GS+

$3.00
(magazine only)

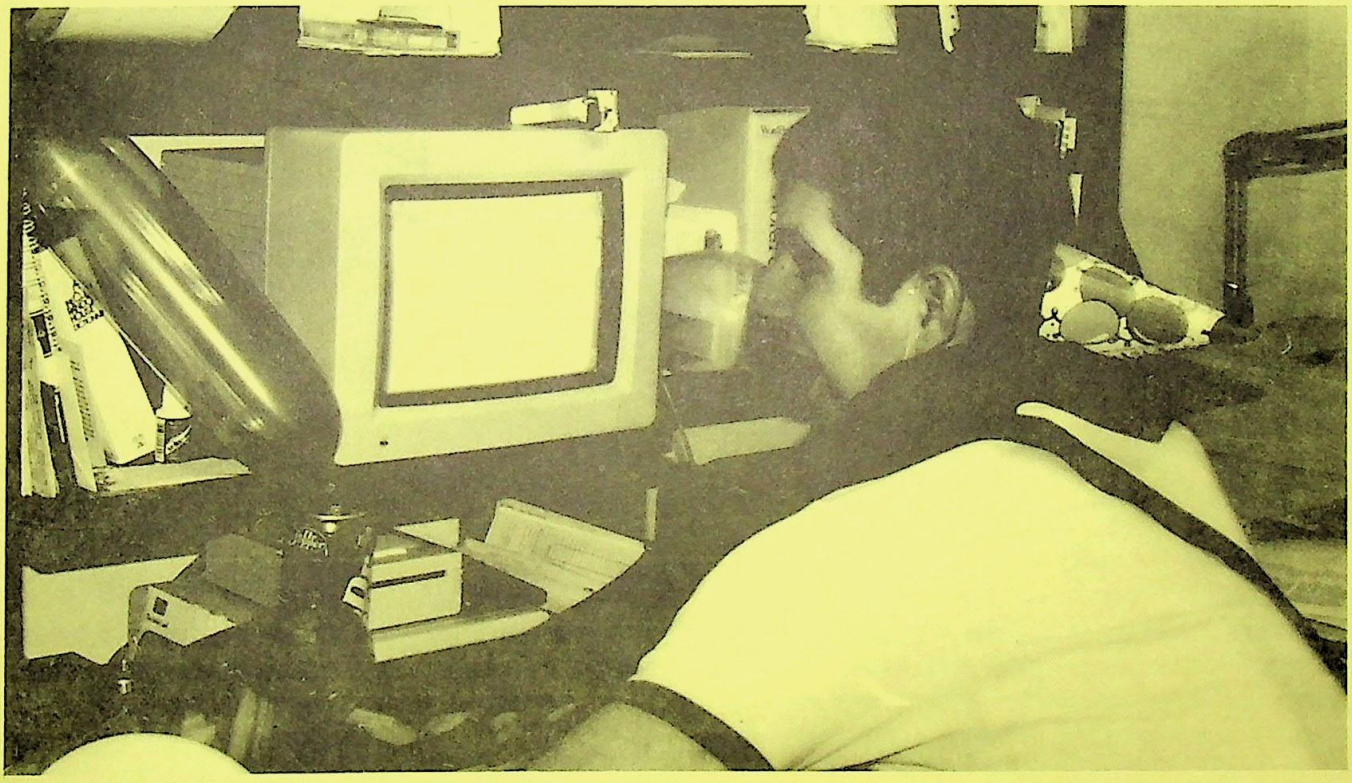
$8.00
(magazine + disk)

January
February
1990

Volume 1
Number 3

The *First* Apple IIGS Magazine + Disk Publication!

HAPPY NEW YEAR!



- Tips on Using AppleWorks GS
- Beginner's Guide to the Finder - Part 2: Mousing Around
- How to Create Fantastic SPACE Graphics
- Rotator - A Beginner's Desktop Programming Tutorial and Program written in ORCA/C
- Reviews of:
  HyperStudio v2.0
  Graphic Disk Labeler
  Programmer's Online Companion
  Xenocide
  Keef the Thief
  Life & Death
  The Three Stooges
- Arkanoid II Contest Winners
  (Winning Levels on Disk)

Plus Much, Much More!

So why aren't more companies developing software for the IIGS? Recently, I went on a trip to California (I was helping a friend move there) and I took the opportunity to ask some of the people that make software that very question.

Of course, one of the first answers was that the IIGS is just too darn slow for almost any serious development efforts. However, with the advent of System Software 5.0, TransWarp GS, and the Floating Point Engine (an Apple II math coprocessor), the IIGS can now hold its own, speed-wise, with just about any of the other computers in its class. Once developers get off the stick and decide to take advantage of these advances, the speed of the IIGS should not be that much of a concern.

But, that might never happen. According to the developers that I talked with, IIGS software just DOES NOT SELL. For instance, a VERY good game program that I reviewed in the first issue of this magazine has failed to sell even 20,000 copies for the IIGS. The same title has sold between 70,000 and 100,000 copies in its IBM PC version! As you might expect, that company will be focusing heavily on the IBM PC in the future.

The developers I spoke with feel that software theft (romantically known as "Software Piracy") is killing the development of IIGS software. After all, why should they spend thousands of dollars to bring a new IIGS title to market when no one is going to buy it? I sure wouldn't!

This problem is not unique to the IIGS. I know of several publishers that are on the verge of dropping support for the Amiga, Atari ST, IIGS, and even Macintosh in favor of the IBM PC. This is not to say that the IBM PC market does not suffer from software theft, but the installed base of PC compatibles is so huge that most publishers find the losses acceptable.

So what do we do? Well, for goodness sake, don't steal software! If you are interested in a program, read the reviews in *GS+*, *inCider*, *Nibble*, or *The Apple IIGS Buyer's Guide*. Then, ask for a demonstration of the program at your local users' group meeting. If you are still interested in the program, BUY IT! Pay the MONEY!

If someone offers to give you stolen software, politely refuse.

If you see software theft going on in your users' group, report it to the club president.

If you are a parent, take the time to review the software that your children use. Set an example for them to follow.

I know that software is expensive, I buy a ton of it every two months! If you can't afford the software you want, save your money; you'll get there eventually. If you are a younger person and don't have any income other than an allowance, make work for yourself. Mow yards, walk dogs, baby-sit, or get a paper route! You will be amazed at how much old folks like myself will pay to get out of mowing the lawn!

Remember, it is ultimately you and I that decide which programs will be developed for the IIGS. If we can't convince developers that there is a IIGS market, they will pack up their IIGS development and head for "bluer" pastures.

Steven W. Disbrow

"Look thoughtful, you idiot!"

Contents

GS+

FEATURES

Tips on Using AppleWorks GS.....4

Beginner's Guide to the Finder - Part 2: Mousing Around 6

Brush With Greatness - image processing and SPACE graphics using your Apple IIGS (pictures on disk) 8

Rotator - a beginner's desktop programming tutorial and program written in ORCA/C (source code and executable file on disk) 12

REVIEWS

HyperStudio v2.0..... 22
Graphic Disk Labeler..... 25
Programmer's Online Companion..... 27
Xenocide..... 28
Keef the Thief..... 31
Life & Death 33
ManHunter..... 35
The Three Stooges..... 37

DEPARTMENTS

Writer's Block..... inside front cover
Letters..... 2
Updates..... 3
Errata 11
Contest 17
How to Use the *GS+* Disk..... 20
Icons 21
Rumors, Wishes and Blatant Lies..... 39
The Classifieds..... 40
Trash Can Award 41

GS+ is produced on an Apple IIGS
using AppleWorks GS v1.1
and an Apple LaserWriter IINT.

Steven Disbrow • Publisher, Editor
"He gets all the credit..."

Noreen Ribaric • Associate Editor, Layout
"...I do all the work!"

Screen graphics were captured with a FingerPrint GSi card. FingerPrint GSi was also used to freeze the screen so that the screen photographs could be taken.
Our "coverboy" this issue is Chris Shutters of the Falcon AFB in Colorado Springs, CO.

GS+ is published bimonthly by:
EGO Systems
4126 Mountain Creek Road #20
Chattanooga, TN 37415
(615) 870-4960

If you have a submission for ***GS+***, send it to:
GS+ Submissions
c/o EGO Systems
P.O. Box 15366
Chattanooga, TN 37415

Subscription rates for one year (six issues) are:
Magazine only - $15.00 or Magazine + Disk - $36.00
Quantity discounts available for schools and Users' Groups.
Send subscription orders, ads, inquiries, and address changes to:

GS+ Subscription Services
c/o EGO Systems
P.O. Box 15366
Chattanooga, TN 37415
or call (615) 870-4960
Great Scott!! BBS (615) 875-4607
2400 Baud/8 data bits/no parity/1 stop bit

Last issue, we printed nothing but nice, warm, friendly, cuddly letters. As you might expect, we get other kinds too . . .

Dear Steve,

I am writing this with several conflicting thoughts and fears. Thought you might get a lot of feedback from others, so here is some more . . .

1) The Trash Can Award needs someone with a balanced view of the product. I had the original HyperStudio and much of what the reviewer says is so . . . BUT . . . I never had any trouble doing what the enclosures said it would do, never had a crash and had no problems with it on my hard drive (AMR 60). I also was treated more than fairly by Roger Wagner who responded personally to my phone calls. True, the program should never have been released without advising people that it was incomplete ... BUT ... the fact that it was not released when due was APPLE's fault, not Roger Wagner's. You may be interested in knowing that the day after I received your first issue, I also received my update to HyperStudio and it does everything that was promised, with a few additional goodies. I believe, if Roger hasn't totally blown his credibility, that it will become a classic for the GS. Let's pan the dogs that come along with some reasonable comments, not rantings of a deranged incompetent.

2) I too find it hard to believe that the first issue was done using AppleWorks GS. Why would you want to when Publish It! 2 would have done as well and laser printed quite easily. I reproduced one of your pages using Publish It 2 in about 25 minutes. I tried to do the same page with AppleWorks GS and gave up after an hour and a half! Just too damned complicated to continue. It's a wonder you folks are still sane (?)

William W. Beard
Vancouver, WA

Taking your points one at a time:

1) I'm confused. On the one hand you say that I unfairly trashed HyperStudio, but you also say that much of what I said is true, and you suggest that HyperStudio may have blown Roger Wagner's credibility. Which is it? If it's true that HyperStudio never crashed on you, I would have to say that you are one lucky guy! Of all of the people that read or heard about that Trash Can Award, you are the only one to write in and say that you had never had the program crash. You also suggest that warning potential buyers would have made things more acceptable, and that Apple was behind some of HyperStudio's initial problems (although you don't say where you got this information from). I disagree. As a programmer, I feel that before a program of mine goes out the door, it damn sure better work the way I intended it too. If it doesn't, I don't release it. If problems are found later, I fix them immediately. "The Buck Stops Here" may be an old-fashioned and unpopular work ethic, but I like it. As for passing the buck to Apple... that is a rather lame excuse that was first used by Macintosh programmers and later 'ported to the IIGS along with the Toolbox.

2) You are right, Publish IT 2 probably would have been a better choice than AppleWorks GS 1.0v2. But, thousands of IIGS owners had shelled out a ton of money for AppleWorks GS, and we wanted to do something that said, "Hey, look at THIS! Maybe you didn't waste your money after all!" We will continue to use AppleWorks GS to publish GS+. Sane? What sane person would quit a $35K a year job to do THIS?!

I appreciate the comments and concerns you have. But these are all things I feel VERY strongly about. Like everything else, software should be done correctly the first time, and users should not have to pay $100 for the "privilege" of being Beta-Testers. If it were not for the shoddy quality of the original HyperStudio and the unbelievably worthless reviews (advertisements, really) that the then current Apple II press wrote about it, I probably would not have gotten ticked off enough to quit that job and start this magazine.

Steven W. Disbrow - Publisher

Dear Sirs,

Congratulations on publishing a very fine magazine. I would like to make a few comments on your Nov. issue. First of all, there is a new version of Dark Castle that fixes the bugs you mention . . . [*See Updates on page 3 for more info*]. I would like to suggest that you contact the company directly regarding updates prior to publishing a review.

Also, I don't think it is fair to condemn a program without some explanation. I totally disagree with you placing Marble madness on your list of programs to avoid. I think Marble Madness is wonderful. I've also had a lot of fun with Gauntlet. Please try and be objective about your criticisms. . . .

Finally, with regard to your paltry cash offerings for articles and programs, I think it is an insult. A better idea is to offer free issues of your publication in

exchange for articles and programs. This wouldn't break your budget and you truly would be offering valuable compensation.

Once again, keep up the great work. I look forward to your next issue.

Donald T. Wile
San Jose, CA

You are right about the reviews and the list of horrid programs. We should have called about Dark Castle and we should have discussed what we thought were problems with Marble Madness and the others (rotten graphics, slow, insipid sounds and/or the ability to make those of us remembering them sick to our stomachs). Actually we were fairly pleased that we could only come up with four such programs! We will do better in the future.

As for the money thing.... you are right. It is paltry. Before I started this magazine, I spoke with several friends of mine with ties to different computer magazines and asked them what they thought fair compensation would be. The figures varied, but one thing that I heard over and over again was, "Lots of small magazines, like yours will be, don't pay anything. They can't afford it. The folks that write for them are just happy to help others and get their name in print." This turned out to be true. When I first talked to Michael Quinn, I found out that he had worked in jobs making over $100 per graphic (and had been offered jobs making $300+ per graphic). I heard this and lost hope. I told him how much we could pay and prepared to get hung up on. Never happened. He's excited to be a part of GS+. Knowing that he might help someone get more out of their IIGS and the exposure that the magazine brings him is more than enough. Another of our contributors, Bryan Walker, works for free. He won't take the money, he just enjoys writing.

As for giving out magazines, this is something that we've been considering since day 1. But, we have no idea what sort of scale to go by. How many magazines is a review worth? Wayne Packard and Michael both agreed that they would rather have the money than a 20 year subscription. As soon as we come up with a fair scale to go by (suggestions are welcomed!) we will offer magazines or subscriptions as compensation.

Steven W. Disbrow - Publisher

Dear GS+,

Just received my first issue of GS+ and wanted to let you know that I appreciate the useful articles, the excellent art lesson, and the honest reviews. EGOed, the text editor NDA that came with the magazine, is great. It's the first piece of software I ever got with a magazine that I've found really useful. In addition to that, having the full source code for the program is a treasure of sample code for IIGS programming, something that's hard to come by. It's a quality magazine with emphasis on the contents rather than on nonessential frills.

Many Thanks,

David Markowitz
Woodstock, NY

Thank you David! That's exactly what we set out to provide!

Updates

On 12/1/89, Lane Roath, the programmer of Dark Castle for the IIGS, called us up to tell us that an update is available for Dark Castle that not only fixes all of the bugs mentioned in our review (GS+ Volume 1, Number 2, page 25), it adds quite a few bells and whistles. For instance, you can now control the game with a joystick. It also allows you to play any level in "Practice" mode. You can't set high scores in this mode, but you get an unlimited number of lives (you can still die in the ordinary ways: falling, an arrow through the head, etc.). All this, plus it loads faster and automatically ejects disks for folks running it on a one drive system. If you want to get your free update, write to:

Three-Sixty Pacific, Inc.
2105 S. Bascom Avenue
Campbell, CA 95008

Lane also said to be sure and thank Three-Sixty for not copy-protecting their products and to tell them that you want to see lots more IIGS titles from them!

Tips on Using AppleWorks GS

by Noreen Ribaric

The first bit of advice I can give AppleWorks GS (AWGS) users is to upgrade to version 1.1, if you haven't already. Almost all of the problems we have had with AWGS 1.0v2 have been eliminated, or at least improved, in the new release. (To upgrade, contact Claris at 1-800-544-8554). Version 1.1 finally makes AppleWorks GS the product it should have been.

In the meantime, or for those of you who are going to stick it out with earlier versions, here are some tips to help make using AppleWorks GS easier and more enjoyable. (Note that most of these tips will not necessarily apply to version 1.1.)

If you must use an earlier version of AWGS, we suggest booting up with System Software 4.0 instead of 5.0 or 5.0.2. The reason is that there are overall much fewer lockups and system crashes. As an example of this, the problems listed below only occur when using AWGS 1.0v2 and System 5.0. They don't occur when using AWGS 1.0v2 with System 4.0.

- Editing text that is displayed using a large point-size (18 or greater) in a page layout document will sometimes result in "garbage" being inserted in the middle of your text (namely large, colorful, special characters), or even more often, a system crash. Try changing the font to a smaller point size before editing it, then changing it back when you are through. Or better yet, do all your editing in the word processor, then import it to your page layout. If those strange characters do appear, do NOT try to delete them. Just clear the text box and start over (avoiding large fonts until all changes are complete). Trying to delete them usually results in an "out–of–memory error," followed closely by a "serious system error." If you ever see the message "not enough memory for that operation" (and no strange characters are present), save your document immediately. If you are editing a graphics document, collapse it (see the next-to-last tip on page 5 on how to do this). If you are editing a word processor or a page layout document, after saving it, quit and restart AppleWorks GS. That should free up some memory. (If you don't do this, the next change you attempt may result in a crash!)

- Do not edit imported text in a page layout document using AWGS 1.0v2 and System 5.0. If you do, you may find that it replaces the lowercase "r" with a "ú" or some other crazy character! As noted before, do all editing before importing. (This bug did not seem to occur on text that was typed directly into the page layout, only when editing imported text.)

- The LaserWriter printer driver in System 4.0 works better with AWGS 1.0v2 than the one in System 5.0. Printing more than 3 copies of one page, or three pages in a row is nearly impossible with AWGS 1.0v2 under System 5.0.

The next few tips apply to using AppleWorks GS 1.0v2 with either System 4.0 or 5.0:

- If you are using System 5.0 to edit a page layout that was originally created under System 4.0, be careful! The first time you go to print it, you will be told that the page setup has been changed, even if it really hasn't. This is because the printer drivers have been changed in System 5.0. The actual amount of printable space on a page is a little greater, but since the spacing is looser, you will find that about a quarter of an inch might get chopped off the right side of the page, and everything else is moved to the right a little bit. You will probably need to go back and change at least your master pages, and possibly each individual page, as well.

- Try to avoid page layout documents that are larger than 10 or 15 pages. AppleWorks GS seems to crash more often in larger documents. Instead, split it into 2 or more smaller documents (I have to split the magazine layout into 2 separate documents). If you do work with large documents, using the menu options instead of the command-key equivalents seems to cut back on the number of crashes. (I have had AWGS 1.0v2 crash several times using Open–Apple-S to save a large page layout instead of selecting "Save" from the File menu!)

