3.5-inch Apple drive would not work properly when another drive was daisy-chained to it. After I bought the system at the reduced price, I took the drive to an Apple dealer, and it was there that I found out about the free drive upgrade.

Run Some Programs

Now that we're past the serial numbers, and the self test and memory tests came out clean, it's time to load System Software v5.04, and then to boot Appleworks GS from the desktop. If the machine has 1.25MB of memory, or is the ROM 03 with the 1.125MB, then booting Appleworks GS and playing around with a module or two for a few minutes is a good way to bring any problems with the CPU to the surface.

Next, do a small color drawing and print it. If this comes out all right (you did bring your paper and ribbon in case the seller had none, right?), turn the printer back off, and while turning it on again, hold down the form feed button at the same time that you push on the power switch. This will throw the Imagewriter II into the self-test mode which goes until you stop it. Out will come lines of letters and numbers in different colors. Stop the test by turning off the printer, and then examine the characters to be certain they are evenly spaced, that none are skipped, and that they line up properly. The printout will have almost a diagonal look to it as each character is placed on the next line one space before the same character appears on the previous line.

For any other kind of printer, look at the manual and see if it also has a self test that you can run. If not, print from a couple of different applications, both text and graphics, color (if applicable) and black and white. If there is no smearing of ink, if text lines up correctly, if the paper feed properly, and if there are no really weird noises, the printer is probably all right.

For the keyboard test, use the Appleworks GS word processing module, and type in every letter on the board.

If the CPU you are testing does not have enough memory to run Appleworks GS, bring a 512K program with you like Multiscribe GS that will strain the existing memory and hopefully uncover many problems that might exist.

It wouldn't hurt to bring a few other pieces of software with you to boot and play with for a minute or two each. If a CPU will run several of the more memory-hogging programs you have without any problems, and no other problems are revealed by your testing, the chances are that it is OK.

Other Things To Check

Now, go into the control panel and check the settings and the time. If the computer has the right time of day, and the control panel settings are not all set to the default settings, the battery probably works fine. Just to be sure, after checking the time on the computer, turn it off for a minute or two, turn it back on, and check again. If the settings in the control panel have changed, or if the time has gone crazy, then the battery is probably shot. This is a \$14 problem [See review of the Nite Owl Slide-On Replacement Battery in GS+ V3.N1], which may get you a much greater price reduction.

Boot up the System Software again, and insert a blank disk into each drive and format the blank disk. Then copy something to that disk from either a different disk, or from a hard drive partition if there is a hard drive. Formatting a disk is a pretty good way to tell if the drive works or not. Try the drive eject buttons, and eject a disk from each drive by dragging it into the Finder's trash can.

For the monitor, the main thing to check is the brightness setting. This will tell you how much "brightness" the monitor has left in it. You'll know from looking at it if it has any black holes, dark spots, lines that won't go away, or other "I've had it" type symptoms. Play for a minute with the dials on the back just to be

certain that it can be adjusted and re-adjusted.

To check out the hard drive, first verify each partition using the Finder. The Finder should show no bad blocks. Boot the system from the hard drive to be certain that it will boot from the drive. Duplicate a folder or file on the drive, delete something from the drive, and turn it off, wait thirty seconds, and reboot from a cold start again to be certain that it works after being powered off and turned back on. Older hard drives do get a little noisy (actually so do some of the newer ones), so be certain you can live with the noise level, and that the noise is not a blown internal fan bearing (really noisy).

For the TransWarp, there is a self test built into the ROM of the card that appears as a CDA. Run the test and you will know if the card is in decent shape or not.

For the sound card, run the utility software that comes with the card. Play a song or two through it using whatever music program is available. You'll know real quick if it works or not.

The modem is almost worthless if it is not at least 2400 baud—but a slow modem is better than no modem at all. In any event, call a bulletin board with it to be certain that it works properly. Almost all modems have test software that comes with them. If this is the case, run the software. And check the settings in the Control Panel to be certain that if the modem is a 2400 baud modem, that it is set to that transmission rate.

The last thing to do with the hardware is to open the CPU case to see if it has been subjected to any spills. If any of the removable plates on the back of the CPU are missing (and with this list of equipment some will be), ask for them.

