

Buyer's Guide to 33 AppleWorks Add-Ons!

JUNE
1988

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**\$10,000
Contest Winner!**
Page 32

COMPUTE!'S

Apple

APPLICATIONS

10 YOU CAN'T LIVE WITHOUT

**Vital Software &
Hardware Every
Apple II Owner
Must Have**

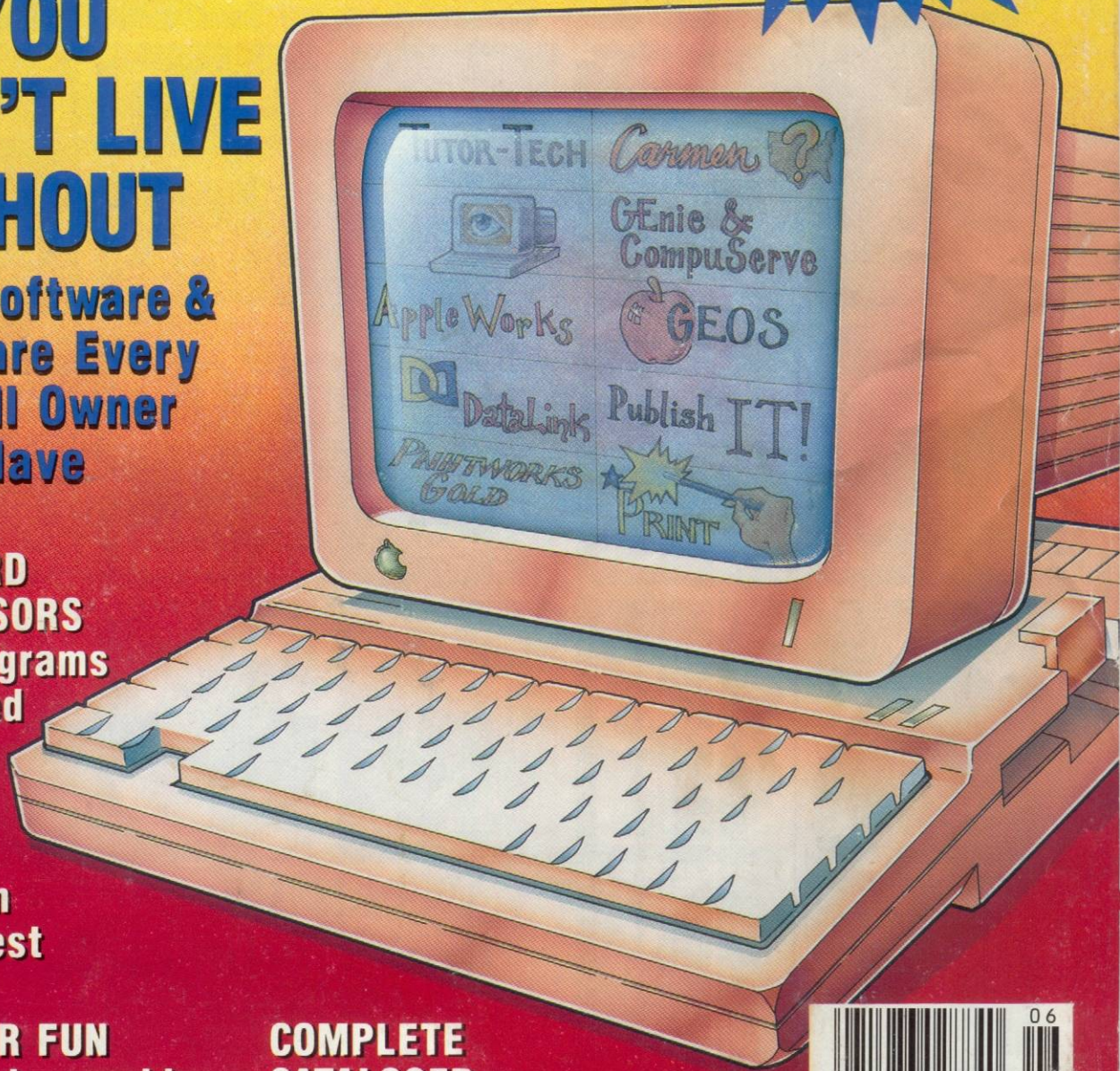
**11gs WORD
PROCESSORS**
Five programs
compared

**WORD
WHEEL**
Word fun
at its best

JUST FOR FUN
Why Apple graphics
aren't better

**COMPLETE
CATALOGER**
Find that ProDOS file

**5
GREAT
PROGRAMS
INSIDE!**



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Editor's Notes

Where's the IIe?

Not walking out Apple dealers' doors, that's for sure. During the month of December 1987, according to projections published in *Computer Reseller News*, barely more than 2100 Apple IIe computers were sold nationwide. That doesn't stack up well against the IIc, which sold more than 13,000 units, much less against the powerhouse of the II line, the IIGS. Nearly 37,000 IIGS's made their way to consumers' homes and businesses during the holidays.

In fact, the traditionally heavy computer-buying season around Christmas was very good to the Apple IIGS. December has always been a strong Apple II month, so it wasn't any great surprise that an Apple II led all microcomputer systems in sales during the month, both in dollar amounts and in units. What was surprising was the strength of the IIGS. It accounted for 14 percent of all computers sold. That was better than any other micro—much better than the Macintosh SE (7 percent), IBM PS/2 Model 30 (6 percent), or the Apple IIc (6 percent).

But what does this all have to do with the IIe? Plenty.