- Be careful when more than one edit window is open at the same time. Clicking at the bottom of the active window to edit some text may accidentally try to bring another window forward, and sometimes AWGS will lock up in the process.

- Be careful when using the "Check Spelling..." selection under the Search menu in the word processor on a system with a hard drive that uses a non-Apple SCSI card. We found that with our CMS hard drive and SCSI card that the "Suggest" option almost always resulted in a "serious system error";

"Add to Dictionary" worked for the rest of the current spell-check, but upon performing another spell–check, the addition to the dictionary was no longer there; and there were overall far too many crashes to justify using the spelling checker (note that we have had no problems using the spelling checker on systems with Apple SCSI cards, and the non-Apple SCSI problem is gone in AWGS v1.1).

- When deleting or cutting text in a page layout document, make sure what you intended to delete actually disappears and everything else is adjusted accordingly. If some text (or "garbage") stays behind, the next thing you think you're selecting can turn out to be something else. To clear out this "garbage," click in the zoom box in the upper-right corner of the edit window. This will redraw the window. (This also happens in AWGS v1.1.)

- If trying to print to a LaserWriter and the message "flushing to end of job..." appears and the document is not printed, try selecting a different printer (e.g. ImageWriter). Under System 4.0, select "Choose Printer..." under the File menu, and under System 5.0, go to the graphic control panel. Then change the printer back to a LaserWriter and try to print it again. If that doesn't work, try closing the document and reopening it. If that still doesn't work, you'll probably have to reboot your computer! This problem seems to have disappeared in AWGS version 1.1.

- We were not able to increase our AppleWorks 1.0v2 database beyond 125 records. We had to split it into two smaller databases. AWGS version 1.1 uses a different database format and this problem does not occur (1.0v2 databases can be converted to this new format in AWGS version 1.1).

- You can quickly run out of memory when drawing graphics. The more objects in the graphics document, the more memory it uses and the slower AWGS runs. To reduce these bad effects, use the "Group" selection in the Arrange menu to "group" pieces that belong together into one object whenever possible, and then select "Collapse" under the Edit menu (with the group(s) still selected). Note that once collapsed, objects cannot be ungrouped.

This last problem only occurs under AppleWorks GS v1.1 and System Software 5.02:

- If you are creating a graphic that will be imported into a page layout document and printed out on a PostScript printer (like the LaserWriter), avoid using the paint tools (paint brush, pencil, paint bucket, and spray can)! These are not object-oriented tools, but bit-mapped tools, and the System 5.0 (and later) LaserWriter driver appears to ignore objects created with these tools when printing an AWGS v1.1 page layout document. Instead, use the drawing tools: text, lines, rectangles, ovals, arcs, and polygons. I originally created the *GS+* logo on the cover using the line tool to outline it, the paint bucket to fill it in, and the pencil to touch it up. Upon outputting it to our LaserWriter from a page layout document, I found out even though it looked beautiful on the screen, the LaserWriter only printed the parts drawn with the line tool! To fix this, I outlined each letter using the polygon tool with a solid black fill. Since the polygon tool is object-oriented, any object drawn with it is automatically converted to PostScript and is output at the highest resolution the printer is capable of. In fact, lines that look jagged on the screen will look much better when printed on a PostScript printer. Just compare last issue's cover logo (which used paint tools) with this issue's cover logo (that used only object-oriented drawing tools)! Note that graphics printed from the graphics module, and not the page layout module, will not have this problem.

If you have a tip or problem you would like to share, or ask us about, send it in! If we publish it, we will send you that issue free (or if you are a subscriber, we will extend your subscription for one issue)!

NEXT ISSUE . . .

Beginner's Guide to the Finder - Part 3: All about Icons

Another Brush With Greatness

Reviews of:
- **The NEW ComputerEyes (If our video camera does not go to Hawaii again)**
- **ORCA/Disassembler**
- **InnerDrive**
- **Ancient Land of Ys**
- **Where in the World Is Carmen Sandiego?**

AND MUCH, MUCH MORE!

by Steven W. Disbrow

Last issue, we looked at the basic concepts behind the IIGS Finder. We also took a brief tour of the options available in the Finder's menu bar. This time, we will look at how to use the mouse to perform some of these same options and several others not available from the menu bar.

Forget The Menu, I Know What I Want...

The menu command that is easiest to duplicate with the mouse is "Close." To close the currently active (i.e. front) window, all you have to do is click the mouse in its *close box*. The close box is the small box in the upper-left corner of a window's title bar.

Almost as simple to duplicate is the "Open" command. All you have to do to open an icon with the mouse is *double-click* on it. That is to say, you move the mouse pointer over the icon you want to open and then you very quickly press the mouse button twice. When you open a disk or folder, the Finder presents you with a window showing the contents of that disk or folder. If you open an application, the Finder shuts down and that application is started up. This is also known as *running* or *launching* an application. When you open a data file, such as an AppleWorks GS word processor document, the Finder shuts down, the application that created the document is started and the document is loaded by the application so that you may begin working with it. This is a very handy little feature that most, but not all, IIGS applications support. With some applications, notably AppleWorks GS, you can select several documents in the Finder, open them all at once (by selecting "Open" from the File menu or double-clicking on any one of them), and they will all be loaded when the application is run.

I Want This, And This, And...

So, how do you select icons? Good question! Using the options available in the Finder's menus, all you can do is "Select All." When you pick this option, **every** icon in the currently active window will be selected. If there are no windows open, all of the icons on the desktop will be selected. While this all or nothing approach has its uses, selecting icons with the mouse is much more flexible.

To select a single icon with the mouse, you simply move the pointer on top of the icon and click the mouse button once. When selected, the colors in the icon will invert (black will become white and everything else will become black) so that you can tell the icon is selected. Selecting multiple icons with the mouse is only slightly more complex. (Note that when you select multiple icons, they must all be in the same window, or they must all be on the desktop.) The first way to do this is called *shift-clicking*. All this means is that you hold down either of the <shift> keys while clicking the mouse on each icon you want to select. As long as you hold down the <shift> key, each icon you click on will be added to the set of selected icons. If you let up on the <shift> key and then select an icon, that icon will be selected but all of the other icons will be *deselected*. The second way to select multiple icons is to "draw" a box around them with the mouse. To do this, simply click the mouse somewhere in the window (or on the desktop) that there isn't an icon and, **while holding down the mouse button**, move the mouse towards the icons you wish to select. Moving the mouse while holding down the mouse button is known as *dragging*. As you drag the mouse, you will see a box form. One corner of this box will be anchored at the spot you originally clicked the mouse. Now all you have to do is continue dragging the mouse until the box **encloses** all of the icons you want to select. When it does, release the mouse button and all of the icons in the box will be selected.

While both of these methods offer a great deal of flexibility, it is still possible to accidentally select an icon that you didn't want. But, this too is a simple thing to fix. To deselect unwanted icons, simply hold down the <shift> key and click on the offending icon. It will be deselected without affecting the rest of your selected icons. To deselect all selected icons, just click the mouse on a spot where there are no icons.

Now that we know how to select icons, let's talk about some of the things you can do to them.

A File By Any Other Name...

One of the most useful things you can do to a selected icon is *rename* it. To rename an icon, deselect any icons you might already have selected and select the icon you want to rename. Then, simply type the new name for the icon. If you make a mistake, you can use the standard editing keys (arrows, delete, etc.) to fix it. When you have the file name the way you want, press the <return> key and the file will be renamed. Note that except for disk icons, icons on the desktop (i.e. not

in a window) can not be renamed. To rename an icon that is on the desktop, you must first select it and then use the "Put Away" option in the File menu to return it to its appropriate window.

Copying Things

Another handy feature of the Finder is its ability to copy files and disks. This is especially true when you consider that the Finder is the **only** program currently available (that I know of) that can copy files that have *Resource Forks*. A Resource Fork is a portion of a file that contains commonly used items such as menus, window definitions, text, etc. Other copy programs will simply ignore the Resource Fork (not good!) when making a copy or they will just stop dead in their tracks and refuse to even **try** to copy the file (Copy II+ version 9 is one such program).

To copy a file or files with the Finder, simply select the icon(s) of the file(s) in question, click the mouse button on the newly selected icon(s) and drag the icon(s) until it is over the window or disk that you want it (them) to be copied to. If you are copying files to a disk, the disk icon will turn black when the mouse pointer is on top of it. Then, you simply let go of the mouse button and the files are copied. Note that if you try to copy files to the same disk that they are already on, the files will be *moved*, not copied. If you want to have more than one copy of a file on a disk, select the files' icon and then pick the "Duplicate..." option from the File menu. This will make a copy of the file in the same window. You can then move the copy to another window on the disk.

Copying disks is done in much the same way. You simply select the icon of the disk you want to copy and drag it on top of the icon of the disk you want to copy it to.

In either case, the Finder has several different options that you can use to affect how files and disks are copied. The Finder will automatically present you with these options when appropriate, or you can access them ahead of time by holding down the <option> key **before** you begin dragging the icons to the target window or disk. These options are fairly self-explanatory, so I'll let you explore them on your own.

Kill It!

One of the last truly useful things you can do to icons with the mouse, is to delete them. To do this, simply select the icons of the files you want to kill and drag them over to the icon of the Trash can. The Trash can icon will turn black when the mouse pointer is on top of it. At this point, release the mouse button. All of the selected files will be removed from the window they were in and the Trash can will "bulge" to show that there are files in it that are **waiting** to be deleted. At this point, you can do one of several things:

1) If you want to get rid of the files immediately, simply select the "Empty Trash" option from the Special menu and the files will be **physically removed** from the disk. You won't be able to get them back.

2) You can get the files out of the Trash by opening the Trash can icon (by double-clicking on it), selecting the icons of the files that you want to get back, and then choosing the "Put Away" option from the File menu. This will return the icons to the window that they originally came from. They will not be deleted.

3) Ignore the silly thing. If you know that you want to get rid of the files in the Trash, but you don't want to be bothered with actually moving the mouse or typing Open-Apple-T, the Finder will eventually delete whatever is in the Trash. Over the course of a few years, this feature, combined with a programmable TV remote control can cause you to gain about 25 lbs.

Another thing you can drag into the Trash is diskettes. When you drag a disk icon into the Trash, the Finder closes all of the open windows associated with the disk and ejects the disk from the drive. The disk's icon is also removed from the desktop. **Nothing is deleted!** This is simply a way to get the disk out of the drive and clean up the desktop. If the disk is a 5.25" disk, its windows are still closed and the icon is still removed from the desktop, but you have to physically remove the disk from the drive yourself. This is different from the "Eject" menu command. When you use "Eject," all of the disks' windows and its icon remain on the desktop. They are simply shaded to indicate that the disk is not currently in any drive. It's also important to note that you can not drag a hard disk or RAM disk icon into the trash.

The Final Chapter

Well, that should be quite enough to hold you for a couple of months. In our final installment of the Beginner's Guide to the Finder, we'll take a look at some tips and tricks you might not know about, including everything you wanted to know about how those silly icons work!

by Michael J. Quinn

Before reading this article, make sure that all of the pictures are on the disk. You should have two Jupiter pictures ("JUPITER.BW" and "JUPITER.COLOR"), one Halley's Comet picture ("HALLEYS"), and five METAL pictures ("METAL1" through "METAL5"). See page 20 for information on the exact location of these files. The paint package used to create these pictures is DeluxePaint II. The tools and menu options referred to in this article are from this package.

Well, I suppose you have already looked at the pictures. No I didn't draw that picture of Jupiter (at least not ALL of it). That picture was digitized with AST Research's Vision Plus video digitizer. If you plan on getting involved in graphics, I highly suggest getting a digitizer, whether it be a video digitizer and/or scanner. They bring out a whole new world in your IIGS! This particular digitizer digitizes 15 black-and-white frames per second with contrast and brightness control using the mouse. It grabs pictures from an electronic video source such as a video camera, VCR, video disk player, or anything that has an NTSC video out signal. It also has the capability of digitizing in color. But enough with the digitizers, I'm here to talk about how to create your own original graphics.

JUPITER

We'll begin with the picture of Jupiter. You should have the original, untouched, black-and-white, digitized image along with the final, colorized version, "JUPITER.COLOR", with the moons floating in front of the giant planet (a total of 2 pictures). The reason I have no intermediate pictures showing how to get from the original to the final product is because it is so simple, quick, and easy to explain, that putting an intermediate stage would be a waste of space and time. If you haven't already, load the black-and-white picture of Jupiter, "JUPITER.BW," into your paint program and work with it while reading this section. I'm not going to show you how to DRAW the planet Jupiter. I'm going to show you how to manipulate a scanned or digitized image. This is a fun thing to do with the IIGS. Even if you don't own a digitizer, you can always download digitized pictures from a local BBS or even use these techniques in your painted pictures.

Drawing the moons is a simple task if your paint package has a gradient Fill tool. If your paint package does not have this feature or a similar one, I highly recommend getting one that does (e.g. DeluxePaint II or Paintworks Gold). This tool can accomplish some amazing tasks. But, if your current package does not have this tool, don't worry, I will explain how to get around it. Now, to begin with the moons, go to the palette and select the range of colors you want to appear in your new moons. In this case, choose all of the colors that are in the planet, but just those colors, no extras. *(Consult your software manual on how to manipulate a range of colors.)* Once the range is taken care of, set the fill to "Gradient." If you have a "round" gradient fill, choose that. Now select the Filled Circle tool and make a couple of small circles on or near the equatorial plane of Jupiter. For those of you who aren't astronomers, that's the straight line that runs through the equator of the planet. You're 90% finished with the picture already!

If you don't have a gradient fill, read this paragraph. If you do have it, you may skip this paragraph. Here is another approach to making a shaded sphere. Out of the colors in the planet, choose the brightest one. Now make a solid circle where you want your moon to be. HINT: make your moon off to the side of the picture, so that when you are done, you can pick it up as a brush and paste as many moons on the picture that you want. You won't have to draw more than one moon, and you can erase the one off to the side if it looks out of place. Now that you have a bright solid circle, black out the left half, but keep a small vertical line (smaller than the diameter of the circle) to the left of the half circle (touching the edge). This will give it a rounder appearance when you are through. Choose a two-pixel

brush and select "Smooth" from the Mode menu. Smooth the left edge of the circle. This should give the shadowing effect similar to the one you see on the left side of Jupiter. If the bright side of the moon is rough, use a one-pixel brush to smooth the edges.

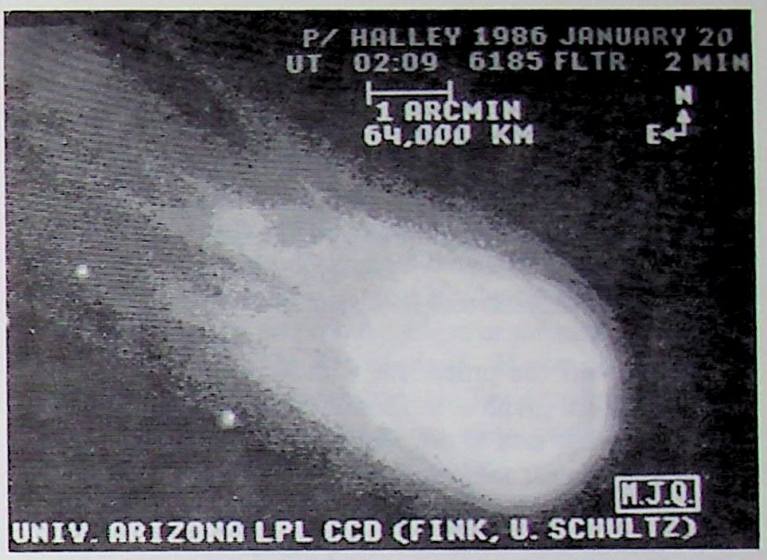
You might want to cast a shadow of one of the moons on the planet. To do this, use the magnifier and make a small checkerboard over the surface of the planet. Use a dark color for this and be sure not to make the checkerboard too big and that it is fairly close to the moon that is casting the shadow. Also, make sure that the shadow is on the opposite side of the moon that the light source is. In this case, the light source (the sun) is coming from the right of the picture. When you are finished making the checkerboard, choose a medium sized brush (about 4 to 8 pixels) and smooth the checkerboard. This should retain the planet's surface texture and create a shadow. You are now 99% through! All that needs to be done is to change the palette's colors to suit the planet.

If you have ever looked at Jupiter through a telescope, or have ever seen any color photos of the planet, you probably remember that it is made of shades of yellow and red. So to manipulate the palette, find out which color is the brightest one used in the planet and make it a yellow. Move a few colors down and choose a red. Now spread the yellow to the red and the red to the black. You should now have a colorized picture! Fool around with it a little: make it a pink, purple, or blue planet. Have some fun! You may have noticed that there are about three colors in the palette that are not used. Well, I hate for them to go to waste, so why not make some stars in the background? Just change those colors to dark shades of grey, use the Airbrush (spray paint) tool and throw some stars up there in the darkness!

HALLEY

This is a drawing of a photograph taken with a CCD camera of Comet Halley on 1-20-86, at the University of Arizona in Tucson. This is NOT a digitized picture, but a drawing of a false-color photograph. A false–color photograph is simply a black-and-white photograph that has been assigned an arbitrary set of colors. So, how did I draw this picture? Well . . . .

For the first step, create your palette. The standard palette will do for this, since false-color pictures can



have any colors you want. Just make sure that each color is in contrast to the two colors next to it in the color bar. Make a fairly large circle of the second lowest color (black being the lowest). Choose the "Smear" option from the Mode menu and a medium sized brush (4-8 pixels). Smear the color from the center of the circle towards one direction until you have a fairly long trail. Choose the adjacent color from the color bar and make another circle slightly smaller than the first, inside of the first. Smear this one the same way, not smearing any further than the first color. Repeat this process until you can't make any smaller circles or until you have reached the last color. That should do it for your comet!

You might want to save two versions of this picture. Here's why: Go to the palette window and change the palette to sixteen shades of grey with white being the brightest and black being the darkest. Now look at your picture. It should look like a photograph! What you have just done is a process known as "image processing." You didn't change anything on the picture, but you changed the colors of the palette. This is what the original photographs of celestial objects usually look like before they are given false color.