One option I don't want to overlook is that you can take a IIGS system to an Apple dealer and have them do most of the testing for you. The only problems with this are money and practicality. First, the dealer may not be willing or have the expertise to check the non-Apple

equipment. Also, will a seller agree to hold the equipment and take it to a dealer and meet you there? Last of course is the money. A dealer will charge in the range of \$50 to \$150 to check out an entire system. This is a lot of money! And of course, if the seller does agree to put other interested people who may call on hold, and meet you at a dealer for testing, the chance of negotiations over price at that point, once the seller knows you have an "investment" in the equipment, is pretty slim. One thing letting the dealer test everything will mean is that you can then get an AppleCare warranty on the Apple stuff. (The AppleCare warranty is not, however, included in the testing fee.)

Keep in mind that about the worst reasonable thing that can happen to you is that you don't check out the equipment thoroughly enough and you are stuck with a motherboard replacement or a bad monitor. A new motherboard is around \$250 and buying a used replacement RGB monitor is in the neighborhood of \$175 to \$225. There are enough great deals around on used IIGS systems that if I were buying, I would plan on getting a system at a price where I could afford a \$200 problem and still be very happy with my purchase. If you look, you'll find those systems out there.

On the software, try a couple of the programs out, but if there are lots of them, I would recommend not taking hours to check them all out. Try the most important and most expensive ones, but check all of them for the original docs and disks. Keep in mind that there is a lot of very cheap IIGS software out there for sale, both new and used. Therefore, I

would not consider the value of the software in deciding how much to pay for hardware.

Yet More Questions!

Are you getting the mouse pad, disk holders, any dust covers, the original boxes and any blank disks laying around?

Is the original CPU chip replaced by the TransWarp included? The original power supply replaced by the internal drive? You will need both of these if the TransWarp or hard disk breaks and has to go in for repair. Without these items, you won't be able to use your computer while you are waiting for the repair to be completed.

Don't be shy about asking about the desk that the computer is sitting on. Many people that are disposing of their equipment are doing so because they need the money, are moving, or need to make room for something else, such as a baby's crib! It can't hurt to ask about the desk being part of the deal if you need one. Remember, used furniture is not worth much to anyone except the guy that has to go out and pay the new price for it at the store.

Are the manuals all there? Did you ask about the original receipts again?

When all the checking out is over, if you decide to buy, make the seller an offer. I've sold plenty of things in my day that I would have sold for less if the buyer had only asked!

Taking It Home

While you are packing up everything to take it home, remember that the hard drive heads should be parked. If the hard drive is

not more than a few years old, chances are the heads are self parking when you go through the GS/OS shut down procedure (from the Finder, press Command-Q, then the return key, then switch off the computer). If you're in doubt, ask the seller if the drive came with a head parking utility. If in doubt, just be very gentle with the drive. About the only other thing that you have to worry about are any 3.5-inch drives. The read/write heads on these drives contain ceramics and if you jolt these drives, the pieces can bump together and crack. This worry is easily resolve by putting a disk in the drive before transporting it. The disk-shaped yellow thing (that's the best description I can give it) that comes with the drive when new is better, but any disk will do just fine.

So, armed with this advice, you should be able to get yourself a system that is in decent shape, and if you are patient, a system that is priced to your liking. Remember, a lot of IIGS owners are switching to other systems, and a lot of IIGS owners are getting pinched by the failing economy. Many need to sell, and cash talks when the going gets rough. So be patient, take your time, and be careful.

Not everything will go as I've described in this article, surprises do pop up. Just remember to use common sense, think through the situation, decide what the absolute worst thing is that can happen, and then if you still want to buy, build the contingencies into your price. Rest assured there are many many sellers of used IIGS systems and peripherals and patience and careful shopping will pay off. **GS+**

Having Problems?

If you are having a problem with your GS+ subscription, we want to help! But we can't help if we don't know about it! You can call us at (615) 870-4960, Monday through Friday between 9 a.m. and 6 p.m. Eastern Time. Or, you can write to us at:

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

Dear GS+,

Help! I have been trying, unsuccessfully, for weeks to play MIDI Synth music from my ORCA/Pascal programs. I have the official synthLAB/MIDI Synth v1.0B3 package with the manuals, but the lack of good examples in the "MIDI Synth External ERS" book is really frustrating.