Rumors have been circulating since late last year that the Apple IIe production was either discontinued or about to be. Though no formal announcement has been made (and don't expect one soon), it doesn't take much more than a trip into a few Apple dealers' to see that the IIe's consumer days are numbered. Visit a dealer, and you're lucky if you even spot a IIe. The prominent positions up in the front of the store are given to the Macintoshes and the IIGS's. A bit further along you'll find the IIc's.

Advertising, especially television advertising, shows that Apple has IIGS on the brain. The most

recent TV ad wave for the II line as of this writing was during broadcasts of the Winter Olympics. Every ad I saw highlighted the Apple IIGS. It's not hard to understand the reasoning behind such marketing. The IIGS is a new computer, and new computers almost always sell better than their older predecessors. The IIGS is also a more expensive computer. Sell the same number of IIGS computers as IIe's, then guess which one brings in the most dollars.

Apple wants to sell IIGS computers, and the one model in its line that most closely competes with the IIGS is the IIe. Both machines have slots for various add-on boards, both require external disk drives, and both easily can be expanded with more memory. If Apple wants to maximize IIGS sales, whether to people at home or to schools, it will have to eliminate the IIGS's closest competitor, the IIe.

By doing so, though, Apple may also maximize bad feelings among hundreds of thousands of loyal Apple IIe owners. Even now it isn't hard to hear Apple IIe and IIc owners (and even some independent developers) grumbling about the attention paid to the IIGS at the expense of other Apple IIs. The newest software—perhaps the best software—is being developed exclusively for the IIGS, not for the II line as a whole, the background voices are saying. And Apple is encouraging this. Software packages that emulate the Macintosh interface or those taking advantage of the IIGS's superb sound, speech synthesis, and graphics are the ones that Apple points to when it wants everyone to see what an Apple II can do.

Apple needs to listen to these disgruntled Apple II owners. Not everyone wants to (or can) move to a IIGS. Millions of II+, IIe, and IIc

users will stick with their machine. Or perhaps they'll stay with it only as long as it's a viable system, with software that continues to grow stronger. And if they feel mistreated now, what will they think when they're considering another computer? Will they buy another Apple product or move to an inexpensive MS-DOS machine (or in the not-too-distant future, look to cheap PS/2 clones)?

Signs seem to indicate that Apple is listening to the non-IIGS crowd. There should be a recommitment by Apple to the non-IIGS Apple II line sometime in the first half of this year. What form that takes, however, is up in the air. A beefed-up Apple IIc has been mentioned in the past and may be revived. More memory, an internal 3½-inch disk drive, and a faster processor are the possible trademarks of an upgraded IIc.

But even if Apple doesn't put its weight behind the Apple IIc/IIe and continues to concentrate on the IIGS, it doesn't mean that millions of machines are going to vanish. The Commodore 64's demise has been promised for several years now, and the computer keeps on selling and people keep on using it.

The days of the Apple IIe are not as dark as many might think, either, especially when you take a look at some of the software running on that computer. Our "Ten You Can't Live Without" piece in this issue highlights ten products for your Apple II, nine of which run on a 128K Apple IIe or an Apple IIc.

Packages such as *GEOS*, from Berkeley Softworks, may well extend the IIe's lifespan far beyond expectations. *GEOS* did that for the Commodore 64, and a repeat isn't out of the question. Apple II desktop publishing is here, and almost every package will work on IIe and IIc computers. The *Timeout* series of

Coming Attractions

Coming in the August issue of *COMPUTE!'s Apple Applications*:

The Finder Find Out. Take a close look at what the IIGS *Finder* has to offer. Learn what it is, how it operates, and how you can get the most out of it.

Galaxy Defender. Defend the galaxy from the relentless onslaught of 30 alien invasions. Incredible sound and graphics make this all-machine-language game a true arcade experience.

GEOS. This new graphics-based operating system from Berkeley Softworks brings icons and pull-down menus to the venerable Apple II line. But what can it do for you?

Sounding Board. Visually design sounds onscreen and play them back or save them to disk for use in your own programs.

The Before-School Apple. See what Apple computers can offer your preschooler. From software to hardware, there's a lot out there.

Poster Printer. Turn your favorite high-resolution pictures into giant, wall-sized posters.

AppleWorks add-ons, programs which pack necessities and luxuries into the most popular program in Apple II history, work just as well on an Apple IIe as they do on a IIGS. Third-party developers may be hustling to get Apple IIGS products on the shelves, but they're also astute enough to remember that no matter how well the IIGS sold last December, it's still dwarfed by the vast numbers of other IIs on desktops. Numbers talk, as they say; companies interested in selling large numbers of software packages will continue to market items for the Apple II line as a whole for some time to come.

Apple must be more mindful of its installed base of Apple II owners and give those owners at least as much attention as the strong third-party developers continue to give.

The future of the Apple II may clearly be the IIGS, but its past is just as certainly the IIe. If Apple sacrifices the past for present profits, it risks losing the goodwill of all those who made the company a success in personal computing. Apple needs to remember the past as it moves towards the future.

Gregg Keizer
Editor

All the Apple II programs in this issue are available on our companion Apple Applications Disk. This 5¼-inch disk, formatted for both DOS 3.3 and ProDOS, runs on any Apple II+, IIe, IIc, or IIGS. You can order this disk (\$12.95 plus \$2.00 shipping and handling) only through *COMPUTE!* Publications, either by using the card bound in this issue or by calling toll-free 1-800-346-6767 (in New York, 1-212-887-8525).