METAL

You're probably thinking by now, "Geez! Can't this guy come up with anything original?" Well you'll be happy to know that the "METAL" picture is completely original. Be sure to set your palette up before you

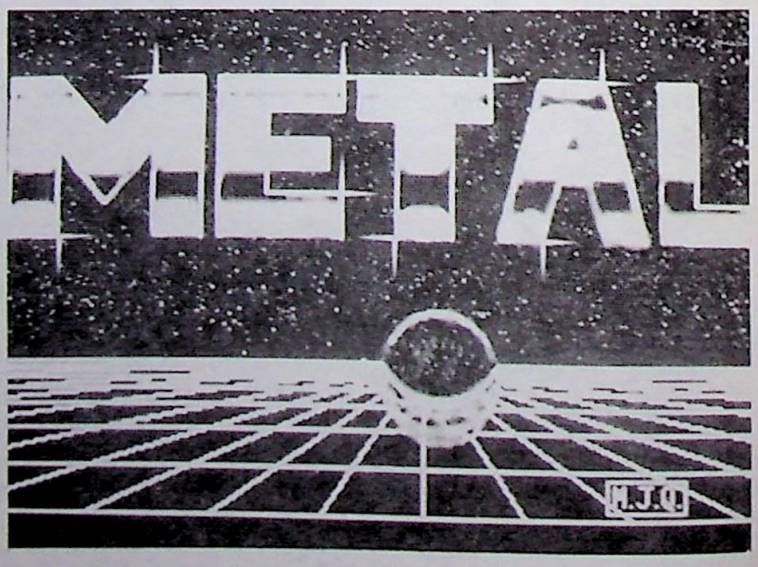
begin drawing. I would suggest using 16 shades of grey or blue or some combination of those colors. You might want to try to make your letters gold. Another thing you might want to do is, if you want stars in the drawing, to go ahead and put them in now, using dark shades of grey (lighter shades tend to stand out too much and draw attention away from the main subject, although it's OK to put a bright star here and there) using the Airbrush tool for speed.

I'll start off the procedure with how to draw the 3-dimensional graph at the bottom of the screen. This is a fairly easy task to do. I'm sure you've all heard the phrase, "Easier said than done!" Well with the graph it's, "Easier done than said!" Start off with the top horizontal line. The rest of the graph will be drawn from this. Now draw a vertical line exactly in the center, going from the horizontal line that is already drawn to the bottom of the screen. Notice where the two lines meet? That's where all the other lines will be connected. In other words, that is the "vanishing point." If you've ever been taught perspective drawings, you should be familiar with this. Pick a side of the vertical line to draw from. You will leave the other side empty so that when you are finished with your side, you can just make a mirror image to the other side. Draw a line coming from the vanishing point to the bottom of the screen about 15-20 pixels to the left or right (depending on which side you're drawing on) of where the vertical line meets the bottom. Draw another line from the vanishing point to the bottom, the same distance between this line and the first as the first and the vertical line. Continue this until you have reached the edge of the screen. Now draw lines from the vanishing point to the edge of screen fairly close to the bottom. Draw another one above it with less distance above it than the last. Continue this with less and less distance between the lines until you have reached the top. By this time, you are probably only one pixel away from the previous line. Pick up that whole side, the one you have just drawn, as a brush. Flip it horizontally and paste it on the opposite side. That should give you a complete graph.

Here's another way to draw a 3D graph: if your paint package has a 3D option or a Perspective mode, it will come in handy. On a blank screen, draw a grid with the lines about 5-10 pixels apart. Make it about 2/3 as tall as the screen and about 5 squares (not pixels) wide. Pick it up using the Brush Selector (or lasso) tool, clear the screen, select 3D or Perspective mode, and increase the z-axis. It should appear to be leaning backwards. When you have it as far back as you want it, move it to the bottom of the screen and paste it. Continue to do this until the bottom section of the screen is filled. If you use Perspective mode, you will probably notice that it can get extremely slow at times.

Spell out what ever you want in the metal lettering. It doesn't have to be "METAL." Make wire frame letters using the Unfilled Polygon (or frame) and Line tools. Most letters should not be too difficult. If you find it too hard to do the lettering, use a font. Type what you want, then enlarge it to a suitable size. Once enlarged, it most likely will be extremely jagged. Just use straight lines to connect the outer edges of the jags and fill them with white. If you are creating your own letters, be sure to fill them with white.

Now you have the basic structure of the picture. All you need to do is the detailed work of the reflections in the metal. Using the Filled Rectangle tool (making sure the gradient fill is turned off if you were using it before), make a black bar across the entire screen just a little below the center of the letters. Do the same for the top and bottom of the letters, except this time make the bar only about 1-3 lines high and leave only one or two white pixels at the edges of the letters. Redraw the edges of the letters that were erased by the bars. Make sure you DON'T fill the blackened part of the letters. Anywhere the black meets the edge of a letter (a corner of black), put about two pixels of black above and below on the white (you'll see what this does soon).



The final step is to make the letters appear metallic. Choose a brush about 4 pixels in diameter and select "Smooth" from the Mode menu. Smooth the edges of the black inside the letters (mostly on the horizontal black edges). The more you go over the black edges, the smoother they will appear. If you want a metal ball (or what I call a "pinball"), decide where you want it first. It doesn't have to be at the same place mine is. I put this in this picture because it goes good with the rest of the picture, but it is a good example of reflecting images off a round surface, which you can use in several different kinds of drawings such as the reflection off a drop of water, a wine glass or bottle, or even a shiny car door.

Once you have decided where you want your metallic ball, imagine you are floating inside your picture and the metal ball is your eyeball (or your point of reference in space) and think of what the picture would look like if you were looking at it from there. If you want, sketch it on a piece of paper. Now, imagine seeing that exact same image reversed (in a mirror). Now imagine you have a photograph of that. Picture what that would look like if you could wrap it around a ball. Now draw that ball with the photograph wrapped around it! The first thing I would do is draw a bright outlined circle, then draw your imaginary ball inside that circle. When you are through, smooth the edges of the circle and the image on the circle if it needs it. If you don't get it right the first time, keep trying! Try drawing each of the imaginary steps on paper then copy the final drawing onto the screen if you like it.

I hope these articles help you. If you come up with a masterpiece you would like everyone to see, send it in! We'd be glad to see it!

Errata

EGOed Errata

Well, it seems that there was at least one problem with our EGOed text editor NDA. Ram Rajadhyaksha reported that when he tried to run Arkanoid II from a Hard Disk with EGOed installed, his system would crash. With EGOed removed, Arkanoid II would work fine. Apparently Arkanoid II did not like the way EGOed was allocating and releasing memory for the variable PrintRecord in the DAInit procedure. This was also causing some ProDOS 8 programs to crash. In the **EGOed** folder on the ***GS+*** disk, you will find the latest version of EGOed that fixes this problem. To use this updated version, copy it into the **System:Desk.Accs:** folder of your start up disk. You will also find a source code file, "EGOed.Fix.p", that contains the new source code for the corrected procedures. This is **not** the complete source code file! You should use this file to replace the appropriate procedures in a **backup** copy of the source code that originally came with EGOed. There have been two other changes to EGOed that are cosmetic only. First, the "Font" button is now square instead of round. And second, the Print routines have been changed so that the print dialogs will correctly report the name of the file that is being printed.

There are two other files in this folder: "EGOed.r" and "EGOed.rez". "EGOed.r" is the resource file for EGOed. As opposed to creating this file with TML Pascal II's Resource editor, I used the APW utility DeRez to turn the original Resource file, "EGOed.r", (which was created with TML Pascal II) into the REZ source code file: "EGOed.rez". I then re-compiled "EGOed.rez" with the APW resource compiler. After changing the file type of the resulting file to $00 (and the file name to "EGOed.r"), you have a resource file that is identical to the original, except that it's 2K smaller! I then went back to TML Pascal II and re-compiled EGOed. The new, smaller, resource file is automatically linked in and the resulting NDA is 2K smaller than if I had just used the tools built into TML Pascal II. This may sound like a bunch of work for a measly 2K, but that 2K can really make a difference if you are using EGOed from a floppy based system!

(A Beginner's Desktop Programming Tutorial and Program Written in ORCA/C)

by Steven W. Disbrow and Jeff H. Walker

Over the last few month's, several of our readers have written in saying that, although the utilities have been great, they wanted to see a tutorial program and/or article written for people just beginning with IIGS programming.

This article and the accompanying program, Rotator, have been written with those very things in mind. The Rotator program is a simple IIGS desktop application, written in ORCA/C, with four menus, two windows, New Desk Accessory (NDA) support, and, just to make things interesting, a slowly rotating 3D hexagon. It runs under System 4.0 or System 5.0.

Here are a few things that should be noted about this article and accompanying program:

1) This is NOT the Nucleus demo! Thus, the hexagon does not exactly threaten to burn up your computer with its speedy rotation. In a future article, we will learn how to speed things up by mixing our C code with Assembly.
2) To get the most out of this article, or any other IIGS programming tutorial, you **need** to have access to Volumes 1 and 2 of the *Apple IIGS Toolbox Reference.*
3) While this article is intended to discuss concepts and reinforce them with examples of working source code, some of the items discussed (such as the parameters for defining a new window) were simply too big to fit here.
4) Rotator does not take advantage of any of the new features of System 5.0 (resources, Pop-up menus, etc.) as they are beyond the scope of a simple beginner's tutorial. System 5.0 concepts and enhancements will, however, be discussed where appropriate.
5) This article was written to be read along with the Rotator source code on the *GS+* disk. The source code has been heavily commented and provides some commentary that did not lend itself to inclusion in this article. This source code is in the file, **:GSP.V1.N3:Rotator:Rotator.CC.**

What's a IIGS Tool Set?

A IIGS Tool Set is a group of procedures and functions that you use to perform related tasks. For example, the QuickDraw II Tool Set contains a bunch of procedures and functions that are used to draw text and graphics on the Super High Resolution screen. In addition, the Font Manager Tool Set is comprised of routines that manage the different fonts you have installed on your IIGS, and the Print Manager Tool Set gives you access to the standard IIGS print routines.

Some of the IIGS Tool Sets (the ones that have been debugged) are built into the IIGS ROM and some are kept on your startup disk. The complete set of all of the IIGS Tool Sets are known collectively as the IIGS Toolbox.

These Tool Sets have been written so that programmers don't have to write their own routines to do these common tasks. No need to "re-invent the wheel," so to speak. Also, since everyone is using the same tools, IIGS desktop applications all have a similar appearance and method of operation, which reduces the time it takes for a user to learn how to use a new application.

Begin at the Beginning!

The first thing you must do in a IIGS program, is start up the *Tool Sets* (see "What's a IIGS Tool Set?" sidebar) that your program needs. Starting up a Tool Set prepares it for use by your program. Until recently, starting up the IIGS Tool Sets involved allocating memory for, loading, and starting up each tool individually. Also, since some Tools Sets may actually use other Tool Sets to help perform their tasks, the Tool Sets your program uses **must** be started up in the correct order. Unless you properly start up the Tool Sets, trying to use them will almost certainly cause the IIGS to crash. This system provides an incredible amount of flexibility, but, as you might imagine, it's a royal pain in the rear. Thankfully, more and more language products are taking this burden on themselves and making this process easier for the programmer. ORCA/C provides the `startdesk();` procedure that automatically starts up, in the correct order, all of the more commonly used tools. All you have to specify is the video mode you want your program to run in, 320 or 640. (A list of the tools started by `startdesk();` can be found in the Rotator source code on your *GS+* disk and on page 308 of the ORCA/C manual.) Apple has also addressed this problem by adding the `StartUpTools();` routine to the Tool Locator Tool Set in System Software 5.0. This routine gives you the flexibility of deciding exactly which tools will be started but it places the burden of allocating memory, loading the tools and the order in which to start them, on the Tool Locator. An example

```
void SetUpMenus(void)  {
  int MenuHeight;
  /* The 0 passed to InsertMenu() inserts that menu at the 'front' of the menu bar */
  /* Create the Rotate Menu */
  InsertMenu(NewMenu(">> Rotate \\N4\r--Hexagon\\N500*Hh\r.\r"),0);
  /* Create the Edit Menu */
  InsertMenu(NewMenu(">> Edit \\N3\r--Undo\\N250DV*Zz\r--Cut\\N251D*Xx\r"
                     "--Copy\\N252D*Cc\r--Paste\\N253D*Vv\r--Clear\\N254D\r.\r"), 0);
  /* Create the File menu */
  InsertMenu(NewMenu(">>  File \\N2\r--Close\\N255DV*Kk\r--Quit\\N256*Qq\r.\r"), 0);
  /* Create the Apple menu */
  InsertMenu(NewMenu(">>@\\XN1\r--About Rotator...\\N300*?/V\r.\r"), 0);
  FixAppleMenu(1);         /* add Desk Accessories to menu #1, the Apple Menu */
  MenuHeight = FixMenuBar(); /* fix the menu sizes, and then     */
  DrawMenuBar();             /* draw the completed menu bar      */
 }
```

Figure 1.

of using the `StartUpTools();` function can be found on your *GS+* disk in the file **EGOed.Fix.P** in the folder **EGOed**. Since Rotator is written in ORCA/C, I have used the `startdesk(640);` procedure to start up the tools that are needed.

Menus

After the `startdesk(640);` procedure has been executed, all of the tools we need are started up and all that remains to do to prepare the desktop is to create our menu bar and menus. This is an amazingly simple process, even without using the new Resources of System 5.0. The procedure used to create all of the menus in Rotator is shown in Figure 1 (most comments have been omitted to save space).

The contents of each menu are defined in a specially formatted string (the meanings of these strange formatting codes are explained in the comments in the Rotator source code on your *GS+* disk and on page 13-14 of the *Apple IIGS Toolbox Reference: Volume 1*). These strings are used as input for the Menu Manager tool, `NewMenu()`. The result of this call is passed to another Menu Manager tool, `InsertMenu()`, which places the new menu in the menu bar. You can create your menus and insert them in any order you wish, but in this example we have created and inserted them in right-to-left order.

The next step is to add NDA's to the Apple Menu. One tool call, `FixAppleMenu(1);`, is all it takes to add NDA's to menu number one, the Apple Menu.

The next statement, `MenuHeight = FixMenuBar();`, tells the Menu Manager to look at the menu bar we have created and compute its vertical size. This value, which we here assign to the variable, `MenuHeight`, is usually of no use, except in programs that constantly change the menu bar in some way. The last statement in this procedure, `DrawMenuBar();`, draws the menu bar and makes it visible at the top of the screen. That's all there is to it!

The Big Event!

Once the tools are all started and the menu bar is set up, we can get to the meat of the program. In a IIGS desktop program, the "meat" is the *Event Loop*. The basic principle of the Event Loop is that, since most or all of the menu choices are available at once, and there may or may not be windows open and some of those might be NDA windows and the user can choose to interact with **any** of these things at almost any given time, you basically don't know what the heck the user is going to try next! Thus, we enter a loop. On each pass through this loop, we check to see if anything happened. Anything that does happen is called an *Event*. In fact, if nothing at all happens, that's an Event too, a *null* Event. Information about these Events are kept in *Event Records*. These Events can come from a variety of sources: Tool Sets like the Window Manager, devices hooked to the system, the system itself, the application, and, of course, the user. We go through this process over and over again, until the user selects the applications "Quit" option. That's why it's called an Event **Loop**.

There are a couple of ways to check for Events. The first, and most difficult, is to use the Event Manager tool `GetNextEvent()`. This returns an Event Record that your program uses to determine the exact nature of the Event. Once you know what the Event was, your program can act on it accordingly. This includes activating windows, moving windows, opening NDA's, pulling down menus and lots of other stuff that can quickly make desktop programming a real nightmare.

The second, and infinitely easier, method for handling Events, is to use the *TaskMaster*. TaskMaster is a Window Manager tool that automatically calls `GetNextEvent()` for you and, if the Event was one that TaskMaster knows how to deal with, performs all of the actions needed to handle the Event. When TaskMaster is finished, it returns a code that lets your application know if there is more work to be done. Some of the more tedious tasks that TaskMaster can handle for you include, activating windows, drawing standard controls (radio buttons, Pop-up menus, etc.), zooming windows, opening NDA's, and pulling down menus. For example, if the user selects an NDA from the Apple Menu, TaskMaster opens the NDA for you and then returns a null Event code. On the other hand, if the user selects a menu item other than an NDA, TaskMaster still pulls down the menu and tracks the movement of the mouse for you, but when the user actually selects the item, TaskMaster returns a code that says, "The user picked a menu item that I don't know how to handle." TaskMaster also places the ID of the menu item selected in an Event Record so that your program can take it from there.

So, using TaskMaster, a minimum Event Loop, including comments, for Rotator takes the form shown in Figure 2.

Notice that I said this was the minimum Event Loop for Rotator. With this Event Loop you get your menus pulled down, your windows activated, your NDA's opened automatically and the hexagon slowly spinning in its window. What we don't get, however, is an Edit Menu that reacts intelligently to the presence of NDA's. Since Rotator does not do anything that even requires the Edit Menu to exist, you may wonder why this is a concern at all. Well, since we went to the "trouble" of supporting NDA's in the first place, we should do it right, no? Besides, it's simple! To see for yourself, look at Figure 3. (For the exact placement of this code within the Event Loop, be sure to look at the Rotator source code on your *GS+* disk.)

Figure 2.

```
while (!QuitThisProgram) { /* Do this until 'Quit' is selected */
  /* Call Task Master. TMEvent is the return code. -1 is an Event Mask that tells       */
  /* Task Master to handle all the Events it can.  RotEvent is the Event Record to use. */
   TMEvent = TaskMaster(-1,&RotEvent);
   switch (TMEvent) {  /* What kind of event was it? */
     case wInSpecial : /* Special menu item (ID < 256) selected  */
     case wInMenuBar : /* Ordinary menu item (ID > 255) selected */
      /*wmTaskData contains the Menu ID and the Menu Item ID, so pass those to our Menu handler*/
      HandleMenu((int)(RotEvent.wmTaskData >> 16),(int)RotEvent.wmTaskData);
      break;
     /* User clicked mouse in a window's close box. We use FrontWindow() to find out which */
     /* window it was and pass that window's handle to our KillWindow() routine.          */
     case wInGoAway : KillTheWindow(FrontWindow()); break;
   }
   /* If the Hex Window is open, process the next point. This little scheme lets us keep the */
   /*Hex rotating no matter how many windows are open or which one is active.  It also slows */
   /*down the 'animation'.                                                                   */
   if (HexWindowOpen) HexRot();
 }
```

```
/* First, we check to see if any windows are open.  If there are, we check to see if the */
/*FrontWindow() is an NDA.  If it is, GetWKind() returns a nonzero value in bit 15 and   */
/*we enable all of the edit items. In any other case, we disable all of the edit items.  */
/*We also enable or disable the Close menu item based on if ANY windows are open or not. */
if (FrontWindow() != NULL) { /* FrontWindow() returns NULL if no windows are open. */
  EnableMItem(CloseItem);
  if ((GetWKind(FrontWindow())&0x8000)) EnableEdItems(); /* Enable Edit Menu Items for NDA */
  else DisableEdItems(); /* Disable all Edit Menu Items */
 }
else {
  DisableMItem(CloseItem); /* No windows are open. Disable the Close Item. */
  DisableEdItems();
 }
```

Figure 3.