The method that I have tried is as follows:

1. Load the sequence, wave, and bank files
2. Use the WriteRamBlock call to write the "PCM Data" part of the wave file into DOC RAM.
3. Use SetInstrument calls to enter the data from the bank file.
4. Make SeqPlayer call with a pointer to the following parameters:
pBufStart = Pointer to "Seq Data" part of the sequence file.
rBufStart = Nil.
rBufEnd = Nil.
SeqFlags = \$0100.
theClock = 0.

If you can tell what I am doing wrong by this list, please let me know what else I should do. Otherwise, could you tell me

where I can get some sample source code (C or Pascal)? Also, a "Working with the Toolbox" article for MIDI Synth would be very useful.

Matt Jensen
Plymouth, NM

WriteRamBlock can only write out 32K of information at a time, so be sure you're making two calls—one to load in the first 32K and a second to load the last 32K. There's a lot of extra stuff that needs to be set up (in addition to the instruments) before a song can be played. Be sure that you have done the following before making your SeqPlayer call:

- Make two calls to WriteRamBlock
- Called SetInstrument for all 16 instruments (starting at offset \$400 in the instrument file)
- Called SetPlayTrack for all 16 tracks (starting at offset \$168 in the sequence file)
- Called TrackToChannel for all 16 tracks (starting at offset \$148 in the sequence file)
- Called SetTrackOut for all 16 tracks (starting at offset \$192 in the sequence file)

- Called SetTempo with the $(tempo - 5) / 2$ formula (at offset \$18A in the sequence file)
- Called SetBeat (at offset \$190 in the sequence file)

For some sample code on using MIDI Synth, check out the Sound.S source code file, from MacZombies, in GS+ V2.N6. You'll need GS-ShrinkIt to retrieve the file from the MacZombies.SRC.SHK archive. The code is in Merlin assembly, but it should be easy enough to follow since all you will be interested in is the MIDI Synth tool calls and the order in which they are made. Eventually, I hope to cover every single tool set in the "Working With The Toolbox" series (with the exception of the Dialog Manager), but I'd like to start out with the more basic tools and then work up to the "obscure" ones like MIDI Synth.

If you have a IIGS programming question, send it in! We'll try to answer it in the next "Programmer's Queue & A." Send your questions to:

GS+ Programmer's Queue & A
P. O. Box 15366
Chattanooga, TN 37415-0366 **GS+**

Product Updates

Compiled by Steven W. Disbrow

Now Hear This! (Original eh?)

Huibert Aalbers IIGS music program "SoundSmith" (see review in GS+ V3.N1) is no longer shareware! The program is now published by Seven Hills Software.

Also, version v1.1 of GraphicWriter III is finally shipping. Actually, we've been beta-testing it for about four months now (did you notice the thin lines in the last issue?) and couldn't be happier with the changes that have been made. If you haven't gotten your upgrade yet, send in your registration card. Is version 1.1 good? Hey, you're soaking in it! The last three issues of GS+ Magazine have been done

with either beta versions or the actual version 1.1. For more information on this upgrade and the newest version of SoundSmith, contact:

Seven Hills Software, Inc.
2310 Oxford Rd.
Tallahassee, FL 32304-3930
(904) 575-0566

New C. New Pascal. New ASM.

The Byte Works has announced yet another update to both ORCA/C and ORCA/Pascal! ORCA/C is now at version 1.3 and ORCA/Pascal is now at 1.4. Among other things, these new

versions now support the creation of Control Panel Devices, user tool sets and improved printing via the .Printer device. They also come with a new version of PRIZM (the ORCA desktop development environment). The price for each upgrade is \$10 for registered users. If you have not sent in your registration card yet, do it now! Also, ORCA/M v2.0 (see "Product Updates" in GS+ V2.N6) is finally shipping. For more information, contact:

Byte Works, Inc.
4700 Irving Bld. N. W. Suite 207
Albuquerque, NM 87114
(505) 898-8183 **GS+**

The HyperStuff Collection

First in this innovative series is *ClipTunes™*

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

Second in the HyperStuff Collection™ is *ClipArt Plus™*

ClipArt Plus contains 20 screens of the finest ClipArt available for the Apple IIGS. Categories include: Animals, trains, food, boats, construction, office, tools, and just about everything else including a kitchen sink. To compliment this fine ClipArt, included are 4 New Desk Accessories and as a bonus to HyperCard IIGS users, 4 Xcmds in a small demo stack.