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ADVERTISING OFFICES

New York: ABC Consumer Magazines, Inc., 825 Seventh Ave., New York, NY 10019. Tel. (212) 265-8360. Peter T. Johnsmeyer, Group Advertising Director; Bernard J. Theobald, Jr., Advertising Director
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Editorial inquiries should be addressed to The Editor, *COMPUTE!'s* APPLE APPLICATIONS, Suite 200, 324 West Wendover Ave., Greensboro, NC 27408

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TEN YOU CAN'T LIVE WITHOUT

Gregg Keizer and
Randy Thompson

*Some things in
life you just
can't do with-
out. These ten
Apple products
should be on
everyone's
must-have list
this year.*

There are literally thousands of Apple II software products that have seen the light of day over the past decade. Hundreds of pieces of hardware have been designed, marketed, and sold. Millions of people have struggled with buying decisions when faced with shelf after shelf of brightly-colored software packages or rows upon rows of gleaming chrome and plastic devices.

Of course, no one goes out and buys everything. If your pockets are deep, the most you'll end up with will be a room full of hardware and a closet full of software. You probably won't even have time to use it all.

Most of us have smaller dreams. *AppleWorks* with everything. A few choice games that stand the test of time and replay. Favorite applications we use every day, or at least every week. A cherished hardware device that we depend on.

We've dreamed those same dreams, and put in our 1988 wish list early. The ten products we've selected are, in our opinion, must haves, must buys in 1988 if you own an Apple II.

The software packages and hardware products we've chosen reflect a bit of the traditional while demonstrating the strength of the new. Many of the Ten You Can't Live Without were introduced late last year or early this year. Though this isn't an exhaustive list (how can it be with only ten?), it does, we think, illustrate the kinds of software and hardware you're going to see, and are going to want, in 1988.

The Ten are certainly within the budget of most Apple owners, though buying all may be out of the question. Decisions, decisions. Now, though, you at least have someplace to start.



AppleWorks 2.0 with Timeout

AppleWorks is the standard in the Apple world. When people write, calculate, and organize with their Apple II, most of them do so from within the file-folder metaphor of *AppleWorks*. No real list of "must haves" for the Apple II can be complete without this integrated package of word processor, spreadsheet, and database. Although it's showing its age (it was introduced more than four years ago), a recent upgrade added a major feature—mail merge.

But *AppleWorks* is almost as important for what it doesn't do as it is for what it does do. What began as a cottage industry—creating add-ons to fill functions *AppleWorks* couldn't—has grown into a major portion of Apple software development.

AppleWorks-compatible programs do everything from help you manage your finances to create impressive business charts and graphs. Virtually all of these add-ons operate outside of *AppleWorks*. In other words, you must quit *AppleWorks* to use the enhancement program. Beagle Bros.' *Timeout* series, however, is quite different. *Timeout*, actually a series of packages, installs within *AppleWorks* 2.0 and is instantly accessible from any part of the program. *Timeout* modules include a macro program (*UltraMacros*), graph creator (*Graph*), spelling checker (*QuickSpell*), printing utility (*SuperFonts*), and three other packages of file utilities, desk accessories, and spreadsheet printing programs. You can install just one *Timeout* program or as many as can fit on your disks.

Making a bar chart from *AppleWorks* spreadsheet data, for instance, takes just a few decisions and keypresses. Printing an *AppleWorks* word processing document with fonts that reproduce Macintosh-quality text is just as simple. The ability to spell-check a document, without the time-consuming process of quitting *AppleWorks* and rebooting another

application, is refreshing.

AppleWorks has a long life ahead of it, if for no other reason than the huge installed base and its effect on the Apple II software market. Programs like the *Timeout* series will only extend that lifespan.



GENie and CompuServe

Another product every Apple owner can put to good use in 1988 isn't new. In fact, it isn't actually a product. Information is the lifeblood of your Apple—helping you process it is the computer's *raison e'être*.

The most current information about and for your Apple II isn't found in a magazine or book. Their lead times are too great, no matter how fast and hard they work (like us). Only electronic information can keep you instantly abreast of the latest and greatest. Though there are numerous electronic information sources, from large commercial services to home-grown bulletin boards, two, GENie and CompuServe, stand out. You access GENie and CompuServe—like all electronic information services—by telephone. You must have a modem (the standard modem speed is now 1200 bps), an account number, and a password to connect to either system. Sign-up fees vary, and in many cases you'll get a reduced rate and some free on-line time when you buy a modem.

Once you're a member, you can peruse any of the informational service's areas, generally called *forums* or *SIGs* (Special Interest Groups). The place to head for is the Apple II area. GENie and CompuServe have established, well-run Apple II forums; in our experience they're the best in the business. Both Apple II-specific forums include such standards as message boards, where you can get answers to almost any question; on-line conferences, set up so that hundreds can "talk" about topics of mutual interest or "meet" an Apple celebrity; and data libraries, where programs written by other Apple users are available for downloading.

Frankly, the data libraries are what make GENie's and CompuServe's Apple SIGs so worthwhile. Sections are devoted to topics ranging from graphics to music to the Apple IIGS. Long before much software was available for the IIGS, for instance, there were dozens of GS-specific programs on both GENie and CompuServe. Sample software in these Apple forums includes full-feature telecommunication programs, *AppleWorks* templates, and near commercial-quality games.

Information is disposable, especially on the informational services. On the other hand, these are the places to look for the newest news and the newest user-written software. To keep up with the Apple world, you need access to the instant electronic media only telecommunications can provide.



ComputerEyes

Most of us aren't artists. A great paint program does not a painter make. Not without a lot of time, anyway. Some of us don't have that kind of patience, which is why video digitizer and scanners have become so popular.