We Do Windows...

Now that we've got everything set up and our Event Loop happily chugging away, we need to open some windows. Once again, this is a fairly simple task. The first thing you must do is set up a window parameter list that describes the attributes (title, position, colors, etc.) the window will have when created. (This parameter list is a very long one with a lot of options. For the details on what all of these parameters mean and the values that they can have, refer to pages 25-83 to 25-88 of the *Apple IIGS Toolbox Reference: Volume 2*.) Here also, the C language makes things easy for us. The definition of the hexagon windows parameter list is coded as:

```
static ParamList HexWinParam = {SizeOfParamList,
    0xC0A0,"\p Hexagon ",0L,{0,0,0,0},NULL,
    0,0,0,0,0,0,0,0,0,0L,0,NULL,NULL,NULL,
    {40,20,(int)(((double)Vy/1.5)+15),
    (int)((double)Vx/1.5)},(GrafPortPtr)-1,NULL};
```

Once we have the parameter list defined, all we have to do is call the Window Manager tool, `NewWindow()`. When we call `NewWindow()`, we pass it a pointer to the parameter list we want it to use to create the window. After creating the window, `NewWindow()` returns a pointer to it. At this point, it's a good idea to set up a boolean (logical) variable to keep track of the fact that the window is actually open. So, when we first open the window for the hexagon, we code:

```
HexWindow = NewWindow(&HexWinParam);
HexWindowOpen = true;
```

Now then, having opened one window, suppose you open another (and another, and . . .). How do you keep track of which window is which? Since TaskMaster automatically takes care of window activations and bringing an activated window to the front of all the other windows on the screen, all we need to do is use the Window Manager tool, `FrontWindow()` to get the window pointer of the front window. We then compare this pointer to the values that were returned by `NewWindow()` when each of our windows was created.

Now that we have our windows open and know how to identify and close them, let's take a look at drawing in a window. First of all, you don't actually draw in the window, you draw in a *GrafPort* associated with the window. A GrafPort is just a fancy name for an area of memory set aside for drawing. Every window has its own GrafPort and you can switch among them at will. But, you can only draw in one GrafPort at a time.

Rotator draws in its two windows in two different ways. The first method used is a *content definition* procedure. A content definition procedure is a procedure that is called whenever the contents of the window need to be redrawn. If, for example, one window is partially hidden behind another and then activated and brought to the front, the contents of the window must be redrawn. If TaskMaster is being used, it will call the window's content definition procedure and the window will be redrawn, automatically. The "About Rotator..." window is an example of a window drawn in this manner. When the

window is first created, in the `HandleMenu()` procedure, we associate it with its content definition procedure by storing a pointer to that procedure in the appropriate field of the window parameter list, like so:

```
AboutWinParam.wContDefProc = (VoidProcPtr)AboutIt;
/* Create it */
AboutWindow = NewWindow(&AboutWinParam);
/* and mark it as open */
AboutWindowOpen = true;
```

The procedure `AboutIt()` is simply a procedure that makes `AboutWindow` the current window and draws the text into it. Thus, whenever TaskMaster determines that this window needs to be updated, it simply calls the `AboutIt()` procedure and the window is redrawn. Content definition procedures are most useful when used with windows whose contents never change, or that change according to a simple procedure or formula.

The second method used by Rotator is the one used in drawing in the hexagon window. Since this window displays a constantly changing image, the basic idea is to just draw the thing whenever it's time to do so. So, each time through the Event Loop, we check to see if the hexagon window is open. If it is, we compute one of the 12 new points needed to describe the next position of the hexagon. After the twelfth point is computed, the hexagon window's GrafPort is made the current GrafPort and the hexagon is drawn in its new position. Note that there is no need to worry about what portions of the hexagon are visible, the QuickDraw II Tool Set and the Window Manager Tool Set automatically *clip* the portions that cannot be seen. That is to say, they just don't get drawn on the screen.

Quit It!

All that remains to consider in our program is what to do when the user finally chooses the "Quit" option. Basically, all any program has to do is free any memory that it was using, make sure that all NDA's get closed, and properly shut down all of the Tool Sets it was using. In Rotator, the only memory we are using is the memory required to maintain the two windows. So, we simply check to see if they are open, and, if they are, close them:

```
if (HexWindowOpen) KillTheWindow(HexWindow);
if (AboutWindowOpen) KillTheWindow(AboutWindow);
```

TaskMaster will close any NDA's that might be open, so all that remains for us to do is to shut down the tools that we started. As you might expect, Tool Sets must be shut down in the reverse of the order that they were started up. Fortunately, shutting down the Tools is much easier that starting them up! In ORCA/C all you have to do is call the `enddesk()` procedure and all the tools started by `startdesk()` will be shut down correctly.

That's All Folks!

Basically, that's all there is to writing a IIGS desktop program. The main thing I have found that keeps people from writing IIGS desktop programs is learning the concepts involved. But, once you have an understanding of those concepts, the code itself is fairly easy to write. In fact, it took about 10 times longer to write this article explaining those concepts than it did to write the Rotator program that uses them.

I hope you have found this article and the accompanying program helpful. One of the main reasons for the existence of *GS+* is to help as many people as possible learn how to program the IIGS. After all, the more programmers there are, the more software there will be and the longer the IIGS will be around. If you have ***any*** questions or comments about this article or program, ***please*** let us know about them. If you don't, what will we put in next issue's new programming Question and Answer column? Send your questions to our regular address, "Attention: Programmer's Queue & A."

GS+ welcomes program submissions. If you have a program you are proud of; send the source code, executable file, and an accompanying article explaining what it does (and any tips on programming it) on a disk to:

GS+ Submissions
c/o EGO Systems
P.O. Box 15366
Chattanooga,TN 37415

If we do not use your submission, we will return it to you if you enclose a self-addressed stamped envelope. We only publish programs that have not been published elsewhere or released into the public domain. See the Writer's Guide file on this issue's companion disk for more information (see page 18 on how to use the companion disk).

First, lets talk about Contest #2. The point of this contest was to see who could design the best new Arkanoid II levels. While it was not necessary to design 65 new levels, there were quite a few of you that did. An almost equal number of you sent in 5 or fewer levels. So, we decided that instead of picking a winner and a runner-up, we would just pick two winners. One from the folks that sent in a set of 65 (or so) levels and one winner from those that sent in 5 (or so) levels. Well then, without further adieu...

Our "65 levels" winner is Daniel Grossberg of Lakewood, NJ. As a reward for his 65 stylishly evil Arkanoid II levels, Daniel selected *The IIGS Toolbox Reference: Volume 1*. His levels can be found on your *GS+* disk in the folder, **C2.Winners**, in the file "GSP.DG.Ark."

Our "5 Levels or Less" winner is Jeff Barnes of Dillingham, Alaska. Jeff turned in three "concept" levels: the state of Alaska (level 7L. The silver blocks represent various cities, including Dillingham), the Exxon Valdez spilling its guts (7R), and, finally, a violently erupting Mt. Redoubt (8L). Very clever. For his prize, Jeff selected Crystal Quest by Cassidy & Greene. These environmentally conscious levels can be found on your *GS+* disk, in the same folder, in the file "GSP.JB.Ark." Thanks to everyone that entered the contest. At this point, we hope we never see another Arkanoid II level again!

Which brings us to our new contest. All you have to do is design a great HyperStudio v2.0 stack. It can be about anything you want. Go crazy! We will award prizes to one winner and one runner-up. The prizes:

The IIGS Toolbox Reference: Volume I, II or III
Exploring GS/OS and ProDOS 8
Xenocide
Graphic Disk Labeler
A One Year Subscription To *GS+*

The Rules:

1) Send your entries on diskette to:
   GS+ Contest #3 c/o EGO Systems
   P.O. Box 15366
   Chattanooga, TN 37415
2) Or, pack your entry with ShrinkIt and send it to 'Obnoxio' via America Online.
3) Entries must be received no later than April 15,1990.
4) Be sure to indicate your prize choice and a phone number we can reach you at.
5) Only 2 prizes will be awarded, but Honorable Mentions will get their names and entries published along with the winner and runner-up.
6) Stacks submitted should **not** be password protected.
7) Naughty stacks won't qualify for a prize, but we really would like to see some just the same!
8) We welcome your ideas for new contests. If you have one, send it to the above address.

Before you turn the page, READ THIS . . .

Starting with this issue, *GS+* will be accepting, and printing, advertisements. Before you feed us to your pet piranha, let us tell you why.

Money. While we have been making enough to pay for the production of the magazine, we have not been making enough to pay for those frivolous little things like rent and food. Thus, we have been faced with two choices: raise the price or take ads. We do **not** want to raise the price! So, last issue, we decided to begin taking low cost classified ads from you, the readers. This went over like a lead balloon. Only one response.

So, we come back to the idea of taking regular ads. But, the problem with this is, how can we take these ads and still maintain the integrity of our reviews? After much thought on this (and many conversations with readers) it was decided that the only way to do this was to limit the types of ads that we publish. So then, what types of ads will we publish? Basically, we will only publish ads from "4th party" vendors or resellers. You know, mail-order firms. Places like Programs Plus, Roger Coates and, as featured in this issue, LRO Computer Sales. We will **not** take ads from hardware manufacturers (Applied Engineering, ComputerEyes, etc.) or software publishers (Activision, Byte Works, etc.).

This solution has several advantages. First of all, it helps us pay the rent and stay in business. Second, since we don't take money from the people that actually **make** the products, we maintain the integrity of our reviews. And third, you the readers now have another resource in the quest for the lowest possible price.

Rest assured, you will have the final word on this. If you do not want *GS+* to have ads at all, let us know about it. If enough of you say, "No!" to the idea, we will stop. After all, this is America and it is your eight bucks.

LRO Computer Sales





Memory Expansion

Applied Ingenuity
GS-Juice Plus
0k - $69; 1 meg - $146; 2 meg - $230;
4 meg - $399

Applied Engineering
GS-Ram Plus
0k - $135; 1 meg - $214; $300; 3 meg - $385;
4 meg - $470; 6 meg - $637

Checkmate Technology
MultiRam GS
0k - $59; 512k - $112; 1 meg - $164;
1.5 meg - $214; 2 meg - $266

Checkmate Memory Saver GS
$119 while supply lasts

AE Ram Keeper GS - $148

1 meg 80ns Chip set for GS-Ram Plus and Juice Plus - $87 with 5yr warranty!

256k 150ns Chip set for Apple IIgs Memory Exp board, GS-Ram, Multiram, many others - $26 with 5yr warranty!!!

256k 100ns Chip set for RamPack4gs / GS-Ram Ultra - $26

Apple Hardware

Apple IIgs CPU	$879
Apple RGB Color Monitor GS	$489
Apple 3.5 Drive	$329
Apple IM II printer	$489
Apple IM LQ	$969
Apple IIgs Memory exp 1 meg used	$140
Apple II SCSI	$ 96

AppleSauce BBS

of New York
(212) 721-4122
Online Store, PD Transfers, Great Support!

Hard Drives

AppleCrate 100 with Apple SCSI	$1029
AppleCrate 80 with Apple SCSI	$ 870
AppleCrate 60 with Apple SCSI	$ 770
Kache Systems 40 with Apple SCSI	$ 699
Applied Ingenuity OverDrive 40	$ 539
Applied Ingenuity InnerDrive 40	$ 589
Applied Ingenuity OverDrive 20	$ 409
Applied Ingenuity InnerDrive 20	$ 474
Applied Ingenuity InnerDrive 100 with FastKache	$1189

Call Toll-free

1-800-869-9152, M-F 9-5 CST.

Misc.

Transwarp GS	$289
Sound System II Stereo Speakers	$ 99
Sonic Blaster	$104
Conserver GS	$ 89
System Saver GS	$ 71
Box of 10 Maxell Platinum DSDD 3.5" Diskettes	$ 16
3.5" Disk case with lock holds 100	$ 14
with purchase of disks-	$ 7
AMR 3.5 Drive	$184

Modems

US Robotics 14.4kps Courier HST With Cable	$ 599
US Robotics Dual Standard (V.32/HST)/w cable	$1039
Smart One 2400 ext Modem with Cable	$ 159
Prometheus ProModem 2400g Internal	$ 149
Pratical Periphials ext 2400bps with MNP L5	$ 259
Supra 2400 with cable	$ 139
Maxon 2400 ext modem with Cable	$ 107

Call Toll-free 1-800-869-9152, M-F 9-5 CST.

Visa/MasterCard/COD/Checks acceptable methods of Payment. Shipping on most orders $6. Credit card not charged until the merchandise ships. If you don't see what your looking for, CALL.

LRO Computer Sales
665 West Jackson Street
Woodstock, IL 60098
(815) 336-8686

MasterCard

VISA

The first thing you should do is **MAKE A BACKUP COPY OF YOUR GS+ DISK WITH THE FINDER!** Next, put the original in a safe place! Well, now that that's out of the way, lets see what's on the disk.

The disk itself is named **:GSP.V1.N3:** and it contains 8 folders. In order, they are:

BrushWGreatness

This folder contains all of the pictures discussed in "Brush With Greatness" (page 8). The pictures are in three subdirectories: **Comet**, **Jupiter**, and **Metal**. There is one picture, "HALLEYS," in the **Comet** directory. There are two pictures in the **Jupiter** directory, "JUPITER.BW" and "JUPITER.COLOR." The **Metal** directory contains five files, "METAL1" through "METAL5." These pictures are not compressed, so you should be able to view them with any IIGS specific paint program.

C2.Winners

This folder contains the winning Arkanoid II levels from Contest #2. The files are named "GSP.DG.Ark" and "GSP.JB.Ark." For more information about these levels see page 17. To use these levels, copy them into the **:ARCII.LEVELS:** folder of your **backup** copy of Arkanoid II. Then, when you start up Arkanoid II, press the <C> key to enter the construction mode. When the construction set appears, click on the "Load" button. A file selector box will then appear. Double-click on the **LEVELS** folder and then double-click on the file containing the levels you wish to play. After the levels are loaded, click on the "Quit" button and you will be returned to Arkanoid II's main menu. From this point on, you will be playing with the levels that you selected in the construction mode.

Compat.Guide

Our Compatibility Guide department is taking a leave of absence this issue as we re-test all of our software on our new 1 megabyte, ROM 3 IIGS. But, this folder on your *GS+* disk contains the complete text of the last two installments of this department in the files "V1.N1.COMPAT"and "V1.N2.COMPAT." You can use EGOed (see below) or any other program that can read text files to read or print these files.

EGOed

This folder contains the latest version of our EGOed text editor NDA which was originally presented in the November/December 1989 issue of *GS+*. For more information about the four files in this directory, see the Errata column on page 11.

Icons

This folder contains the eight new Finder icons discussed in the "Icons" column on page 21. To use them, copy them to the **Icons** folder of the disks that you run each of these programs from. The next time you are in the Finder, you should see the new icons for these programs.

Rotator

This folder contains the two files accompanying the "Rotator" tutorial on page 12. The first, "ROTATOR," is the executable program and the second, "ROTATOR.CC," is the ORCA/C source code for Rotator. To run Rotator, simply double click on its icon from the Finder. You can use EGOed or any other program that reads text files to read or print the "ROTATOR.CC" file.

Stacks

This directory contains one file, "GSP.V1.N2.Stack." This is the stack we created during the course of our HyperStudio v2.0 review. **You must have HyperStudio v2.0 to use this stack!** It is a stripped down stack version of the November/December 1989 issue of *GS+*. This file (and its icon) is public domain. Feel free to upload it to Bulletin Boards and give copies of it away. We have already uploaded it to America Online and GEnie, so don't bother with those.

Writers.Guide

There is only one file in this folder: "Writers.Guide." This is a plain text file that tells you what you need to do to write reviews, articles, programs, etc. for *GS+*. Use EGOed or any other program that can read text files to read or print this file.

GS+ is pleased to bring you even more great new Finder icons for those programs that forgot to bring their own. To use these icons, copy them from the **Icons** folder of your *GS+* disk into the **Icons** folder of the disk that the program they represent is on.

This time, we got a great big helping hand from Karl Bunker of beautiful Boston, MA. Karl sent us some really **great** icons for the programs "ShrinkIT," "Copy II+," "ORCA," and the original "AppleWorks." Karl used DIcEd (he did not say which version) to create these icons and did a really great job. The ShrinkIT icon is especially good. Thanks again for the icons, Karl!

Also in your Icons folder, you will find icons for a few of the programs reviewed in this issue of *GS+*: "The Three Stooges" and "Xenocide."

We also have custom icons for the "Rotator" program discussed on page 12, and the *GS+* HyperStudio stack that we developed during our review of HyperStudio. Note that this last icon assumes that HyperStudio is located in the root directory of your start up disk. If you have HyperStudio hidden away in a folder or on a disk other than your start up disk, you will have to use an icon editor to change the icon so that you can run this stack by double-clicking on it.

All of these icons (except for Karl's, of course) were created at the last minute by Steven W. Disbrow using DIcEd version 1.1. DIcEd is a ShareWare ($15) icon editor by DAL Systems. You can contact DAL Systems at POB 287, N. Liberty, IA, 52317. DIcEd is also available from just about any of the better on-line services.

Remember, if you have a neat icon that you did yourself, share it with us here at *GS+*. Be sure to tell us about the program and any tricks you used to create it. If we use it, we'll put your name here and give you a hearty handshake in thanks for an icon well done.

HyperStudio v2.0 - retail $149

Not Copy Protected
Requires 768K of RAM (1.25MB recommended)
Program by Ken Higgins, Michael O'Keefe & Dave Klimas

Roger Wagner Publishing, Inc.
1050 Pioneer Way, Suite "P"
El Cajon, CA 92020
(619) 442-0522

Reviewed by Steven W. Disbrow

First of all...