Icon Button NDA makes creating HyperCard format Icons a breeze. Icon Button NDA lets you "Clip" out sections of any SHR screen and saves it right to the stack of your choice. GetPic Xcmd lets you display ClipArt Plus pictures, or pictures from most graphic formats including PrintShop IIGS™. Once displayed, selecting a portion of the picture for use in backgrounds, cards, or buttons becomes child's play. Simply draw a box around the image you want and click the mouse. Icon Mover Xcmd lets you copy Icons from stack to stack. With Vclip Xcmd you can view (or print) the contents of the ClipBoard. Once you use ClipIt NDA you will wonder how you ever managed without it. ClipIt works great with any program that uses the standard ClipBoard.

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P.O.Box 12201
Hauppauge, New York 11788

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GS+ User Group Connection

By Steven W. Disbrow

So far, the main focus of this column has been on the declining attendance and growing apathy among Apple II user groups. Stan Feller, of the Apple Computer Enjoyment Society (A.C.E.S.) user group in southern Florida had some advice on how to keep your membership interested.

Instead of putting out a regular newsletter, A.C.E.S. puts out a bimonthly 5.25-inch diskette. According to Stan, it takes only a small amount of creative energy to create a disk that will contain a wide variety of information for your user group members to enjoy. One of the main advantages is that lots of good public domain material (both editorial material slanted towards user groups and programs) is available on BBS systems and the various information services. This ensures that you will have lots of good material to choose from and reduces the amount of stress that your newsletter editor might feel when trying to come up with "new" material.

Another advantage that Stan points out is that (depending on the size of your user group) it is more economical to put out a bimonthly disk than a newsletter and the disk can hold more information than two or three sheets of paper.

If you want more information about A.C.E.S. and their bimonthly disk, contact Stan Feller at A.C.E.S., P. O. Box 291557, Fort Lauderdale, FL 33329.

Disk?

Recently, several user groups have written to ask if it would be possible for to change their GS+ User Group Connection subscriptions to include the disk. This is fine with us, but we would have to charge the entire \$36 for a one year magazine and disk subscription. Also, I'm not sure what a user group would *do* with the disk. Since none of the GS+ Disk contents are public domain or shareware (with the exception of the occasional TechNote), it would be illegal to distribute the disk contents to

the club membership. But, if your club wants to pay for the disk, it's fine with us.

Disk 2

Our first User Group Connection disk has proven to be very popular. So popular in fact, that some of you have already asked for a second disk! So what we want to know is, which articles do *you* want to see on the second GS+ User Group Connection disk? Drop us a line at the address below with your suggestions.

Make The Connection!

We are making available several of our more popular articles and reviews in plain ASCII and Teach formats. These items, along with our demo programs and some other goodies are on our first GS+ User Group Connection Disk. To get the disk, there are only 7 rules that you have to follow:

- Your user group *must* be involved in our newsletter exchange program (see below).
- You *must* send us a *blank, formatted* disk and a *self-addressed* return envelope with *return postage*. (We will supply the disk label.)
- You may only print *one* article and/or review in each issue of your newsletter.
- You may not print any articles other than the ones included on the GS+ User Group Connection Disk.
- You may not change the content of the articles in *any* way.
- You may not distribute the articles and/or reviews any farther or by any means other than printing them in your newsletter.
- You *must* print copyright information along with each item you print. (This information is included in each file on the disk.)

The first disk (:GSP.UGC.1) contains the following items:

Beginner's Guide To The Finder - Parts 1, 2 and 3.

Beginner's Guide To System Disks - Parts 1, 2, and 3.

Trash Can Award: *InnerExpress*

The disk also contains our EGOed and Transfusion *demonstrations* and the HyperStudio stack version of GS+ Magazine V1.N2. These files (and only these files) are freeware and can be placed on your club's Disk Of The Month.

That's seven months' worth of articles and three months' worth of demos (if you put only one demo on each disk). Not a bad deal for the price of a disk and a few stamps!

That's all I have room for this time. Until later, remember, your user group needs *your* help! Volunteer today! GS+

We Want You!