ComputerEyes is the most-used video digitizer for the Apple II. For Apple II+, IIe, and IIc computers, there's the regular ComputerEyes, while Apple IIGS owners should look at the ComputerEyes especially developed for their machine.

ComputerEyes consists of software and an add-on board that goes in one of your Apple's slots. After plugging in the board, connecting a video camera (either a black-and-white or color camera, or camcorder will work), and booting the software, you're ready to snap a picture of virtually anything.

Snap is a good word, for it's impossible to capture movement with ComputerEyes, simply because the digitizing process takes several seconds at best. Capturing children on the computer can really only be done if you're using a camcorder that offers a freeze-frame option, for instance.

ComputerEyes lets you digitize objects, people, and scenes in one of several hi-res modes. The IIGS ComputerEyes offers super-hi-res digitizing. Once the image has been captured in your computer's memory, you can save it to disk and then load it into any of a number of paint or draw programs for changes. This is a boon to desktop publishers especially, for digitized images usually can be inserted into page layouts with little trouble. Using the II+ /IIe/IIc ComputerEyes, for example, you can even grab images and import them into such low-level publishing programs as *Newsroom* and *Print Shop*.

ComputerEyes works as advertised and is an easily mastered piece of hardware. It extends the graphics abilities of anyone with an Apple II computer and makes possible more sophisticated images than most of us could manage on our own.

(An alternative to ComputerEyes is Thunderware's ThunderScan, a scanner that "reads" flat artwork into your Apple.)



Tutor-Tech

Hypertext is all the rage right now, thanks in good part to Apple's *HyperCard*, a hypertext application now included with every Macintosh. Hypertext, though sometimes hard to get a handle on, lets you work with or look through information—whether it's in the form of a document, database file, or CD-ROM encyclopedia—in a nonsequential form. In a hypertext document, for example, you're able to jump to peripheral information about a subject by perhaps clicking or pointing at an unknown term.

Partly because of the *HyperCard* hype, partly because hypertext is a perfect example of something that can only be done with a computer, Apple II owners are feeling left out in the cold. *HyperCard* isn't expected for the Apple II line soon, and when it does come, it will probably appear only for the more Mac-like IIGS.

Fortunately, Apple II owners don't have to wait for a hypertext program. Although it doesn't really compare to *HyperCard*, Techware's *Tutor-Tech* is an excellent rendition of many hypertext features.

Tutor-Tech was developed for educators as a program to make computer-based lesson creation easier. Don't let that fool you—*Tutor-Tech* can be put to work by anyone, teachers and nonteachers alike.

Like *HyperCard*, *Tutor-Tech* lets you create screens which include graphics, text, and buttons. The last is the key to both programs, for, by clicking on a button, you decide what information is presented next.

Simple graphics can be created with the available tools, which are much like those found in many art programs (quite similar to the old *MousePaint*). In fact, more complex art can be imported from *MousePaint* and *Print Shop* and then added to *Tutor-Tech*. Text can be entered in one of several fonts and sizes. Buttons can be placed and their actions defined.

There's no programming language in *Tutor-Tech*, unlike *HyperCard*, which has its HyperTalk for development of really sophisticated stacks, as its collections of screens are called. But *Tutor-Tech* can deliver many other *HyperCard*-like features, such as linking screens, branching to other screens on demand, and creating large collections of screens.

Hypertext is hot, and with *Tutor-Tech*, you can try your hand at it now.



Where Is Carmen Sandiego?

No other computer is better recognized in the classroom than the Apple II. More children are familiar with Apple II computers than any other, a fact many parents keep in mind when they're deciding which machine to buy for the home.

With so many Apples in homes, it's no wonder that educational software is as popular after school as during class time. There are hundreds of educa-

tional programs appropriate for the home, and for the classroom, but one series that stands out is Broderbund's *Where in the . . . is Carmen Sandiego?*

Now in its third manifestation, *Carmen Sandiego* demonstrates the best in educational software. Not only do children learn from its play, but they have fun doing so. Geography, not the most appreciated of school subjects, is the focus of *Carmen*. You play the part of a rookie gumshoe hot in pursuit of Carmen Sandiego and her gang. Depending on the game, you follow their twisted trails across the world, the U.S.A., or Europe. You chase one of the gang from city to city, looking for clues as to the criminal's identity and whereabouts. When you have an idea whom you're following, you provide enough information—hair color, sex, favorite food, hobby, and more—to obtain a warrant for his or her arrest. If you're right, you go on to chase others. If you're wrong, well . . . there's always another assignment.

But *Carmen* is not simply a jazzed up computerized version of *Clue*. Learning takes place as you puzzle out the geographical clues each step of the way. The key to finding Carmen and her minions is to know where they're heading next and get there ahead of them. You can only do this if you know that Myrtle Beach is in South Carolina, for instance, and you head accordingly to Charleston. To help you in your search, each game includes a reference guide. *Where in the U.S.A. is Carmen Sandiego?*, for example, is packaged with a copy of the *Fodor USA* travel guide. Answers to all the clues are somewhere in the reference.

Carmen teaches in such a subtle way, however, that few children will see the game for what it really is—lessons in problem solving, logical thought, and geography.



Apple GEOS

Apple brought icons and pull-down menus to personal computers with the introduction of their highly-successful

Macintosh computer. It seems ironic, then, that a company other than Apple would come out with an entirely new, icon-based user interface for the Apple II family of computers, but that's exactly what happened. Berkeley Softworks—a well-established California-based software company—has released *GEOS (Graphics Environment Operating System)*, a Macintosh-like operating system, for the Apple II.