Let's take a second to discuss exactly what HyperStudio is supposed to do. HyperStudio is a program that allows its users to create Hypermedia applications. What, then, is "Hypermedia"? Hypermedia is a term used to describe an information delivery system that mixes traditional media (text, video, sound, etc.) and makes it *interactive*. As an example of this, think of a system that would allow you, on November 1, 1992, to interactively review ALL materials (video, audio, text) related to the 1988 Presidential campaign. Specifically, if you asked yourself, "When did Bush say Pearl Harbor Day was?", you would then search for the text, "Pearl Harbor Day." This might bring up a video of Bush's speech in which he mistakenly places Pearl Harbor Day in September. "Ah. There it is. I'd like a printout of that!" You click the mouse on a picture of a printer and the text of the speech begins to print. "Got it. Well now, how did his opponent capitalize on this mistake? For that matter, who was his opponent?" Click on the picture of the Donkey and you get a profile of... "Dukakis? Who was he?" And so on, and so on. After reviewing all of this material, the system might even let you cast your vote, right from your home. No fighting traffic during lunch and no dodging those annoying exit polls! Well, HyperStudio is not **that** powerful, but it should give you an idea of the power that the relatively simple idea of mixed media could someday deliver.

In fact, the initial versions of HyperStudio were not very powerful at all. My biggest complaint with versions 1.0 and 1.2 of HyperStudio was that I could not keep the darn things running for more than about five or ten minutes at a time. To add insult to injury, a large portion of the advertised features of the program simply did not work! So, I gave it a pretty good roasting in the first issue of *GS+* and said that it was a piece of trash that no one should waste their money on. At least not until Roger Wagner Publishing delivered the upgrades they had promised. About 6 months after the initial release of HyperStudio, they delivered, in a **big** way!

Version 2.0!

Everything that HyperStudio v1.0 and v1.2 promised, HyperStudio v2.0 delivers. All of the features work as originally advertised and they even threw in a few things that they didn't advertise! Best of all, almost all of the bugs present in the earlier versions have been fixed, the happy result of this is that HyperStudio v2.0 has only bombed on me two or three times in the month and a half that I've had it! Much, much better than the four crashes an hour that I was having to deal with in previous versions. (From this point on, when I refer to "HyperStudio," I am speaking of version 2.0 unless otherwise specified.)

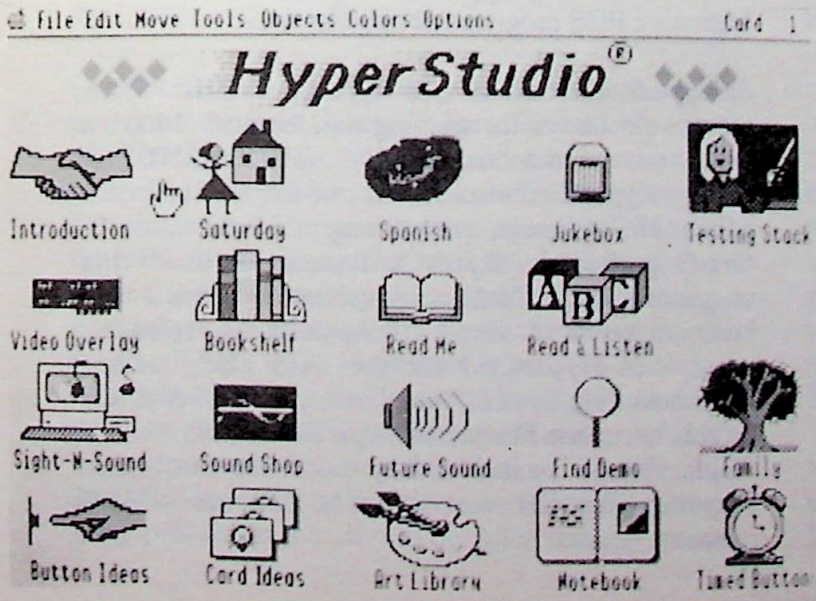
So, having said all that, what does HyperStudio actually deliver? HyperStudio allows you to easily mix text, graphics, sound, and video (if you have a Video Overlay Card or videodisc player) on your IIGS. These elements are arranged one screen at a time. Each screen of information is called a "card" and the collection of all cards in a particular HyperStudio application is called a "stack" of cards. The first card in a stack is called the "Home" card. "Buttons," either visible or invisible, are used to link cards to each other or to other stacks, or to videos, sounds, graphics, etc. You can even run other GS/OS programs from inside a stack that you create with HyperStudio. For example, in the picture on the next page, we see a slightly modified version of HyperStudio's Home card. The icons labeled, "Sight-N-Sound," "Sound Shop," and "Future Sound" are all covered with invisible buttons that are "linked" to separate GS/OS programs. If you click on one of these icons, the appropriate program is run. When you quit those programs, you are returned to the Home card. Each of the other buttons are connected to various demonstration stacks that come with HyperStudio. All of these elements can be arranged in a very free-form fashion that quite literally lets you create HyperStudio applications that are limited only by your hardware setup, patience, and imagination.

The Nuts and Bolts...

Now that we've defined what HyperStudio is and what it can basically do, lets talk about its implementation on the IIGS.

First and foremost, the HyperStudio system is **BIG!** The complete setup comes on four 800K diskettes. One of these disks contains an excellent collection of 640-mode graphics (for those of us that could not draw a stick man picture of Jimmy Stewart). The second disk is full of strange and wonderful digitized sounds ranging from applause to breaking glass (my personal favorite). The third disk is full of demonstration stacks and the fourth contains a minimum version of System Software 5.0.2 and the HyperStudio program. While all of these support files for HyperStudio take up a lot of room, the HyperStudio program itself takes up less than 150K! A very impressive feat when you consider just how much this program does. The HyperStudio documentation says that it is possible to run HyperStudio from a single 800K floppy drive (two are preferred), but, due to the number and size of the support files that come with HyperStudio and the fact that you will constantly be generating more huge files with HyperStudio, I would strongly urge the use of at least a 20 megabyte hard drive.

Which brings us to the subject of speed. For all that it does, HyperStudio is surprisingly fast. But only up to a point. After you add about fifteen or twenty cards (depending on the contents of the cards) to a stack, HyperStudio becomes noticeably slower. This is another good reason to invest in a hard disk; not only will it keep you from having to swap disks all the time, it will significantly speed up the operation of the program and any stacks you may run. Those truly in need of speed should also consider the purchase of a TransWarp GS if a hard drive just is not fast enough for you.



HyperStudio requires System Software 5.0.2 in order for it to work properly. Unlike some other pieces of software that use System 5.0.2, HyperStudio actually tries to make use of some of the features in the latest version of GS/OS. For instance, GS/OS has the capability of tracking 32 separate pathname prefixes at one time. While most applications ignore this capability, HyperStudio takes full advantage of it. HyperStudio uses one of these 32 prefixes to keep track of the last place you got a piece of clip art from. Another is used to remember where you got your last sound file from. Others are used to keep up with where you have been importing text from or where you are saving your stacks to. This is a really great feature if you are using a hard drive and you keep your sounds, art, text and other HyperStudio building blocks in different or deeply hidden directories. No more clicking the "Disk" button over and over again, or burrowing through 20 directory levels just to get back to where you started from. This is one feature of GS/OS that more applications should take advantage of, especially AppleWorks GS!

Another feature of System 5.0.2 that HyperStudio takes advantage of is the new Text Edit Tool Set. HyperStudio uses this tool to allow you to attach large blocks of text to a card. Text can be imported from a plain text file, an AppleWorks Classic v2.1 (or earlier) file or you can enter it from the keyboard. If the body of text is too large to fit completely on the card, you can specify that it be scrollable and the user can then view all of the text simply by using the scroll bar attached to the text block. This brings me to a very minor, yet incredibly annoying, problem that occurs in HyperStudio and just about every other program that uses the Text Edit Tool Set (a variation of this problem is sometimes seen in AppleWorks GS, see page 4). When importing a large body of text into HyperStudio, occurrences of the lowercase letter "r" are sometimes replaced with an unprintable character that is displayed as an inverse (white on black) "?". This can be extremely annoying when you've just put the finishing touches on a stack and are looking back over it only to find most of the "r" characters replaced by garbage.

The worst part is that if you take the time to go in and change them, there is a better than 50% chance that they will just turn into garbage again as soon as you leave that card. This happened to me a LOT while I was working on the stack on this issue's *GS+* disk. The deadline demon finally forced me to give up and leave a few corrupted characters in the stack. Since I have seen this problem in just about every program that uses the Text Edit Tool Set, I must assume that this is a problem for Apple to tackle in the next System Software update.

Another nice feature of HyperStudio is that it lets you password protect the stacks you create. This will be especially useful for teachers and others that don't necessarily want users tampering with the contents of a stack. Yet another feature that should interest teachers is HyperStudio's support of the Touch-Window. This input device fits over the screen of the IIGS and allows the user to use his or her fingers to point to and select objects on the screen. This will be a tremendous advantage to those whose pupils are so young that they would rather eat or throw the mouse than point and click with it.

That All Sounds Great...

But, as you were probably thinking, I still have a few gripes about HyperStudio. I have grouped these into two classes: Annoying and Inexcusable.

The Annoying Stuff

1) HyperStudio does not create stand alone GS/OS applications. This means that to run an "application" created with HyperStudio, you have to have HyperStudio. No other Hypermedia system that I know of has this capability, but is that any reason for HyperStudio not to have it? In the HyperCard world (on the Macintosh) there is a Desk Accessory called HyperDA that allows you to run HyperCard stacks without having to run HyperCard itself. This would be a great thing to have for HyperStudio.

2) There is no way to directly edit the color palette. This can be a royal pain, especially when you are importing graphics that were originally created in 320 mode. The HyperStudio manual describes a work around for this problem, but it still involves far, far too much effort for such a simple task. I find it very hard to believe that the same folks that squeezed all of this into 150K could not figure out how to put in an "Edit Colors" option.

3) Sounds are not intelligently managed. If you are working in the default, novice user mode, and you create multiple buttons that play the same sound, a separate copy of the sound data is placed into the stack for each button. So, for example, if you have a 20K sound that three separate buttons activate, you end up with 60K worth of sound data in your stack instead of just 20K. This can help a stack get very big very quickly!

The Inexcusable Stuff

1) HyperStudio has no built in programming language. It's pretty obvious that HyperStudio is based on and draws heavily from HyperCard on the Macintosh. One of the main reasons that HyperCard has been so popular is that you can actually program it without having to sink into Assembly Language! You can make it dial the phone, sort a list or do just about anything else you can do with a high level language. This is the main reason that HyperCard has become the AppleSoft Basic of the Macintosh world. It comes with the machine and just about anybody can program it. Why not put this same powerful capability in the hands of HyperStudio users? To be fair, you CAN add external commands, which are called XCMDS, to HyperStudio, but the specifications for doing so are very sketchy and, according to the documentation, could change at any time. Add to this the fact that the easiest way to write these XCMDS is in Assembly Language and I think you'll agree that HyperStudio won't be replacing AppleSoft as the first choice of the beginning IIGS programmer anytime soon.

2) HyperStudio can not read HyperCard stacks. What reasons do I have for wanting this feature? I have a few thousand reasons actually. THOUSANDS of quality HyperCard stacks exist out there. Stacks for education, business, entertainment... you name it, there's probably a HyperCard stack for it. Having support for HyperCard stacks also makes sense from a business point of view. If Apple **does** release a version of HyperCard for the IIGS along with a Macintosh File System Translator, you can bet it will be able to run the Macintosh HyperCard stacks. And if Apple gives it away like they do on the Macintosh, HyperStudio will very quickly become a $149 memory.

3) There is no support for any sound hardware other than the HyperStudio sound hardware. HyperStudio comes with a "No-Slot" digitizer and an amplified speaker. It also comes complete with a set of supplemental programs that let you digitize sounds using the included hardware and import sounds digitized with other hardware. You can also digitize sounds directly from within HyperStudio, but only with the digitizer that comes in the HyperStudio package. This may be fine for those that have not yet shelled out the bucks for a digitizer and speakers, but it is a big disappointment for those of us that have. The HyperStudio digitizer is designed to let another digitizer work by passing through it, but if you have a lot of expansion cards (as I do) there may not be enough room inside the IIGS case to add even a "No-Slot" digitizer. I also have the problem of having an old Future Sound card, the cable to which is too short to be hooked up the way the HyperStudio digitizer requires it to be. I can understand Roger Wagner Publishing wanting to furnish a complete hardware solution for all IIGS owners, what I can't understand is the lack of a complete and simple software solution for those of us that don't need the extra hardware or its expense.

The Wrap Up

Wow, there is so much more to this product that I could probably continue this review until it fills the entire magazine! But, I'm out of space and time so I'll just have to cut right to the end. HyperStudio v2.0 is one hell of a good product. It finally does everything that it claimed it would do, but there is oh so much more that it could do! If you have a hard drive or lots of patience, and you want the ability to easily mix sound, graphics, text and video in an interactive environment, this is the best (and only) game in town. If you are a teacher or parent that needs or wants to be able to quickly and easily produce specialized lessons on either a large or small scale, this is the product. If you don't have a hard drive or you just want to tinker, you might want to check out the demonstration version of HyperStudio first. It's available directly from Roger Wagner Publishing for $10 and your Apple dealer or users' group should be able to get it for you for free. HyperStudio v2.0 is the most improved product of the year. Highly recommended.

Graphic Disk Labeler - retail $25

Not Copy Protected - Requires 1MB of RAM

Triad Venture, Inc.
P.O. Box 12201
Hauppauge, NY 11788

Reviewed by Wayne Packard

Graphic Disk Labeler (GDL) is a nifty little utility program from Triad Venture, Inc. The entire purpose of this application is to allow you to use your ImageWriter II printer to make colorful labels for your 3.5" diskettes. The package includes the GDL disk, the manual, and several 3.5" disk labels in tractor feed for you to send through your ImageWriter. Of course a warranty registration card is also included which you must mail back to Triad Venture in order to be eligible for future updates of the product. The program does an excellent job at what it was designed to do, and it has some impressive features which make it very flexible. GDL follows the Apple Human Interface Guidelines, using pull-down menus and complete mouse control. There is a graphic representation of the label you are working with on the screen at all times, which makes it easy to imagine what the printed version will look like. Because the program runs under GS/OS, with the standard interface, you can use any GS fonts you happen to own on your diskette labels. Simply install them in the fonts folder of your boot disk. This makes it easy to get some different, and very impressive looks. Also, you can select any of the standard font styles such as italics, bold, shadow, etc. which you normally have access to in GS/OS style programs. There is ample room for text on the front of the label, and text may be superimposed over graphics if you so desire. You are also provided one line of text which will appear on the back of your disk, and one line which will be printed on the little edge that the label goes over on top. This feature is supposed to allow you to see which diskette is in your drive without having to remove it, but you will need a very small font for it to fit and still be legible.

GDL also provides the ability to save your created labels to disk for use again later, or to give to a friend. In fact, there is one label file included on the GDL disk

when you receive it: the GDL disk label. The program disk comes without a label on it, and your first project is to load and print its label. You are guided step-by-step through this process in the user's manual, and this provides an excellent introduction to the program.

By far the most interesting feature of GDL is its ability to import graphics from several sources for use on your labels. You can import Super Hi-Resolution graphics screens created with programs such as DeluxePaint II or PaintWorks Gold, and they may be imported at full size, clipped, or shrunk to fit the label. Also, the palette of the graphic is kept intact when it is imported, so it will print with the colors as close to the original as possible. Another source of graphics is The Print Shop IIGS. To load these graphics, simply select Print Shop GS from the Background menu, and then choose your graphic when it appears on the screen. Finally, position the graphic on your label with the mouse, and click the button to place it. That's all there is to it. The third, and most interesting way of adding graphics to your label is the icon option. When you select Icon from the background menu, you are presented with a standard file selection dialogue box. From there you simply select an icon file and double-click to open it. You are presented with each icon in that file one at time, and when you find the one you want you click the select button and then drag the icon into place with the mouse. You are also given the option of placing the icon at its original size, or having it expanded to fill the label. This is my favorite feature of the application, because it allows you to place the same picture on the disk label that represents the program on the screen in the Finder.

The manual which accompanies GDL is small, but entirely adequate. It is well-done in that it is arranged in sections according to each feature of the program, and it is easy to read because it is laser printed. GDL is a nice package, and does what it was designed to do well. However, as with every new product, there are a few things that could be improved.

The first thing I found is really just a personal quibble. GDL runs in 320 mode instead of 640. I personally like the look of 640 mode much better, because desk accessories like the control panel tend to fill the whole screen when they are activated in 320 mode. There may be some very good reasons for the program to be in 320 mode, but if there are not, I would like to see it changed to 640 in a future revision.

Another problem I encountered involved the palette. When the program loads, it appears on the screen with a default palette containing all the standard colors. From here you can design a label from scratch, putting on text with different fonts and styles. These words can be any color from that palette that you choose for them to be. When you are ready to add a picture to your label (after all, this is the neatest part) you can select from the three options mentioned above. If you choose to import a Super Hi-Resolution graphics, its palette will replace the palette that is currently active. (This may re-color your text, so it is usually best to import your graphic before adding text.) This is a very nice feature, which allows your graphics to appear on the label in the colors it was designed in, rather than the default palette. However, if you decide that you would rather have the graphic be a different color, you cannot alter the palette directly in the GDL program. You must exit GDL, load a paint package, import the graphic, alter the palette and re-save it. Then you must exit the paint program, and finally reload GDL and import the graphic again. This is somewhat of an involved process which would be greatly simplified if GDL provided a means of altering the palette. A similar situation occurs when you try to use an icon, but this time it is a little worse. When an icon is imported into GDL the currently active palette is not replaced. Instead the icon is re-colored to fit the current palette. I found this to be very annoying, and usually unacceptable. The major problem is, however, that there is not really a way to correct this. The only way I can think of is to use an icon editor such as IconEd or DIcEd, both of which are available as ShareWare. This still is much more trouble than editing the colors on a Super Hi-Resolution graphic is, and almost not worth it. It would be much simpler if GDL provided some way to adjust the palette. One possible solution to this problem with the palette would be a New Desk Accessory which would allow you to alter the palette in any program. If the designers of GDL would provide one of these with the package, not only would it help solve the problem in this program, but would also be available to help out with the same situation in other GS/OS programs.

Overall, I think that GDL is a strong performer. It serves its purpose very well, and its graphic interface makes it easy to use. Having noted the problems above, I would recommend GDL to you. It makes very nice labels and shows some impressive programming control over the ImageWriter. I am sure that if the company supports the program as they have promised to do, it will soon be even better.