If your IIGS user group or IIGS special interest group (SIG) is not a member of the GS+ User Group Connection, we want to change that. To become a member, simply have one of your club officers contact us. All we need is the name and address of your group. However, if you give us a free subscription to your group's newsletter, we'll give your group a free magazine-only subscription to GS+ and access to the GS+ User Group Connection reprints! Send that information and/or newsletter subscription to:

GS+ User Group Connection
P. O. Box 15366
Chattanooga, TN 37415-0366

The following items were taken from press releases that we received here at *GS+* Magazine. As with all such things, these products or services may not actually exist yet. Be sure to contact the indicated companies for more information.

Apple II User's Unite!

The Alliance International Incorporated (the "AII" for short) is a new organization devoted to promoting the use of the Apple II in home, business, and education. The AII hopes to achieve this goal by actively advertising the existence of the Apple II both here in the U.S. and in international markets. The AII is also contacting software publishers in an attempt to get new software written for the Apple II.

The underlying philosophy of the AII seems to be that we should all get up and do something *positive* for the Apple II rather than sitting around crying about Apple Computer, Inc. (This is *my* interpretation folks! These are not the words of the AII!) This is a great idea (and something we've been trying to say for over two years now!), and we wish the AII much success.

If you would like more information about the AII, or you want to offer them your support, contact:

The Alliance International Inc.
P. O. Box 20756
Louisville, KY 40250
(502) 491-6828

When In Doubt, X = 0.02

Remember Algebra class? How about Calculus? Or perhaps you lost your sanity in a "Difficult Equations" class. Worse yet, are you actually *taking* one of these classes? Ick. Well, my heart goes out to you; and in the next few months, Seven Hills Software new "Formulate" software will be out as well. Formulate allows you to lay out and print mathematical equations using your IIGS. It can also export these formulas to other programs (desktop publishing programs, paint programs, etc.).

Unfortunately, Formulate does *not* allow you to *solve* mathematical equations (like Mathematica on the Macintosh does), so you'll still have to do all of the brain work yourself. But at least you'll be able to do all of your math papers on your IIGS. Formulate will be priced at \$49.95 and should be available soon. See below for contact information.

Size 11 Wide

"ShoeBox" is a new HyperCard IIGS application from Seven Hills Software that allows you to easily organize all of the important information that you might otherwise, um, misplace. You know: veterinary records, names and addresses of your in-laws, your wedding anniversary (just kidding Nory) and stuff like that.

Seriously though, I've been beta-testing ShoeBox and it is an amazingly powerful and complete personal information organizer. In addition to all of its database functions, ShoeBox has a mail system

that allows you to send messages to other members of your family. If you have lots of receipts and phone numbers all over your desk, I strongly suggest that you take a look at ShoeBox when it comes out.

If you don't have HyperCard IIGS, don't worry, ShoeBox will include a copy. (Although, I don't think it includes the documentation that comes with the "actual" version of HyperCard IIGS that you can buy separately). However, you will need a hard disk and at least 1.5MB of RAM (required just to run HyperCard IIGS). For more information on either ShoeBox or Formulate, contact:

Seven Hills Software
2310 Oxford Rd
Tallahassee, FL 32304-3930
(904) 575-0566

Got a new IIGS product or service? We want to help you get the word out! Send us a press release and we'll let our readers know about it. Send those press releases to us at:

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

Moving?

Well, don't forget to tell us! The Post Office does *not* 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 in a change of address! As soon as you know your new address, simply remove your mailing label from a previous issue of *GS+*, affix it to a change of address card (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

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1/3 page - \$60
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2/3 page - \$120
1 page - \$150
2 pages - \$250

If you want your ad to appear on the back cover or inside back cover, add an additional \$100. Call for cover reservations.

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March-April 1991 (Volume 3, Number 4) March 15, 1992

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GS+ Magazine
c/o **EGO Systems**
P.O. Box 15366
Chattanooga, TN 37415-0366
Voice phone: (615) 870-4960

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.

GS+ Ordering Information

GS+ 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: GS+ Subscription Services, c/o **EGO Systems**, P.O. Box 15366, Chattanooga, TN 37415-0366.

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- 1/2-year subscription - magazine only - \$8
- Sample issue - magazine + disk - \$8
- Sample issue - magazine only - \$3

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If you prefer to use your credit card to order by phone, give us a call at (615) 870-4960, Monday through Friday, between 9 a.m. and 6 p.m. EST. All subscriptions will start with the next issue published. Please allow 2-8 weeks for delivery of first issue. Tennessee residents add 7.25% sales tax. Add \$1.50 an issue if you want First-Class delivery. Add \$1.50 an issue for delivery to Canada or Mexico. Add \$1.50 for surface mail to all other foreign countries. Add \$5 per issue for Air Mail to all other countries.