GEOS replaces both ProDOS and Applesoft BASIC, providing its own graphics-based operating system. To manipulate files, for example, you use a mouse or a joystick to maneuver a pointer around the screen, clicking on file icons and selecting options such as OPEN or DELETE from pull-down menus that appear at the top of the screen. If you're familiar with the Macintosh or Apple IIGS *Finder*, then you know how much easier this type of interface can be to both learn and use.

Provided with the *GEOS* system disk are the two application programs *geoPaint* and *geoWrite*. There are also various desk accessories and even a spell checker. Berkeley Softworks promises many new *GEOS* applications, with titles like *geoFile*, *geoCalc*, *geoBASIC*, and *geoProgrammer*—all of which make full use of *GEOS*'s friendly user interface. Best of all, programs written under the *GEOS* environment have the ability to share data: You can calculate something with *geoCalc*, copy the results into *geoWrite*, add a bar graph from *geoPaint*, and then print it all out.

GEOS is not entirely new: It has been available for the Commodore 64 computer for quite some time and is packaged with every 64c sold today. If Berkeley Softworks provides the same level of customer and product support for the Apple as it does for the 64, Apple *GEOS* should become a definite best buy.



Publish It!

Desktop publishing is a hot topic—especially in the Apple world. So it's no wonder that our list of top-ten products

includes a desktop publishing program for the Apple II. *Publish It!* isn't just riding on the coattails of desktop publishing's current success, however. This is a serious piece of software, capable of producing advertising flyers, newsletters, and even small booklets or magazines.

The first thing that impresses you about *Publish It!* isn't its printing or text-editing abilities; it's the user interface. This is a complete Macintosh-type program, with mouse/joystick control, pull-down menus, dialog boxes, and file-selector windows. And all of the program's most-used options are selected simply by clicking tool icons that appear on the left part of the screen.

Text for your documents can be pulled in from *AppleWorks*, *Bank Street Writer*, or straight from an ASCII text file. Editing text is easy using *Publish It!*'s built-in, multifont word processor. To incorporate graphics, you can import pictures from *MouseWorks* or *Dazzle Draw*, or you can generate them yourself using the program's simple graphics tools—Line, Rectangle, Round-Cornered Rectangle, and Circle. As for printing, *Publish It!* provides drivers for most dot-matrix printers. If you need laser-printer output, Timeworks offers *Publish It!*'s *Laser Printer Accessory-Pack*—a separate product available at additional cost.

To compliment this easy-to-use program, *Publish It!* provides several extra files on disk. In fact, you receive four double-sided 5¼-inch disks packed with fonts, sample documents, and over 200 ready-to-use graphics. (For \$7.70, registered owners may obtain the program and all of its additional data files on one 3½-inch disk.)

If you're thinking of doing any desktop publishing on your home computer, then *Publish It!* is well worth considering.



Print Magic

Print Magic falls somewhere between productivity software and software that's just plain fun. With it, you can put together smart-looking book re-

ports or crank out comical certificates for your friends. *Print Magic* generates greeting cards, flyers, banners, custom stationery—whatever you want.

Print Magic is logically laid out, with easy-to-understand pull-down menus and onscreen options. To create a card, click on Card Design; to make a banner, choose Banner Design; and when it's time to print that Christmas card, pull down the Print menu and select Print Card. Even without the manual, it's easy to find your way around *Print Magic*.

There are over 80 graphics and fonts provided with the program, along with several premade cards—a must for the forgetful person who needs to print a birthday card or a Valentine's card in a rush. If you wish, you may borrow clip art from *Newsroom* or import character sets from *Fontrix*. *Print Magic* even has its own graphics editor and font editor. With the graphics editor, entire high-resolution screens can be loaded, modified, printed, and saved to disk.

Print Magic comes with cheat sheets that show all the typefaces, graphics, and premade cards that the program provides. This way, finding that perfect piece of clip art is easy.

Most of all, *Print Magic* is fun to use. The graphics are detailed and entertaining, and the premade cards are witty and well designed. The only drawback is that you'll find yourself using a lot of paper. After all, you'll want to make some banners for the classroom, cards for your friends, a certificate for your grandmother, some stationery, for yourself. . . .



Paintworks Gold

One of the newest products to make our ten-best list is Activision's *Paintworks Gold*. Touted as the most powerful IIGS paint program, *Paintworks Gold* offers features not found in your average graphics program—features such as animation, gradient-color fills, and multiple paint screens.

At first glance, *Paintworks Gold*

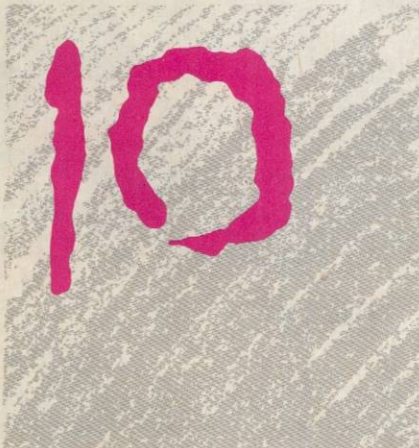
looks like a color version of *MacPaint*. But as you scan each pull-down menu, you'll find a variety of unique options, ranging from the practical (Invert, Resize, and Show Page) to the obscure (Distort, Brush Mirrors, and Slippery Colors).

As with all good software, you don't have to understand the program's intricacies to put *Paintworks Gold* to use. Sticking with the paint tools that appear onscreen—Pencil, Paintbrush, Rectangle, and so on—you can create some very impressive artwork. For those interested in doing (or drawing) the impossible, *Paintworks Gold* has enough options to keep you busy for quite a while.