The Programmer's Online Companion - retail $49.95

Not Copy Protected - Requires 240K Free Memory and About 240K of Space on Your Start Up Disk.
IIGS version by The Byte Works, Inc.

Addison-Wesley Publishing Company, Inc.
Route 128
Reading, MA 01867

Reviewed by Steven W. Disbrow

The Programmer's Online Companion (POC) is a Classic Desk Accessory (CDA) that puts an abbreviated listing of IIGS Toolbox calls at your fingertips. Actually, it's quite a bit more than just a listing of Toolbox calls, the POC also provides a brief, but quite good, description of each Tool call listed, and a listing of all of the major type declarations and constants associated with a particular Tool Set. The type declarations and constant definitions are in C and the Tool calls are listed in both C and Pascal.

This is a neat product, folks! Not only do you have all of these brain-busting calls available online, but the POC allows you to search for any particular call or ordinary string in a multitude of ways. You can, for instance, search forwards or backwards (using the Open-Apple and option keys respectively) for a Tool call or string. You can include wildcards in your search string so that you can search for those calls that you may not know exactly by name (shame on you for not having them memorized)! For instance, you can search for "QDAux=" and the POC will find the next (and the next . . .) string or Tool call that starts with "QDAux." The search speed of the POC is not exactly the fastest in the universe, but it sure is faster than picking up Volume 2 of the Toolbox Reference, turning to the index and . . . hey! Where's the index? Drat! I picked up Volume 1 again! Argggh! Well, you get the idea.

And, once you have found the call or description (or constant or type) that you were looking for, you can copy it from the POC display and paste it directly into your source code! This is a real time-saver that not only works with APW, ORCA/M, and the ORCA/Desktop, but also with any editor that correctly supports the Clipboard. (AppleWorks GS, I have just discovered, does not fall in this category.)

Another place that the POC scores well is in its use of standard 8-Bit AppleWorks keystrokes for moving around in the database. You can use Open-Apple-Arrow keystrokes to hop from entry to entry, word to word, etc. just as you would in AppleWorks. You can also use Open-Apple-1 to move to the top of the database and Open-Apple-9 to move to the end. It was a very smart move (no pun intended) on the part of the Byte Works to stick with this standard. Because of this, and the online help screen (you guessed it, Open-Apple-? gets you the help screen), the well-written manual is pretty much unnecessary for anything other than installing the POC or updating its database.

The Programmer's Online Companion is fairly big. The combination of the POC Desk Accessory (15K) and the POC database (222K) take up almost 240K on your startup disk, which, when combined with System 5.0 or 5.0.2, makes it pretty impossible to use the POC from anything but a hard drive. This also means that the POC takes up about 240K of valuable memory. Fortunately, the POC database is not loaded into memory until you invoke the POC for the first time. So, if you just want to boot up for a quick (100) game(s) of Arkanoid II before bedtime, the POC won't eat into that precious RAM.

As I hinted at earlier, the POC database can be updated. Two APW/ORCA shell utilities are provided for this purpose. The first utility expands the POC database into a plain text file. You then edit this file, putting in the new Tool calls, or whatever else you want. You then use the second utility to compress the text file into the format used by the POC database. It's a darn good thing you can do this, because the current version being sold by Addison-Wesley only contains the Tool calls for System Software 4.0! This is a pretty substantial problem when you consider just how big a job it's going to be putting in all of those new System 5.0 Tool calls! I spoke with a spokesperson from The Byte Works, Inc. to see if an update was available and was told that Addison-Wesley (who is now responsible for the product) has not contacted them to do an update. There is no phone number listed for Addison-Wesley in the manual, so I have not yet checked with them on this matter.

Overall, the Programmer's Online Companion is a great idea and a great product. So, why don't I ever use the darn thing? This is a question that I ask myself whenever I finish a program. Whenever I'm not

programming, I spend lots of time browsing through the POC going, "Wow! That's neat! I didn't know there was a call for THAT!" But, whenever I'm actually programming, I keep going to those infernal Toolbox books that I keep on the floor next to my chair. Forget searching the index, I've got about 500 business cards stuck in those things right at the most interesting places so I can get right at what I need. This, to me, is much easier than going to the CDA menu, figuring out what to search for and then waiting for the results of the search. Another reason is that I've never been all that wild about CDA's. I would much rather have an NDA version that puts all this stuff in a window that I can have on-screen at the same time as my source code. Getting both a CDA and an NDA version in the POC package would be great! They could both be installed at the same time and they could use the same database, giving programmers the best of both worlds.

But, that's just me. If you prefer the text-based environment for programming, or you absolutely HATE those cursed books (I can't imagine . . .), or you just want the extra help online, this is a potentially useful product you should very seriously consider adding to your IIGS programming tools.

Xenocide - retail $49.95

Copy Protected - Requires 512K of RAM
Program by Brian Greenstone & Dave Triplett

Micro Revelations, Inc.
P.O. Box 70430
Reno, NV 89570
(702) 825-1132, Orders only: (800) 442-6002

Reviewed by Wayne Packard

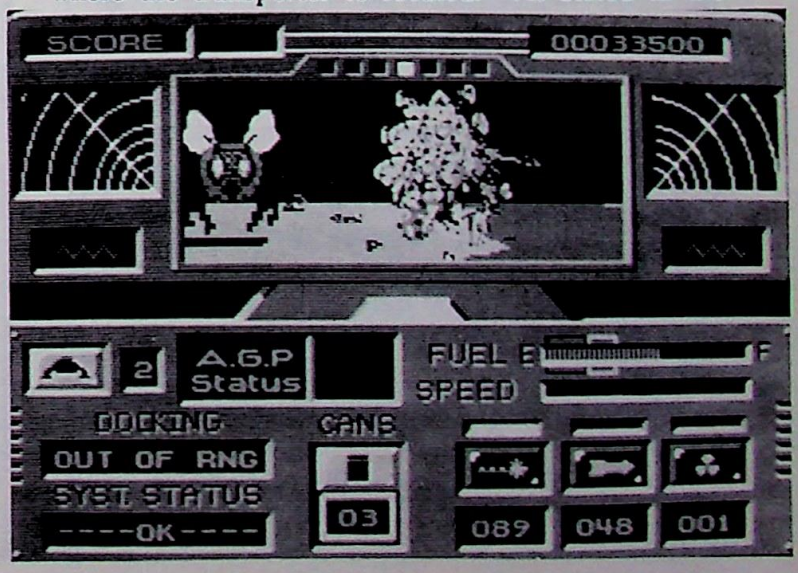
Xenocide is a fast-paced action arcade game with excellent graphics and stunning digitized sound. It is produced by Micro Revelations, Inc., and was written by the same programmer who has been writing those "24-hour" games that you may have seen on CompuServe or other BBS's. If you like games that require quick reflexes and have lots of action with just a little touch of strategy, then this is a must have. As soon as you boot Xenocide, you will be impressed. The title screen and opening animation is superb . . . and it just gets better! After the credits appear (you can't bypass this, but it doesn't take long) you are greeted with the main menu. There are five options here, four of which are represented by pictures, and the other is simply the word EXIT. You make your selection by clicking with the mouse, and you have the choice of calibrating your joystick, turning on stereo (if you have an optional stereo card), viewing the high scores, or beginning the game. After setting things up, click the picture of the planet and the real fun begins.

After the disk access, you are presented with a view of a road leading off to a planet in the distance. You are now on the first level of mission one, peering out the windshield of your Hovercraft. At first this stage appears to be easily accomplished. After all, all you have to do is pilot your Hovercraft along the road, picking up ammunition canisters and avoiding the rocks and numerous aliens which are between you and the docking station off in the distance. The only problem with this is that most of us have never driven a Hovercraft before, and it's not exactly easy! It moves quickly in any direction at just a touch of the joystick, and it takes a little bit of adjustment to be able to play it well. Also, collision with aliens or rocks damage your craft, and too much damage will destroy it. Fortunately the computer keeps up with the status of your ship, and indicates it with words such as "OK," "POOR," and "CRITICAL." Also, when you reach the critical stage, or your fuel gets too low, you will hear a digitized voice, "WARNING . . . WARNING . . . !" This is your signal to be very cautious, because you have only one or two more hits left before your Hovercraft is grounded. You will also hear a crash when you collide with a rock, and an appropriate sound when an alien splatters against your windshield. (You also get a glimpse of alien anatomy. Yuck! Who would have thought you would need windshield wipers in space!) To prevent the damage to the Hovercraft, you can either avoid the rocks and the aliens (not very likely) or you can shoot them. Your craft is armed with fireballs and missiles which you fire using the two buttons on the joystick. You also have one nuclear bomb which will destroy everything in your path. Eventually, if your craft holds out, you will hear the computer say, "ALERT . . ." and the docking station will appear on your radar screen. Simply fly into the station and you will be escorted to the next level. Between levels you will see a screen showing the number of ammunition canisters you acquired, and thus, the amount of ammunition you will be able to use for the rest of this mission. You will soon see that it is very important to get as many canisters as possible.

The second level of mission one is the cave level. You have traded your Hovercraft for a jet pack, and you are now armed with grenades and a laser. The object of this level is to fly around avoiding or destroying the different objects in the cave, and collecting five bombs which are hidden throughout the cave. You should continually monitor your fuel, shield, and ammunition levels so that they do not get too low, as this will most certainly prove deadly. Throughout the cave, in well-planned out places, are little docking stations where you can replenish your fuel and ammunition. The only way to regenerate your shield is to collect enough option pods to do so. The system of option pods is where the strategy comes into play in Xenocide. Little blue pods appear at random throughout the cave (and they disappear if you do not get to them quickly enough) and you must try to run into them. Each time you find a pod, a blue indicator advances to the next possible option on your option list (this list changes from level to level). Only one option can be active at a time, and activating one immediately deactivates the others. The tricky part is that each time you activate an option the indicator starts over at the beginning of the list. Therefore if you activate option number three (auto-blaster), you will need to get four more pods to reach option number five (regro-shield). However, if the indicator advances to auto-blaster, and you do not activate it, then you will need only two more pods to reach regro-shield. These points are very important to consider, and the proper use of options will be the difference between succeeding and failing on your mission. Another important point is that you may hold an option as long as you want without activating it (for example, let the indicator stay beside regro-shield until the shield is low enough to need it), but if you accidentally run into one of the pods, the indicator will advance to the next option, and it will require four more to get you back down to regro-shield. A mistake like this can cost you the game! Your shield is depleted each time you contact one of the objects in the cave, or are shot by one of the life forms. You will know when you take a hit, because you will hear a digitized "Ouch!" After you collect all five bombs, make sure you have maximum fuel and ammunition, land on the docking pad, and proceed to the next level.

The play on level three (the underwater level) is quite similar to that of the cave, but it is a bit more difficult. Instead of collecting bombs to use later in the game, you must find and collect little yellow keys which are used on this level to open various doors. You must find all of the keys to be able to complete this level. Another reason that this level is more difficult is that the marine life is vicious! Also be careful to avoid anything that flashes, as they will destroy your shield. Instead of fuel, on this level you are concerned with air, and there are various stations throughout the level where you can get a fresh supply. Each time you get more air, your ammunition is refilled as well. Keep traveling to your right, and eventually you will reach the docking pad . . . your passageway into the Bio-Lab.

The Bio-Lab is the last level in mission one, and by far the hardest. In this game, the options are different, and so is your perspective of the playing screen. In the Hovercraft mode, you are looking through the windshield of your craft, and you cannot see what is behind or to the sides of your ship. In both the cave and undersea levels, you have a profile view and you can see all of what is going on. Now, in the Bio-Lab you are looking down on yourself and your enemies. Two options are available on this level that you have not had previously, land mines and the flamethrower. I STRONGLY recommend (as does the manual) that you get the flamethrower for use on this level. I cannot imagine ever making it out of the Bio-Lab without it. Another helpful hint is to get enough options on the underwater level to advance the option indicator to regro-shield. Then, after you are almost completely wasted by the aliens in the lab (this won't take very long!) you can quickly activate your option, and give yourself another chance. The object of this level is simple. You roam around the lab searching for nuclear storage ports, and when you find one, you drop a bomb in it. (By the way, these are the same bombs you picked up back in the cave.) After you have placed all five bombs, you must find the central computer room where the transporter is located. As stated in the



manual on page 14, "To activate the teleporter, simply run into the computer terminal. At this point you will hear a siren and will have approximately seven seconds to follow the green arrows to the spotted teleporter pad." If you do not reach the pad within the seven seconds, the bombs will detonate and you will be destroyed with the moon. If everything goes as planned however, you will be teleported off the planet just in time to see it blown into nothing. Having completed mission one, you are immediately given another assignment: The Ice Moon.

I have had the game for several weeks, and a team of "experts" and I have played it every night. (A special thanks to Richard Pysher and Harold Uhl for their excellent help in conquering the first mission.) The farthest we have been able to get is the second level of mission two. The play on this level is similar to that of the first, but is much harder. There is a lot to like about Xenocide, and very little to dislike. The graphics are superb and the digitized sound and background music add to the excitement of the game play.

I did find a few things, however, which could use a little improvement. (How did you guess?) First of all, the disk comes with ProDOS 16, not GS/OS. I have no idea why a game which has just been released would ship with such an out of date (and extremely slow) operating system. This accounts for a somewhat sluggish (although quite tolerable) boot time, and prolonged disk access between levels. However, I did find that if you have 1.25MB of free RAM, you can create an 800K RAM disk and run Xenocide from there, which speeds thing up considerably (see accompanying sidebar). There was also no problem with launching the game from the GS/OS Finder under System 5.0.

Another minor problem with the game is that it is copy-protected. However, you can make a working backup copy using the manual bit copy feature in Central Point Software's Copy II Plus (version 8.3 or later). This leads me to my biggest complaint about Xenocide. You must leave the original disk (or a bit copy that the program thinks is the original) in the drive at all times while playing the game. The game will copy to a hard disk without any problem, but you must put the floppy in to play the game, because the program checks for it periodically, even though it loads the data from the hard disk. This is quite annoying, and if you are not able to make a working bit copy, you are forced to leave an expensive original in a vulnerable position. I hope that the programmers will rethink this protection scheme in any other games they produce. Let me quickly add however, that the game is well worth the extra inconvenience of having the floppy on-line at all times, assuming of course that it is not your original.

Overall, I think that Xenocide is a great value for your money. The graphics and sound exploit the IIGS's abilities, and the game concept and design are captivating. Also, the game is hard enough to be challenging yet easy enough to be enjoyed by most. I would recommend that anyone who likes fast-paced, arcade style action games buy Xenocide.

Speeding Up Xenocide

If you have enough RAM (at least 1.25 megabytes) in your IIGS you can substantially increase the speed in which Xenocide boots and changes levels by installing it on a RAM disk. Although this takes a little bit of work (and would not be profitable for just a short game-playing session) it will pay off by decreasing wait time and increasing your enjoyment of the game. Installation of Xenocide on the RAM drive is basically straightforward, but there are a few points to consider.

The first step is to use the control panel to create and 800K RAM disk. Because Xenocide requires 512K of free RAM to load, you must have 1.25 megabytes for this to work. After you create the RAM disk, power down the system (or simply press control-option-Apple-reset to initiate a self-test, and then press control-reset to reboot) so that the RAM disk will be reinitialized. Then boot your favorite copy program and use it to format the RAM disk. Next, do a file copy of the Xenocide disk to the RAM disk. Be patient, this will take a little time.

Once this is completed, you are almost done. For some reason, Xenocide will not boot from a RAM disk. So, you now have to find some way to launch Xenocide. If you have only 1.25 megabytes, you cannot launch the Finder now, because you don't have enough free RAM. The easiest solution is to use a small ProDOS 8 launcher program (the public domain program, "Super Selector", works well) to launch the file named ProDOS on the RAM disk. This will make the GS boot into ProDOS 16, and then to run Xenocide. Don't forget that you must have the Xenocide floppy disk in drive 1 (even though the game is reading from the RAM disk), or the program will prompt you for it.

Also, when the game saves your high scores, they will be saved on the RAM disk and not on the floppy. If you want to keep the high scores list, simply copy the file "Scores.Info" from the RAM disk to your floppy before you turn off the machine. By the way, don't forget to reset the RAM disk, so that all of your other programs will work normally.

Keef the Thief - retail $49.95

No On-disk Copy Protection - Requires 512K of RAM
Programmed by Naughty Dog Productions

Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
(415) 571-7171

Reviewed by Bryan Walker

"Keef the Thief" is the newest role-playing game (RPG) offering from Electronic Arts for the IIGS and was designed by a partnership of college students, Naughty Dog Productions. "Keef" puts you in the role of a true reprobate. A lying, cheating, conniving, yard-ape of a human being. However, it's this individual's lack of any significant moral standards that make the road to the top a bit smoother. You can steal. A lot.

"Keef" presents us with many new features that haven't been displayed in a IIGS fantasy RPG. When you enter one of the very frequent melees, you're presented with a "helmet's-eye" view of your opponents. You're peering at them through a small slit in your screen. In addition, you're presented an overhead "radar-scope" type of view reminiscent of Atari's old classic, "Battlezone." This view shows your location, the monster's location, and any obstacles on the battlefield. Another display on the combat screen shows which direction you're facing. Using mouse or keyboard, you can rotate to face each cardinal and intermediate direction, advance, or attack. You can't step backwards while fighting an opponent, unfortunately. This would be an ideal tactic when using a bow against a tough opponent, but such is not to be. The game can be controlled with keyboard or mouse, but be warned that the mouse can become a hindrance at times during combat. Until you develop a bit of a touch during combat, you'll have a tough time doing exactly what you want in the heat of battle. This is particularly true when wounded monsters decide to high-tail it. Each monster has a small triangle below it. As you wound it, the triangle turns darker shades of brown. When monsters have had their fill, they light out. (They can't run outside the boundaries of your "arena," however, so it's kind of like shooting fish in a barrel.) Using your mouse to harry and hack up a fleeing monster is trying, at times. Invest in ranged weapons! While most movement isn't in real time, the fights are. Weapons are not only rated in strength, but also in speed and attack range. A small box will flash green when you can attack, and red when you are recovering from an attack you just executed, or reloading your bow. Most missile weapons tend to be slower than a hand-to-hand weapon, but there are exceptions. You can also change weapons at any time during a fight.