Feedback

How did you first hear about *GS+* Magazine?

Are you a subscriber to *GS+* or was this a sample issue?

If you are a subscriber, do you receive the Magazine and Disk? If you do not receive the disk, why not?

How would you describe your level of computer experience?

- babe in the woods
- novice
- I get by
- fairly proficient
- experienced
- power-user
- digital deity

Are you a member of a user group?

- Yes
- No

Please tell us a little about your IIGS system. Do you have a:

- Hard drive
- Modem
- Dot Matrix Printer
- Laser Printer
- 3.5-inch drive
- 5.25-inch drive
- Scanner
- Digitizer
- Accelerator card
- Fan
- Extended Keyboard
- Anything else?

How much memory do you have in your IIGS?

Is your IIGS part of an AppleTalk network?

- Yes
- No

Do you have a SCSI card in your IIGS?

- Yes Which one?
- No

On a scale of 1 to 5 (with 1 being "poor" and 5 being "excellent"), how would you rate the following items from this issue of *GS+* Magazine? (If you don't receive the disk, you don't have to rate the disk items.)

- How Fonts Work
- Working With The Toolbox
- Buying Used IIGS Equipment
- Introduction To 3-D Graphics
- AutoSave v1.0
- RAM Namer v2.0
- EGOed v1.37
- NoDOS v1.7
- Advertisers Index
- How would you rate *GS+* Magazine?
- How would you rate the *GS+* Disk?
- How would you rate *GS+* overall?

How often do you think we should update our programs?

- Every issue
- Only when the update is a significant improvement or bug fix
- Never

Should we review more:

- Educational Software
- Games
- Hardware
- Productivity Software
- Utilities

How would you rate the technical content of *GS+* Magazine?

- Child's play
- Just right
- I'm drowning in jargon!

If you have been "drowning in jargon," how helpful was the Glossary feature?

- It saved me!
- At least I'm afloat on the sea of jargon now.
- You might as well have thrown me a concrete life preserver!

What did you think of the new, more detailed, "How To Use The *GS+* Disk" department?

- Way too detailed!
- Right on the money.
- I didn't need it. But it looks good.
- Nowhere near enough detail!
- A monkey at a typewriter could write better instructions!

What would you like to see in the next issue or two of *GS+*?

We want to have the best, most reliable advertisers in the business. Who would you recommend that we try to get? Why?

Do you have any comments on the advertisers featured in this issue of *GS+* Magazine?

Do you take the comments in our "Advertisers Index" into account before making a purchase?

If there was one thing you could change about *GS+*, what would it be?

Do you think you will renew your *GS+* subscription? If not, please tell us why.

Anything else you want to say? Feel free to add additional sheets.

Send this sheet (or a photocopy) to:
GS+ Feedback
P. O. Box 15366
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GS+ Back Issue Information

Sep-Oct 1989 (V1.N1)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- System Software 5.0 Compatibility Chart
- NoDOS - A file utility New Desk Accessory complete with ORCA/C source code on disk
- Graphics Galore - Drawing "how-to" with 3 pictures on disk
- Reviews of Arkanoid II (new custom levels on disk), Crystal Quest, ORCAC, Rocket Ranger, Silpheed, Test Drive II, TransWarp GS, Turbo Mouse ADB
- PLUS: Graphics, rumors, and the most over-hyped product of the year!

Nov-Dec 1989 (V1.N2)

• \$6.50 disk (magazine is sold out!)

- EGOed - An NDA text editor (TML Pascal II source code on disk)
- Brush with Greatness - Tips on drawing faces (pictures on disk)
- PLUS: Original icons and new levels for Laser Force on disk

Jan-Feb 1990 (V1.N3)

• \$6.50 disk (magazine is sold out!)

- Rotator - A beginner's desktop programming tutorial and program w/source code written in ORCAC
- Winning Arkanoid II Levels
- Brush with Greatness - Space graphics (pictures on disk)
- HyperStudio stack version of GS+ V1.N2 on disk.

Mar-Apr 1990 (V1.N4)

• \$6.50 disk (magazine is sold out!)