Some of *Paintworks Gold's* less common painting features include multiple zoom levels; a wet sponge-type tool that *smears* predrawn shapes and colors; a smoothing tool for eliminating the jaggies; Rotate, Perspective, Resize, Bend, and Distort for reshaping objects in every possible direction; and an animation option that compresses several pictures into one frame-by-frame animation sequence that can be played on screen or saved to disk.

Paintworks Gold has several color options. You can choose from a palette of 4096 colors, and each drawing can have a maximum of 16 different shades. For simple animation, *Paintworks Gold* offers color cycling—a common programming technique for animating screen graphics.

Through May 31, 1988, registered owners of Activision's *Paintworks Plus* program can upgrade to *Paintworks Gold* for only \$20. Owners of any other IIGS paint program can receive *Paintworks Gold* for a mere \$40—not bad considering *Paintworks Gold's* \$99.95 suggested retail price. With this price/performance combination, Activision just may set the gold standard in Apple IIGS paint programs.



DataLink

If only telecommunications were as easy as picking up the phone. If only telecommunications were as easy as

most other computer applications.

Unfortunately, it's not. For most of us, getting started with telecommunicating is one of the most frustrating computer experiences. It's no wonder so many Apple II computer owners refuse to go online. Expensive modems, the lengthy learning time necessary for much telecommunications software, snarled cables—it all contributes to telephobia.

Applied Engineering, the dominant player in the Apple II add-on board market, sells a modem/software package called DataLink for \$219 that takes a lot of the headache out of telecommunications. DataLink is a 300/1200 bps internal modem, which means you plug it into one of the empty slots inside your Apple II, II+, IIe, or IIGS. Because it's an internal modem, there's no power supply to connect, nor cables to plug in between the computer and modem. All you have to do is slip DataLink into a slot, close the computer cover, and connect the phone line to the jack built into the board (there's another jack and some extra phone cable included to connect a phone to the board, too, if you want to use the line for both data and voice).

It gets better. DataLink includes two telecommunications programs, one in the board's ROM, the other on disk. The former isn't always easy to use, since you have to type in the Hayes commands manually, but it's always instantly available. The disk-based software is simpler to use, and it's a relatively powerful program which offers macros. When you buy DataLink, you also get free subscriptions to The Source, GENie, and the Official Airline Guide. And, like all AE products, DataLink comes with a five-year warranty.

It's the simplicity of DataLink that's most impressive, though, and what convinced us that Apple owners without a modem (and even some with) should take a look at it.

The Ten Turn Over

That's the ten our Apples couldn't do without. Such a list doesn't stay static, of course, not in this industry when new software and hardware supplants the old so quickly. In a matter of months, several of the items on this list may be bumped off by bigger, better products that offer more for your money.

Fine. Frankly, part of the excitement of owning an Apple is seeing this continuous stream of new software and hardware that makes us more productive, better entertained, and better educated.

We've made our choices, now you get to make yours. Everyone wins. Everyone who owns an Apple II computer, that is.

Ten, Plus Two

AppleWorks 2.0

\$249.00

Clarix

440 Clyde Ave.
Mountain View, CA 94043
(415) 960-1500

CompuServe

\$39.95 (registration fee)

P.O. Box 20212

Columbus, OH 43220

(800) 848-8199

ComputerEyes

\$129.95 (Apple IIe); \$249.95 (Apple IIGs)

Digital Vision

66 Eastern Ave.

Dedham, MA 02026

(617) 329-5400

DataLink

\$219.00

Applied Engineering

P.O. Box 798

Carrollton, TX 75006

(214) 241-6060

GENie

\$29.95 (registration fee)

401 N. Washington St.

Rockville MD 20850

(800) 638-9636

GEOS

\$129.95

Berkeley Softworks

2150 Shattuck Ave.

Berkeley, CA 94704

(415) 644-0883

Paintworks Gold

\$99.95

Activision

2350 Bayshore Pkwy.

Mountain View, CA 94043

(415) 960-0410

Print Magic

\$59.95

Epyx

600 Galveston Dr.

Redwood City, CA 94063

(415) 366-0606

Publish It!

\$99.95

Timeworks

44 Lake Cook Rd.

Deerfield, IL 60015

(312) 948-9200

Timeout

\$49.95-\$89.95

Beagle Bros.

3990 Old Town Ave., Suite 102C

San Diego, CA 92110

Tutor-Tech

\$195

Techware

P.O. Box 1085

Altomone Springs, FL 32715

(407) 695-9000

Where in the... is Carmen Sandiego?

\$39.95

Brøderbund

17 Paul Dr.

San Rafael, CA 94903

(415) 492-3200

And the Word Was...

Dan McNeill

Choosing the right word processor for your Apple IIGS will be much easier after wordwright Dan McNeill takes you on this guided tour of what's available.

Like British knights of yore, Apple IIGS owners have long sought a mystic grail: a word processor that equals the machine itself. Suddenly, the prospects are looking very good, as recent upgrades have yielded an array of fine programs. The grail is not quite here, but the ranks are closing in.

Current word processors fall into two camps. On the one side are *WordPerfect* and *MouseWrite*—potent programs that slight graphics and are relatively demanding to use. On the other are *GraphicWriter*, *MultiScribe*, and *Writer's Choice Elite*—graceful, pictorial programs that lack a plethora of features. The merits of these two approaches are subject to debate, and the word processor you choose may depend almost as much on your philosophy as on your needs.

Below, you'll find discussions of these five programs in terms of **Power**, **Ease of Use**, and **Ease of Learning**. A program with **Power** has a lot of horsepower under the hood, including copious features, add-ons like spelling checkers, and compatibility with software such as *AppleWorks*.