The magic system is innovative. To cast spells, you must first obtain reagents to mix. There is an herb shop in the first town you encounter that can supply you with a wide variety of materials. Whether you buy or steal them is up to you. Using various scrolls that you find throughout the game, you can mix certain reagents and be rewarded with the ability to cast certain spells. For instance, to illuminate your way in dungeons, you can mix Dragon's Drool and Glow Grass. To add an additional level of complexity, different scrolls enable you to mix reagents in different magical shapes such as the Circle of Unity and Pyramid of Directed Power. Mixing identical combinations of reagents in different shapes can indeed give you different spells. The scrolls don't come right out and say "Mix Rhino Horn and Black Pearls to find secret doors." Instead, they'll phrase their instructions in a manner that requires you to deduce exactly what reagent provides which impetus to the spell. You can bank up on spells and give yourself a large selection to choose from in a dire situation, but you can't mix reagents to form spells during combat. When you correctly mix reagents to form a spell, the game displays the name of the incantation you've added to your inventory. The spell names are in a pseudo-Latin, such as "Flickus Bickus," "Napus Almus," and "Goodas Newus." Somewhat ridiculous, really. When casting a spell, don't expect to be treated to the pyrotechnics of FTL's "Dungeon Master." You don't see anything of the sort. In the case of the more spectacular-sounding spells, I found this disappointing.

"Keef the Thief" doesn't have sound effects; it has sound tracks! There are several different tunes that the game plays at different locations. Each one is a truly superb song. (Possibly the best music of any IIGS game yet!) A menu feature allows you to turn the music on or off, or even see the title of which song is currently playing. On the flip-side, however, turning the music off rewards you with absolute silence. The game has no sound whatsoever, outside of the sound tracks. If you recoiled in terror at the chitinous snarl of the giant scorpions in "Dungeon Master," you may be in for a disappointment with "Keef the Thief." Combat in a vacuum. To make up for this shortcoming, the

programmers have utilized the background border to provide additional sensory information. A flashing blue border means a guard's coming. A quick white flash means your attack has landed. Orange means you bumped into something. There are other colors for other situations. In addition, when you hit an opponent in combat, you see what the manual calls a "slash" on the victim of your attack. It may look like a "slash" to the programmers, but to me, it looks like you momentarily pasted a section of fake vomit on their faces. If you see this, you'll agree with me. The utilization of the border colors is interesting, but I would have preferred a variety of digitized yelling and screaming. I find that more gratifying . . . .

The graphics in "Keef" range from excellent to mediocre. Many scenes of people and monsters are well-proportioned and realistic. The graphics of the dungeons are the familiar 3D perspective we've grown to expect. The quality of the display is good, but not on par with "Dungeon Master." It may take you a little while to grow accustomed to the perspective changes of moving around in the dungeons. They're a bit different from other games. It's possible to move fairly quickly through the dungeon environments, as opposed to some other games. Movement isn't considered "real time," and you can sit in one place indefinitely without ever encountering a monster. Like "Bard's Tale," and "Might and Magic," encounters simply pop up from nowhere. When monsters are met, you go to the combat screen. (It should be noted that even if you're in a cramped corridor, the fights all take place in a very large room with pillars or trees scattered about as obstacles.) A real-time feel to the dungeons and monsters that you can see from a distance would have really helped flesh this game out even more.

Having discussed the martial and magical capabilities of "Keef," it's time to investigate the game's seamier quality: Thieving. You have three different thieving skills: Lock-Picking, Stealing, and Disarming (traps). Each one of these skills is improved through practice. Initially, you'll have a tough time stealing a toothbrush without hurting yourself, but keep at it. The most important skill is Disarming, which allows you to remove traps that protect treasures. Not all traps are deadly, but make sure to remove each one, because you desperately need to improve this skill as quickly as possible. In many cases, treasures are protected by several different traps. In disarming them, you're presented with a menu of which action you wish to take to remove the trap. Actions range from "Entering a Trance and then trying," to "Swing across the room like Tarzan." Your choices vary with each treasure and trap you're presented with. If you try an action that isn't what's required to disarm the trap, the game tells you that you did something wrong. However, if you did the right thing but luck wasn't on your side, the game will ask you not to take your destruction personally, or inform you that 1) You didn't disarm the trap, and 2) You hurt yourself.

This became a real sore spot with me in nothing flat, as I began disarming traps in the dungeons. It's impossible to save your game in a dungeon, and many of the more lucrative treasures are often many levels down. In addition, the "Really Cool" items are protected with several traps, and each trap may be removed by one of over a dozen different tactics. This means that you may spend a LOT of time trying to guess which move is the right one. In some cases, you can rule out many of the offered options for removal, but in others, you just guess and hope. All this, combined with the fact that you can guess right and still get hosed, makes not being able to save your game in a dungeon a BAD problem. One that should never have gotten past Beta-testing.

That brings me to another problem. In some areas, this game outshines its competition, but in others, it seems incomplete, or inexcusably erroneous. In attempting transactions with some non-player characters, the game tells you that your attempt to unlock the door failed! Pardon me? Poor spelling is common. (Perhaps a sad commentary on the basic scholastic skills of the current college student?)

One of the underlying themes of the game is a somewhat-adolescent adherence to certain mannerisms that many people may label as sexist. The cover of the game, showing a chain-adorned redhead, is something of an indicator of things to come. Some nudity does exist in the game, as well as certain off-color remarks. I didn't find a situation or remark that I felt was really tasteless, but I also found that none of the risque gestures added anything at all to the flavor or quality of the game play. I won't pass any judgement on the path the programmers have taken with this. However, if you're pretty sensitive to a somewhat callous outlook towards women, even in a game, you might want to steer clear of this one. It may help to remember that the programmers are young, and might be unwise in the ways of the world!

"Keef the Thief" possesses many scintillating strengths: lightning-fast combat, an intriguing magic system, high-quality graphics, wonderful music, and enough thought-provoking puzzles and clues to satisfy just about every fantasy-gaming fan. You can even adjust the quantity and severity of monster encounters to make your survival easier.

On the other hand, the mouse interface can be clumsy during a tough scrap, figuring out what reagents do what can be puzzling, dying is an amazingly easy feat in the beginning, dying is an amazingly easy feat when dealing with traps, and, without the capability to save the game in dungeons, dying can be a real pain. In addition, the password-matrix chicanery that they employ as a form of copy protection is a pain, as well. Electronic Arts would have been better advised to use a code-wheel password scheme.

"Keef the Thief" is a good game. It's not the best offering in the IIGS field, but it's competent and entertaining. If this is, as my vociferous exchanges with Electronic Arts indicate, the last EA offering for the IIGS, I'll be saddened. Naughty Dog has done well, but with some time to mature a little, and gain even more skill, they could become a real force in the IIGS market.

Write Electronic Arts and say that.

Life & Death - retail $49.95

No On-disk Copy Protection - Requires 1MB of RAM
Program by Mark Manyen and Jacob P. Smith

The Software Toolworks
19808 Nordhoff Place
Chatsworth, CA 91311
(818) 885-9000

Reviewed by Noreen Ribaric

In Life & Death you are a first-year surgical resident at Toolworks General Hospital. You will be working in the Department of Abdominal Surgery and will be required to treat patients with abdominal complaints. The software package comes complete with everything you need to be a successful surgical resident: "Operating Procedures Manual," "New Resident Orientation" handout, excerpts from "Anatomy and the Surgical Technique" by Merl and Newman, a booklet on the history of surgery, and your beeper, surgical gloves, and mask! Be sure you read the first three items before you begin your "rounds" or you will probably end up killing all of your patients! It is not necessary to read the history of surgery booklet in order to play the game, but it contains interesting facts and helps set the mood for the game. Be sure to note the disclaimers when reading this documentation that "UNDER NO CIRCUMSTANCES should any person rely upon, or be influenced by these materials in making any health related decision."

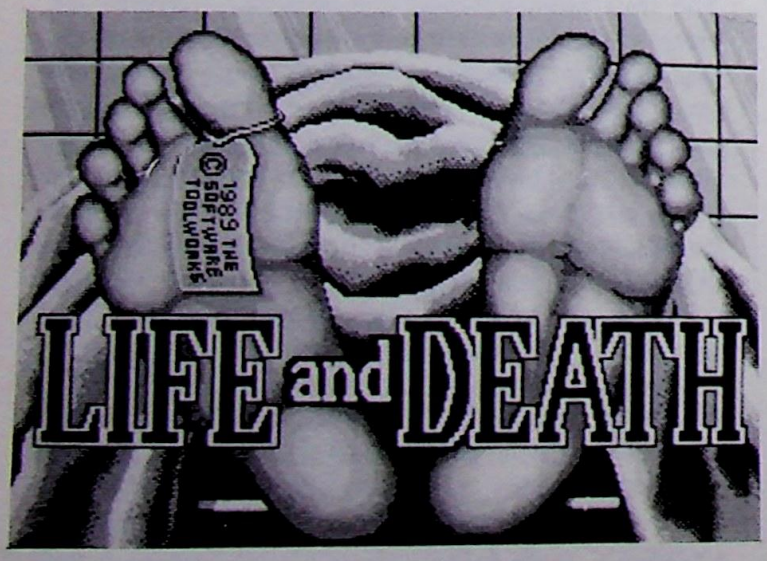
The first thing you must do upon arriving at Toolworks General is sign in. This sign-in sheet keeps a list of all surgical residents and how many of their patients make it to recovery. (Don't worry, if your success rate is really terrible, you can always go to the staff room to remove your name from the list and start over, or sign-in under an alias!) You can even leave the hospital (quit the game) and return later and continue where you left off. Unfortunately, you can't leave during surgery, you have to wait until you complete the surgery (or are thrown out of the operating room) to exit the hospital.

Next you will be instructed to attend medical school orientation. Here you are given the basics on how to play the game . . . uh, I mean . . . perform your duties as surgical resident. After leaving the classroom the nurse will inform you where your first patient is, but if you wish to change the game parameters, you need to visit the staff room before going to see that patient.

The staff room is where the personnel records, the Hospital Guidelines clipboard, and the Honor Roll are kept (there are also a number of other surprises here if you look for them). You use the personnel records to pick your surgical team. You can only pick two from a staff of six. The files contain each person's strengths and weaknesses, their specialty, and who they do and do not work well with. The Hospital Guidelines clipboard lets you set the game parameters. The first option is the level of play: Novice, Intermediate, Advanced, or Nightmare. Next you may choose whether quiet hours are in effect or patients may speak (this turns the sound off and on). It is also here that a doctor can be removed from the sign-in sheet. The last thing on the clipboard are the initials that will appear when you initial each patient's chart. Just click the mouse on "Erase Initials" and sign your own. A neat

touch, but my initials are not too legible when signed with a mouse! (I wonder if my doctor uses a mouse to fill out my prescriptions.) The bottom drawer of the file cabinet contains the Honor Roll, which is a list of residents that have successfully completed both types of surgery: the Appendectomy and Aneurysm Grafting. After leaving the staff room, you may click on the nurse to remind yourself what you need to do next. (Nurses can be so handy!) If you do not visit the staff room to set the game parameters, the defaults are Novice Level, Patients May Speak, and a staff consisting of the two surgical interns that specialize in the two operations you will have to master. I find these default settings the best for the first-time player.

When checking on a patient, the first thing you should do is check their chart (unless you're playing in Nightmare Mode, in which case all it says is that "The patient isn't feeling well"). In all other modes, the chart gives a description of the patient's symptoms, although I found that most of the patients had the same symptom -- abdominal pain! In any case, you must examine the patient to narrow down the causes. To do this, click on the bed covers. You are then presented with a graphic of the patient's abdomen. Here you must feel the entire abdomen and note the patient's responses. The sound effects are very good, but don't over-feel the patient just to hear him yell! Depending on the responses, you must check a course of action on the clipboard. Be sure to initial it, or your request won't be carried out! The chief of surgery will inform you if your diagnosis was correct or not, and if you do anything wrong, you will be sent back to medical school for more instruction. (I think the first time I played, I killed 10 patients before I diagnosed one correctly).



The first time you must operate, you will be "beeped." This is the off-disk copy protection. You will need to click on the phone, and use your "beeper" to determine what number to dial. You will only be required to do this once (if you dial the right number). You may use the mouse to click on the numbers on the telephone, or you can enter the numbers using the keyboard. If you dial the wrong number, you are not thrown out of the game. In fact, you can dial three wrong numbers, then you can proceed to the operating room. But you will never get past the first incision before the chief of surgery pulls you out and sends you to medical school. And the next time you need to perform surgery, you will get "beeped" again. I commend Software Toolworks for not using on-disk copy protection. I also would like to note that this, plus the very clear instructions in the operating procedures manual, make this game easy to install on a hard drive.

Performing surgery requires that you know exactly what to do and in what order. It is very realistic (down to scrubbing up before surgery). You must also have a steady hand to guide the mouse . . . uh, scalpel . . . in a straight line. (Remember, the straighter the incision, the less blood you will see!) In Novice mode you get a lot of help from your surgical staff, such as confirmation that you completed a step successfully, and warnings of steps you forgot. You receive increasingly less help the harder the level of play. You get no comments at all in Nightmare Mode. You also only get 8 clamps, instead of 10. You must also keep your eyes on the heart monitor EKG and the level of the IV. Surgery is a very intricate procedure; every detail counts! In fact, if you miss one spot on the patient's abdomen when applying the antiseptic, the surgery will not be a success. This is one of the few things I don't like about the game; it takes quite a bit of time to make sure you do cover the entire area (although I guess it takes a lot longer to do this in real life). A wider "applicator" would have been a big help, nevertheless!

The first surgery you will be required to perform is an appendectomy. You will have to get the appendectomy down pat before you will ever need to perform an aneurysm grafting on a patient. Every time you make a mistake you will be sent to medical school. Here you

are told what you did wrong, and will receive pointers for next time, sometimes this includes a "video tape." Very nice! But sometimes you are not aware that you have made a mistake until you think you have completed the surgery successfully, and are sent to medical school just because you missed a spot with the antiseptic! This is another point I don't like; if you make a major mistake, you are pulled out of surgery right then and there, but if it is minor one, you are allowed to continue thinking everything is OK, just to have to repeat it all over again a few patients later! This is indeed how it happens in real life, but in this game, being doomed to repeat the whole operation over and over again until you get it perfect gets a bit monotonous. Therefore, you must be sure to be very meticulous during surgery, and to pay close attention in medical school!

And that's all there is to it! You learn to identify the different ailments fairly quickly, so most of the game is actually spent trying to perfect your surgical techniques. Upon completing both types of operations successfully, you will be put on the Honor Roll. I have not been able to perfectly complete the appendectomy yet, let alone the aneurysm grafting (even in Novice mode), so we'll have to take the manual's word on this!

Overall, this is a very fun, interesting, and DIFFERENT game. The graphics and sound effects are very good. The attention to detail makes it realistic. (But again, don't think just because you made the Honor Roll, you can pass the Medical Board Exam!) If you are tired of shoot'em-ups and fantasy role-playing games, take a look at Life & Death.

ManHunter - retail $49.95

No On-disk Copy Protection - Requires 512K of RAM

Sierra On-Line, Inc.
P.O. Box 485
Coarsegold, CA 93614
(209) 683-6858

Reviewed by Wayne Packard

ManHunter is the latest animated 3D adventure game from Sierra. It is quite unlike any of their other games for the IIGS, but, impressive graphics and an interesting story line make it a winner. We have come to expect impressive creativity from Sierra, and ManHunter is no exception.

The idea behind the game is unique. It is the year 2004. Millions of flesh-eating orbs have invaded the earth and taken control of New York City. The city has been reduced to shambles; businesses are closed and all humans are confined to designated areas. Upon conquering the city the orbs implanted a tracking disk into the neck of each human. These disks were designed so that a central computer could track the location and identity of every person on earth. However, there were some unsuspected complications, and therefore the orbs have resorted to using "ManHunters" to control the human beings. A small group of humans have banded together in an effort to force the orbs from New York. They work underground, because the computer cannot track them there. This is where you come in.

The Orb Alliance has chosen several humans to work for them as ManHunters. You have the privilege (if you can call it that) of being one of them. You are issued a "ManHunters' Field Guide", a map of New York City, and one ManHunter Assignment Device (MAD) which is a lap-top computer that is your link with the Orb Alliance. With the MAD you can access the tracking records associated with your current assignment, as well as the substantial database of information on humans in the city. Also, unlike other humans, you are allowed to travel about the city, but only to locations which are pertinent to your assignment. Your field guide warns, "DO NOT STRAY OR LOITER." Also, throughout the city, you will encounter robots which work for the Alliance. Do not attempt to tamper with these robots, or bypass a guard robot, as this "will result in execution."

The control of the game is accomplished in one of three ways. The easiest way, in my opinion, is the joystick. With it you simply move in the direction you want to go, and press the button to activate an object. You can also use the mouse to move, but this is a little bit less intuitive than the joystick. Last, and certainly least, you can use the keypad to manipulate your character. Regardless of which method you use, you will still need to have the mouse, because Sierra uses a somewhat standard GS interface, with options hidden in a menu

bar that appears only when the pointer enters its "hot-zone." From the menu you can choose to save or load a game, turn the sound on or off, and view your inventory of collected items. There are also a few other option such as activating your MAD, and quitting or restarting the game. Most of these selections also have quick-key combinations, so once you are familiar with the game, you can use them if you wish. This flexibility of control is a very nice feature of Sierra games.

I have not been able to get very far in ManHunter. I have had it for about a month now, and I have managed to solve a few of its puzzles, but I'm probably not even an eighth of the way through it. I have found that it helps a lot to play this game with a group rather than just one, because each person will have different ideas, and that makes it much more fun. The only hints I will offer you are to read the manual (field guide) thoroughly, so that you will completely understand how to use your MAD, and what to be searching for, and to save your game early, and save frequently! Also, PAY VERY CLOSE ATTENTION TO SMALL DETAILS, because a puzzle completed in one part of a game, may be just the key to solving another problem later. Also, if at first you do not succeed, be persistent (in some cases three (3) is a very special number)!

One feature of the ManHunter manual that I particularly liked was the section entitled "ManHunter Walk-Thru." This section is intended to allow the player to get a better understanding of how the object oriented interface operates, as well as to provide some helpful suggestions in getting started with ManHunter. The manual warns that experienced adventurers might not want to read this section, because it gives away part of the game's solution. I tried the game for about ten minutes without reading it, then I selected pause from the menu and read it through. It helped me quite a bit, so I guess I'm not an "experienced adventurer." I think this is a very good idea, because it allows people who have never played adventure games before to be exposed to them without becoming too frustrated at first. (They let you make progress just long enough to get addicted to the game, then they let you get frustrated!) Sierra also provides a hint book for ManHunter which can be purchased at your favorite computer store, or ordered directly from them. And, if you just can't wait to get the book, you can call the Sierra Support Line, either voice or modem.