- All About Control Panel Devices - with Desk Color CDev and ORCAC source code on disk
- Random IIGS Programming Notes - An EGOed update
- Brush with Greatness - Architecture on your IIGS with pictures of the CitiCorp building and Frank Lloyd Wright's house on disk

May-Jun 1990 (V1.N5)

• \$4.50 mag • \$6.50 disk • \$9.50 both

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

Jul-Aug 1990 (V1.N6)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- KansasFest Report
- Beginner's Guide to System Disks - Part 2
- Transfusion - An NDA terminal program (ORCAC)
- Reviews of AMR AS800K 3.5-inch drive, Salvation: The 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?

Sep-Oct 1990 (V2.N1)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- 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 file that allows you to move desktop windows from the foreground to the background (ORCAM)
- Battery Brain - CDev saves BRAM parameters to disk (ORCAC)
- Reviews of GS Sauce memory card, Salvation: Wings, World GeoGraph, Orange Cherry Talking Schoolhouse series, QIX, Solitaire Royale, InnerExpress

Nov-Dec 1990 (V2.N2)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- Interview with Bill Heineman (programmer of Dragon Wars)
- Beginner's Guide to System Disks - Part 3
- LaserWriting - a guide to using an Apple LaserWriter with the IIGS
- Christmas Buyer's Guide
- TeachText Translator - import and export TeachText files in GWill
- Reviews of Quickie Hand Scanner, AE 3.5" Disk Drive, Salvation: Renaissance, USA GeoGraph, Rastan, Captain Blood, HOSTAGE, Questmaster, Pipe Dream, The Immortal, PIRATES!

Jan-Feb 1991 (V2.N3)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- AppleFest/Long Beach '90 and the Apple II Achievement Awards
- Interview with Jim Carson of Vitesse, Inc.
- Introduction to System Software v5.0.4
- RAM Namer - a CDEV that can rename your RAM disk at boot time, with ORCAC source code on disk
- GS+ program updates - Battery Brain v1.1, EGOed v1.32c (now written in ORCAC), GWill TeachText Translator v1.1
- Reviews of ZipGSX, LightningScan, Design Your Own Home, Print Shop Companion IIGS, Your IIGS Guide, Dragon Wars, 2088: The Cryllan Mission - Second Scenario, Space Ace, Sinbad and the Throne of the Falcon

Mar-Apr 1991 (V2.N4)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- Interview with Dave Hecker of Seven Hills Software
- Working with the Toolbox - Part 1: The Tool Locator
- Quick NDA - an Init that can assign control-keypad equivalents to your New Desk Accessories, with ORCAM source code on disk
- The New Order - a NDA that can reorder the contents of your directories, with ORCAC source code on disk
- GS+ program updates - EGOed v1.33, Transfusion v1.1.1
- Reviews of Harmonie, Independence, InWords, Allison Digitizing Software, MAX/Edit, Software of the Month Club, Super GS Award Maker, Talking Speller II, Halls of Montezuma

May-Jun 1991 (V2.N5)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- Interview with Matt Deatherage of Apple DTS
- Working with the Toolbox - Part 2: The Memory Manager
- Autopilot - A program launcher with ORCAM source code on disk
- Softlock - A password protection NDA with ORCAC source code on disk
- GS+ program updates - EGOed v1.34, NoDOS v1.5
- Reviews of TMS Pro R45 Removable Hard Drive, RamFAST/SCSI Card, HyperCard IGS vs. HyperStudio, McGee at the Fun Fair, Talking Classroom, Talking Multiplication and Division, Bouncing Bluster II, Space Shark, Transylvania III

Jul-Aug 1991 (V2.N6)

• \$6.50 disk (magazine is sold out!)

- MacZombies - A game written by Bill Heineman with Merlin source code on disk
- Watchdog - A GS/OS notification CDev with ORCAC and ORCAM source code on disk
- HyperActivities - Address book stack for HyperCard

Sep-Oct 1991 (V3.N1)

• \$4.50 mag • \$6.50 disk • \$9.50 both

- Protecting Your Investment - A Guide to Surge Protection
- A Conversation with Roger Wagner - Part 2
- Working with the Toolbox - Part 4: QuickDraw II
- FGS (Fractal Graphics & Such) - A Fractal Generator written in ORCAC
- 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 and SoundSmith, IIGS Classic: The Bard's Tale IIGS

All prices include \$1.50 postage and handling (orders will be sent First-Class to the U.S., Air Mail to Canada and Mexico, and surface to all other countries. For Air Mail to all other countries, add \$5 per issue). Tennessee residents add 7.25% sales tax. Mail back issue requests to: **GS+ Back Issues, c/o EGO Systems, PO BOX 15366, Chattanooga, TN, 37415-0366; or call (615) 870-4960, Monday through Friday between 9 a.m. and 6 p.m. EST, to verify availability. Please include your phone number on all orders placed by mail (in case we are sold out of an issue)! For MasterCard or VISA orders placed by mail, also include your card number, expiration date, and signature.**

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Glossary

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

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.