In contrast, a program that's Easy to Use has stylishness and handling. It offers a high level of what-you-see-is-what-you-get display, keyboard shortcuts, large display, speed, and general pleasure at the monitor.

Finally, a program that's Easy to Learn yields its secrets quickly and effortlessly. Its documentation is clear and inclusive, its support good, and it has a basically intuitive structure.

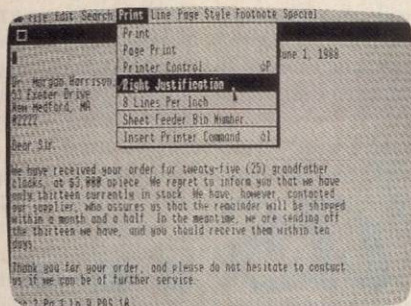
WordPerfect

WordPerfect for the IIGS has been ported over from the IBM PC and retains much of its puissance on its new-found home. Yet it is a major disappointment—clumsy to use and often surprisingly limited. In some ways, it is like a professor who is formidable on the blackboard but cannot manage the everyday tasks of life.

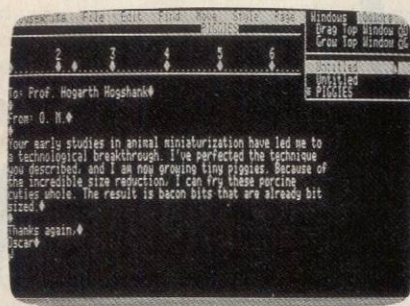
Power. This software abounds with features. It has far too many to list here, and a number of them are quite sophisticated. For instance, it allows different headers/footers on odd and even pages. It does footnotes and endnotes, though it does not display them, and it adds *Continued* to footnotes that must be split. It has Widow/Orphan Protect, and it lets you set conditional page breaks to, say, keep a section title on the same page as the start of the section. Its search-and-replace has two wildcards: one for a single character, the other for any number. Its Overstrike feature lets you print one character atop another. It has four kinds of Underline, and an Append command that adds one document to another.

The program also boasts a mighty 115,000-word spelling checker, which checks for doubled words, does a word count, suggests alternatives, and has its own wildcard, so you can track down proper spellings. It has a thesaurus and mail-merge. It offers numerous macros which can perform chained, repeating, or conditional tasks. *WordPerfect*, however, does not offer graphics, fonts, or type sizes.

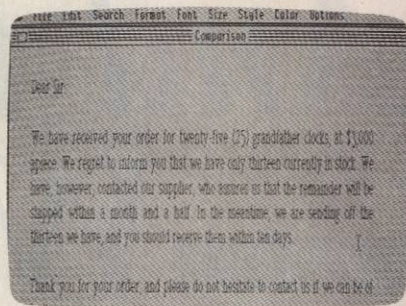
Ease of Use. *WordPerfect* 2.0 is still very gawky. It does not let you select a word by double-clicking—a startling omission on the IIGS. It has no ruler, so simple tasks like setting tabs are harder. It does not display right-justification. Its block cursor hinders text insertion. It has no Plain setting on the Style menu, so converting back from Bold or Underline is more of an ex-



WordPerfect 2.0



MouseWrite 2.6.8B



MultiScribe

ercise. It forces you to seek out your printer manual and enter special codes to print color. When you select a block and press Delete, you see the query *Delete Block?* That's because the program's feeble Undo doesn't work here, and indeed I think it never does. The manual fails to mention it.

Moreover, even the finer features of *WordPerfect* show peculiarities. For instance, though the program does hyphenation, it halts at each word to be hyphenated, beeps, and asks you to perform the hyphenation. It numbers pages automatically, but demands an extra step to mix text with a number, as in *Page 5*. It has a Clean Screen option, which expands the amount of visible text, yet it demands two ungainly steps to exit this mode. And, strangely, you must issue many commands through Help.

In fairness, *WordPerfect* offers numerous assignable keyboard equivalents, which can greatly speed use of the software, and its preset keyboard commands are endless. If you need its features, you can probably get used to it.

Ease of Learning. Any program the size of *WordPerfect* takes time to learn, but the effort is exacerbated here because the software is less intuitive. The company does have a toll-free support number, a sign of class, and I have always found the people on the other end friendly and helpful.

WordPerfect 2.0, *WordPerfect*, 288 West Center St., Orem, UT 84057; (801) 225-5000; requires IIGS, 512K, 3½-inch disk drive, and mouse; not copy-protected; \$179.00.

MouseWrite

MouseWrite is a ProDOS-8 program not written specifically for the IIGS, but one still very useful on that machine. Though it may be unfair to compare it with IIGS software, it is also a compliment. Only the best middleweights wind up in the ring with a light heavyweight. Although *MouseWrite* has understandable limitations, it acquits itself quite well in this comparison.

Power. *MouseWrite* has a splendid assortment of features. Its search-and-replace has a wildcard find. It has soft hyphens and hard spaces, which it calls *sticky spaces*. It comes with 15 custom fonts and offers up to 12 split screens for multidocument editing. It offers a Zoom, so you can check the meaning of the diamond-shaped style markers. It does print spooling and saves selected text. It also has a glossary that can include command entries, giving it a macro capacity. It supports many different printers and lets you create a custom driver.

On other Apple II computers, you need a 384K RAM card to fully exploit *MouseWrite's* features, but on the IIGS they are all at your fingertips. The program comes with a 61,000-word spelling checker that suggests corrections and will scrutinize only selected text, if you like. It has a telecommunications module and mail-merge. The software will inform you of the grade level needed to read your document. It is also fully compatible with *AppleWorks*, with which it can mail-merge.