The graphics in ManHunter are good, although I have seen games with better; but this is an adventure game after all, and the story is the most important part. I have related the story behind the game to you, and I find it very interesting. Also, there are some excellent musical segments interspersed throughout ManHunter, and they help to add to the enjoyment of it.

ManHunter has no on-disk copy protection; therefore, you can install it on your hard drive, as well as make backup copies to store in a safe place. Another advantage that this off-disk protection scheme has is that you can create a large RAM disk and copy the ManHunter disk to it, thereby allowing it to load screens much faster than from the floppies. (One word of caution here, however: remember to rename your RAM disk to exactly the same volume name as the floppy you copy into it, else ManHunter will not recognize it, and you will be forced to insert the floppy.) This RAM disk solution is also a good idea for people who have a lot of RAM (at least 1.25 megabytes) but only one disk drive. The game comes on four 3.5" floppies. I have used only the first two, but I am sure there is something on the others which I will see if I ever discover how to go any farther.

For some strange reason, the game ships with ProDOS 16 as the operating system, but since there is no copy protection, I was able to delete ProDOS 16 (from my backups of course) and install GS/OS instead. The game works perfectly, and boots much faster now, but it would be much simpler if developers would get off the stick and start using GS/OS!

Sierra uses the same type of protection with this game as they use with most of their others. When the game loads the first time, you are asked for a specific word from the user's manual. Therefore you must have the manual to be able to play the game. This method of protection is much more desirable than most others I have encountered.

I believe that ManHunter is an excellent value, and you will get many, many hours of playing time from your investment. However, please remember that this game is not easy, and if you are not the type of person who likes to work at a problem for a long time until it is finally solved, maybe you should look into buying Crystal Quest instead.

The Three Stooges - retail $49.95

Copy Protected - Requires 1.25MB of RAM
IIGS version by Ed Magnin, Russell Truelove, Jim Simmons & Patrick Cook

Cinemaware Corporation
4165 Thousand Oaks Blvd.
Westlake Village, CA 91362
(805) 495-6515

Reviewed by Jami Lowery

Everyone has seen *The Three Stooges* short films, and many of us like them (I understand there are a few people who don't). So the idea of a computer game based on the Stooges sounds great to Stooge fans. Cinemaware calls this an "Interactive Movie," not a game. It is truly not much of a game, so I imagine they had to find something else to call it.

When you first boot up the game you get quite a surprise, and while I won't say what it is, I will say that it is very clever. However that is where the cleverness ends. You may play the game using either a joystick or the keyboard. The joystick is definitely the way to go here, as the keyboard controls are very difficult to get the hang of. The object of the game, which is explained after the title and credit pages, is to raise enough money through various methods to save Ma's Orphanage. A measly $5,000 is all you need to save the orphanage for Ma, but if you also want to repair it (which any decent Stooge would want to do) you need to raise $10,000, and as an extra bonus for raising over $10,000 the Stooges get to marry Ma's daughters. And did I mention that you only have 30 days in which to do it?

In those thirty days, the Stooges must travel throughout Stoogeville looking for ways to get the money. You don't have to wander aimlessly, though, because Moe has a map of Stoogeville. There are 180 places to go, and you can only travel in one direction, because Stoogeville is a one-way street! Above Moe's head you can see the next six places on the map. Moe's hand moves randomly about the choices, to choose an event just press the joystick button (or the <option> or Open-Apple key if you're using the keyboard). At the beginning of the game Moe's hand moves slowly, but as time goes on the speed of the hand increases making it harder to choose the block you want. Choosing the wrong one can cost you (literally); you may have to pay taxes on money you have raised to the evil banker, or he may take days away from you. There are also mousetraps set up as one or more of your six choices. Clicking on a mousetrap will cause Moe to lose a finger and the Stooges lose a day. If Moe gets all of his fingers "snapped" the game ends. The different events or "games" you can choose from are "Slapping Game," "Help Wanted: Waiters!," "Help Wanted: Doctors," "Boxing," "Crackers," and "Trivia". There are also "$" and "?" squares. Choosing the "$" square will get the Stooges money for nothing, while the "?" square will either get the Stooges money or possibly the evil banker.

The "Slapping Game" is a very weak attempt to integrate the Stooges' slapping-and-poking routine into the game. This is, however, the only way to get Moe's hand to slow down when it gets too tough to make the choices you want. In this game Moe is standing between Larry and Curly, and just moving the joystick will make Moe throw a variety of fakes or duck, moving the joystick and pressing the button will cause Moe to kick, punch, slap, poke, pull, or turn around. Each time Moe connects with another Stooge the speed of the hand is decreased; however, if another Stooge hits Moe, or if Moe misses a Stooge, the speed is increased. It is not always easy to get the speed decreased a sufficient amount.

"Help Wanted: Waiters!" is the classic Stooge pie fight. The object is to serve as many pies as you can while dodging pies being "served" at the Stooges. Of course, the guests being served pies are "high society snobs." You control all three Stooges with the joystick. Simply moving the joystick to the appropriate position will cause a Stooge to duck. Moving the joystick and pressing the button will serve a pie. This event ends if the Stooges are hit by five pies. There is money awarded for each pie served (and this means hitting a guest and not just tossing a pie).

"Help Wanted: Doctors!" is a fairly easy way to make some money. In this event the Stooges are driving little cars around in a hospital. The object here is to collect as many supplies as possible on the way to the operating room while avoiding patients. The amount of money awarded depends upon which Stooge picks up a supply and the amount of time left upon the Stooges' arrival in the operating room. Running over patients slows the Stooges down, and I found this event more

profitable when I did not try to pick up as many supplies and simply rushed to the operating room.

The boxing event is the one that annoyed me the most. The controls here are very slow and very marginal. I recommend avoiding this event if possible. Anyway, in this event you control Larry. Curly has entered a boxing match and must hear "That Weasel Song" in order to win. Larry must maneuver around and over objects on his way to the radio shop to get a radio and then maneuver his way back to the boxing ring before the end of the sixth round. The top of the screen has a stopwatch keeping track of the rounds. Really, the controls are sluggish in all events, but painfully non-responsive in this one.

"Crackers" is a good event for raising money. Curly must eat as many crackers from bowls of oyster stew as he possibly can before the oyster gets them. You use the joystick to maneuver the spoon around the bowl, and pressing the button will cause Curly to scoop up the cracker and eat it. You are awarded money for each bowl of stew finished and each cracker eaten.

Trivia is probably my favorite event. It makes no difference here how slow the controls are and, hey, you might just learn something! The questions are all multiple choice, Stooge-trivia. I found that some of the answers can be found in the bit of Stooge history in the booklet that comes with the game. Simply choose "A," "B," or "C" and press the button. Money is awarded for a correct answer, and if you answer incorrectly, you will not be told the correct answer. The question will probably come up again.

The game has some impressive digitized sounds and graphics from the Stooges' shows, but that is all that impressed me, personally. Overall, I found the game annoying, and painfully slow even when run from a hard drive. The introduction is slow, the controls are slow, disk access is slow, and you spend a lot of time just waiting. You can press the <esc> key to skip some of the introduction, and pressing the <esc> key during the ending of the game lets you start over without seeing any of their impressive little intro.

This game can, in fact, be copied onto a hard drive (as alluded to before), but it is "key-disk protected," requiring that the original disk be inserted at the beginning and end of each game. This isn't too bad, but it would be nicer if Cinemaware trusted IIGS owners enough to use no copy protection at all, or had opted for an off-disk form of copy protection. And if you follow the directions in the manual, it instructs you to copy the entire contents of both disks to the hard drive, copying the system files as well as the game files, which is totally unnecessary.

Cinemaware has put out some pretty great "Interactive Movies" for the Apple IIGS (e.g. Defender of the Crown, Rocket Ranger), but this is not one of them. If you are considering buying this game because of Cinemaware's reputation, unless you are a diehard Stooge fan and just have to have it, you would be better off saving your money.

(Designed to Stir up Controversy and Increase the Circulation)

Compiled by Professor G.S. Gumby

But Can You Cook Pancakes On It?

The Vulcan internal hard drive from Applied Engineering is one hot item! How hot? Well, we hear that folks have actually been getting burned when they touch them! Yowch!

Over There! Over There!

From our snoops in Germany (yes, in Europe), we learn that Apple has stopped selling to the Army and Air Force Exchange Service (AAFES) stores that run the military post exchanges. This move is surely going to make for some unhappy soldiers, and further solidify Tandy's and Commodore's grip in that market. Apparently Apple got tired of hearing complaints about the lack of sufficient customer service from AAFES. Purely a personal opinion, but don't you think our fighting forces deserve better treatment than this? Perhaps when the boys get done in Panama they could stop off in Cupertino for a few day, hmm?

C You Real Soon!

Byte Works, Inc. is just about ready to release version 1.1 of ORCA/C. If you are a registered owner of version 1.0, watch your mailbox, you'll be getting the update FREE.

Who Ya Gonna Call Now?

Rumor has it that *Call-A.P.P.L.E.* Magazine has ceased publication. Not that this is an incredible shock or anything, we haven't seen a copy 'round these parts for almost 8 months. Still, it's a pity. *Call–A.P.P.L.E.* has always been an incredible source of Apple II information and if it *is* gone, it will be sorely missed.

Broder-Boneheads

Well, the rumors are still flying that Broderbund is dropping ALL its IIGS development. If you give a darn, write or call them at:

Broderbund Software, Inc.
17 Paul Drive
San Rafael, CA 94903-2101
(800) 527-62362 or (415) 492-3500

Copy II-

The new Copy II+ version 9 is a bit easier to use, now that it supports the mouse and lets you execute commands with a single keystroke, but we don't ever remember any of the older versions **bombing** as often as this one does. Another problem with this version is that if it encounters a file with a Resource Fork, it stops what it was doing. No chance to skip the file and continue, it just stops. This can be very annoying if you are in the middle of a file copy, especially if there are still a lot of files left to copy! This Resource-Fork-Phobia is actually a shortcoming of ProDOS 8, but surely there is a better way to handle this! Please, Central Point, stop this messing around and give us a PC Tools Deluxe for the IIGS!

How Hard IS A Hard Card?

The InnerDrive, the Vulcan, the Klingon, and the Romulan are all great hard drives, but they all share the same problem: They replace your power supply (the Klingon and the Romulan actually replace both your power supply *and* your video display) and so you can only use one of them at a time. The IBM PC world has long had available internal hard drives that fit *entirely* on a single expansion card, no need to replace the power supply or anything silly like that. Why can't we get one of these for the IIGS?

If you have a rumor, wish, or blatant lie that you would like others to know about, send it to:
GS+ Submissions
c/o EGO Systems
P.O. Box 15366
Chattanooga, TN 37415

If we publish it, we will send you that issue free (or if you are a subscriber, we will extend your subscription for one issue)!

FOR SALE: **Panasonic 1091 dot matrix parallel printer.**

Epson compatible. Will work with Apple II or Macintosh computers with a parallel interface cable (not included). Prints 120 cps draft (120 dpi) and 29 cps near letter quality (240 dpi). Asking $150 (includes shipping). Call or write to:

Noreen Ribaric
4126 Mountain Creek Road #20
Chattanooga, TN 37415
(615) 870-4413

WANTED: **An ImageWriter I or ImageWriter II printer.**

Call or write to:

Jami Lowery
313-C Hedgewood Drive
Chattanooga, TN 37405
(615) 870-1238

FOR SALE: **Just about every game we have reviewed!**

We buy 'em, play 'em to death, write a review and then move on to the stuff for next issue! All titles 1/2 price! (Ark II and Crystal Quest not included!)

***GS+* Magazine**
POB 15366
Chattanooga, TN 37415
(615) 870-4960

WANTED: **Classified Ads!**

See below on how you can see your very own classified ad here in *GS+* for a minimal cost. Send to:

***GS+* Classifieds**
P.O. Box 15366
Chattanooga, TN 37415
(615) 870-4960

Readers can place an ad in the *GS+* Classifieds for only $5. This cost buys 25 words in one issue of *GS+*. Additional words are just 10 cents each. Centering and italics are free, boldface costs $1 extra per line of boldface text. The *GS+* Classifieds are the perfect way to contact all of the other IIGS owners out there. The deadline for inclusion of a Classified ad in the next issue (Volume 1, Number 4) of *GS+* is February 15th, 1990. Simply fill out the coupon below (or a photocopy of it) and send it to us here at *GS+*.

GS+ CLASSIFIED AD ORDER FORM

Send To: *GS+* Classifieds, POB 15366, Chattanooga, TN 37415

Please include check or money order (made payable to EGO Systems) with your ad.

Number of issues to run: _____ Total number of words: _____ Total enclosed: $_____

Ad Copy: _____
_____
_____
_____
_____

Your Name: _____ Phone: _____
Address: _____
City: _____ State: _____ Zip: _____

Every issue, the editors here at *GS+* pick out a product for the Apple IIGS that you should avoid like the plague. Then we write about it and put what we've written here in the back of the magazine so you can find it easily, read it, and not have to buy the magazine. But, with the money we've saved you, you really should buy the magazine, you know!

Gnarly Golf - retail $29.95

Copy Protected - Requires 512K of RAM
Program by Jim Coliz, Jr. & Darren Bartlett

FanFare/Britannica Software
345 Fourth Street
San Francisco, CA 94107
(415) 546-1866

Reviewed by Steven W. Disbrow

Not Exactly Gnarly...

I bought Gnarly Golf after being impressed by one of FanFare's other titles, Laser Force (see review on page 30 of the November-December 1989 issue of *GS+*). I thought I would be getting a non-copy-protected Zany Golf type game that I could run from my hard disk. Boy, was I wrong! Not only was Gnarly Golf copy protected, but it also refused to work with System 5.0 (and 5.0.2) and so I could not run it from my hard drive. Being disappointed, but still wanting to see just how "gnarly" this golf game was, I booted it from the floppy.

The Hole Truth

The first hole, "Kaleidoscope" is an exercise in pattern recognition, patience, and semi-psychedelic flashing lights designed to make you lose your lunch. This one takes about 60 seconds to figure out and finish. The second hole is a **beautifully** drawn pool table that you have to sink the ball in one of the six pockets. This one takes about 20 seconds to complete -- 10 to marvel at the wonderful graphic and 10 to put the ball in the pocket. The third and fourth holes, while beautifully drawn, were equally simplistic and uninspiring. After finishing these holes, I just did not care anymore and turned the game off.

Feeling that I might just be in a bad mood that day, I called up ace review writer, Wayne Packard, and asked him if he might want to review Gnarly Golf. He did, so I packed it up and took it to him.

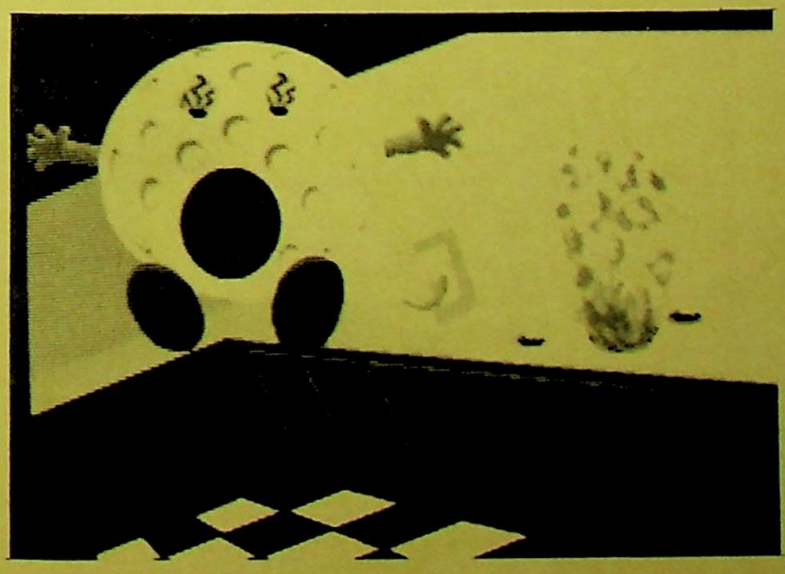
Two days later, I ran into Wayne at his regular place of employment and asked him what he thought of Gnarly Golf. "Well," he replied, "if you reformatted the disks and used them for hard drive backups, they might be worth something. Pity I don't have a hard drive. Can I give this back to you?" I told him to keep the game and try to come up with something a bit more detailed for publication in the next magazine.

Time passed, and neither Wayne nor myself could think of much more to say. He pretty much forced me to take it back, and I've been trying to play it with an open mind, but I always seem to end up taking out the trash or washing dishes or doing something fun instead. I even tried to get this issue's cover-boy, Chris Shutters, to play it. I sat him down at the computer, booted the game for him, told him how it worked, and left the room to get us something to drink. When I came back a few minutes later, he was playing Arkanoid II.

There are a couple of good points to Gnarly Golf: some of the graphics are incredibly detailed and realistic, and the method of putting the ball is much easier than the way it's done in Zany Golf, but that's it.

Sink This Putt...

If you've just **gotta** have a wacky type golf game, get Zany Golf. It's also copy protected and very tough to run from a hard drive, but at least it's fun. So, to sum up, unless you collect golf games, or you want to pay $29 for a couple of potentially blank disks (I can sell you bargain hunters a couple disks for $20), you should probably leave Gnarly Golf out on the links.



GS+ Magazine
Post Office Box 15366
Chattanooga, TN 37415-0366

TO:

GS+ SUBSCRIPTION INFORMATION

GS+ is published bi-monthly 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 yearly subscription (that's six issues), you can get the magazine only for $2.50 an issue, or the magazine + disk for $6.00 an issue! That's 17-25% off the cover price! What a bargain! 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

Name: _____ **Phone:** ( ) _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

❑ Magazine only - $15/year ❑ Check or money order enclosed ❑ Bill my MasterCard ❑ Bill my VISA expires: __/__

❑ Magazine + disk - $36/year Card No.: ❑❑❑❑❑❑❑❑❑❑❑❑❑❑❑❑

Signature: _____

If you prefer to use your credit card to order by phone, give us a call at **(615) 870-4960.**
Also, call us for information on quantity discounts on subscriptions for schools and users' groups.

Tennessee Residents add 5.5% sales tax. Chattanooga residents add 7.25% sales tax.
Canadian/Mexican orders add $1 extra postage. All other foreign orders add $3 surface, $15 air.