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.)

GS/OS *

The Apple IIGS Operating System.

Installer *

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

you reduce the possibility of the wrong file being copied to the wrong place.

Jaggles

The nickname given to the jagged edges that sometimes appear on bitmapped fonts and graphics.

Point

A unit of typographical measurement. A point is 1/72 of an inch.

RAM Disk

A RAM Disk is a section of RAM (Random Access Memory) that is treated just like a physical diskette. You can save files to and load files from a RAM Disk just as you would any other diskette. The only difference is that when you turn off the power to your computer, the contents of the RAM Disk disappear!

ROM Disk

A ROM Disk is similar to a RAM Disk in that it is a section of memory that is treated like a physical diskette. Depending on the implementation, you may or may not be able save files to a ROM Disk. (Technically, however, a ROM Disk that you can write to is not *really* a ROM Disk.) Unlike a RAM Disk, the contents of a ROM Disk will *not* disappear when you turn off the power to your computer.

Self Test

A "self test" is built into the ROM of every Apple IIGS. This self test is a subset of the diagnostic tests that are performed on each IIGS as it is manufactured. To start the self test, hold down the Command, option, control and reset keys. Then release the reset key, control key, option key and Command key, in that order. The self test lasts about 45 seconds (slightly longer on a ROM 03 IIGS) and should end with a series of pleasant sounding beeps and the message, "System Good." Any other result indicates a *possible* problem with the system. If the self test does result in an error, *don't panic!* Turn the IIGS off, take a short break and then try it again. It is also important to note that having

certain hardware installed in your IIGS (most notably the Zip GS accelerator) will always cause the self test to report an error.

Shareware Software

Shareware software (or simply "shareware") is software that you can try before you buy. Shareware software is generally available from user groups and on-line services. Shareware is provided with the understanding that, if you like the program and continue to use it, you will send the author of the program the requested fee (the amount of which is usually specified in the documentation supplied with the shareware program). If you do not like the program, you are requested to pass it on to your friends and then delete all copies of it from your disks.

SIMM

SIMM stands for "Single Inline Memory Module." A SIMM is a small circuit board with several memory chips mounted on it. SIMMs are used (as opposed to individual memory chips) for memory expansion in the Macintosh and by several IIGS memory board products.

System Software *

This is the software that makes your IIGS a IIGS. System Software is responsible for almost every aspect of the operation of your IIGS. Among its many duties are program launching and disk maintenance (via the Finder), fixing problems in the Toolbox, and providing drivers for the various peripherals you may have attached to your IIGS (disk drives, printers, etc.). System Software is the foundation on which all IIGS-specific programs are built.

Toolbox *

A collection of software routines that are used to simplify the process of writing programs for the IIGS.

Typeface

All sizes of a given font design, weight and style (such as "Times Italic"). **GS+**

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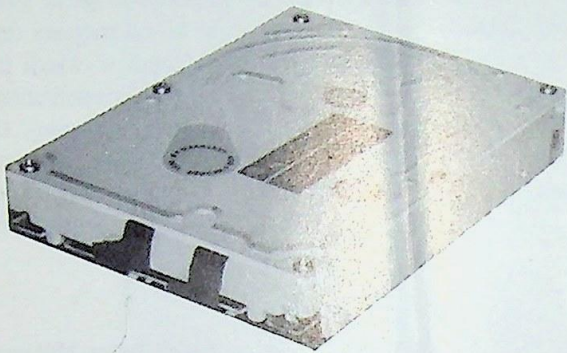
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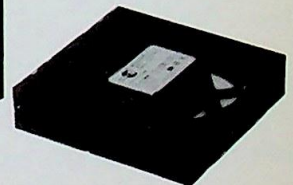
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