However, because *MouseWrite* re-

mains essentially a 128K program, it limits document size to 48K, or about 15–16 pages. In addition, it offers no graphics or type sizes, and its fonts are less elaborate. Moreover, its Fill-Justify adds spaces randomly.

Ease of Use. Like *WordPerfect*, *MouseWrite* falters in this category. On the IIGS, its cursor moves in a slow and jerky fashion. The software does not let you select a word by double-clicking. It cannot display color, line spacing, or fill justification. Its Undo only undoes Cut and Paste.

On the other hand, *MouseWrite* comes with a pleasant bag of tricks. It prints swiftly and offers copious shortcut commands. It displays file and selected segment length in words, number of lines in the document, and document size in memory. Its Multi-Printer accessory can print a whole set of files that need not be opened. The software also has an alarm clock and a puzzle.

Ease of Learning. *MouseWrite's* most demanding aspect is its custom fonts, which take awhile to figure out, despite the program's ample documentation. There are actually two manuals: a tutorial and a reference. The former is clear, though overly enthusiastic. The technical support at Roger Wagner is friendly, knowledgeable, and helpful.

MouseWrite 2.6.8B, Roger Wagner Publishing, 1050P Pioneer Way, El Cajon, CA 92020; (619) 442-0522; requires IIGS, IIc, or IIe with 80-column card; 128K, but profits from more; either 5¼- or 3½-inch drive; mouse highly recommended, but not essential; not copy-protected; \$149.95.

The Word Challenge

The printed page is the ultimate goal of most writing, and the Apple IIGS can enhance it enormously. With the right software, the computer can let you peruse the onscreen document, gift it with fonts, sizes, justification, and other traits, then issue a command and spin out a hardcopy of what you see.

To test the five word processors, I used a very simple benchmark. It was a business letter in the best 12-point text font each program offered, that is, the closest to an oldstyle roman typeface. It had a centered letterhead, also in 12-point. The firm name was blue, bold, and 14-point, and the telex listing was 6-point. A red curved rectangle enclosed the address. As letterhead, it was pretty tacky, but it served to distinguish among the programs well enough, as none rendered it perfectly.

I printed each document on an ImageWriter II in the highest quality available. Condensed mode was used over Normal every time, except with *WordPerfect* and *MouseWrite*, which did not offer it.

MultiScribe handled the task best (Figure 1). It supplied the curved rectangle, color, and the 14- and 6-point sizes, and it printed out crisply in the New York font. It stumbled only once, on the top line. Though the screen showed the firm name properly centered, the printer shifted it slightly to the left.

Wilson DeWitt, Inc., Clockmakers
1771 Universal Circle, Ste. 1300
Wellington, CA 99999
213-555-5555 TELEX: WILSIT

June 1, 1988

Dr. Morgan Harrison, M.D.
53 Exeter Drive
New Medford, MA
02222

Dear Sir:

We have received your order for twenty-five (25) grandfather clocks, at \$3,000 apiece. We regret to inform you that we have only thirteen currently in stock. We have, however, contacted our supplier, who assures us that the remainder will be shipped within a month and a half. In the meantime, we are sending off the thirteen we have, and you should receive them within ten days.

Thank you for your order, and please do not hesitate to contact us if we can be of further service.

Sincerely,

WILSON DeWITT

GraphicWriter printed out in the most attractive text font: Bookman (Figure 2). It also generated color and all the type sizes. However, its curved rectangle emerged essentially without curves, and it printed both telex and phone number in 6-point, though onscreen it displayed only the telex in that size. This line was also off-center, since it commenced where it should have if the phone number were truly 12-point. (In standard quality black-and-white, *GraphicWriter* handled the type sizes and centering perfectly.)

Writer's Choice Elite rendered the sizes well, but since it prints type only in black and red, it could not provide blue (Figure 3). It too failed to center the 14-point company name perfectly. When I tried to print in Times, the program truly staggered, ignoring the spaces between words and cramming them together like paper cups in a compacter. The example

here is in 12-point New York, which, oddly, is larger than the same-sized New York on *MultiScribe*.

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MouseWrite printed out much faster than any other program, and it handled the boldface and color adroitly. However, if you look carefully at the fourth line of the first paragraph, you'll see that it inserted spaces at random in full justification (Figure 4). Moreover, it lacked type sizes, and its 16 custom fonts proved taxing to learn and deploy.

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Sincerely,

WILSON DeWITT

WordPerfect did worst of all (Figure 5). The program proved unable to print in different sizes or fonts, and my ImageWriter II did not respond to the color commands the manual suggested. In addition, as it lacked the draw capacity, it could not generate the curved rectangle.

It is important to note what this test did *not* measure. It did not show footnotes or widow/orphan protect, thus depriving WordPerfect of a chance to shine. It did not recognize spelling dictionaries or telecommunications modules. It also favored software with the draw command and color, though you may rarely use these powers. Despite these caveats, however, we can clearly say one thing: The graphics-oriented programs printed out better than their feature-laden rivals.

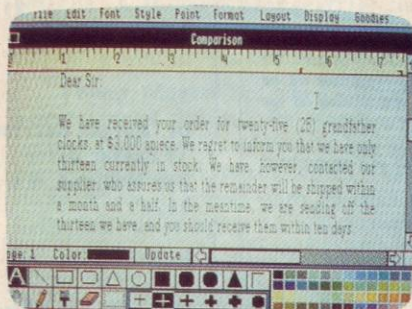
— Dan McNeill

MultiScribe

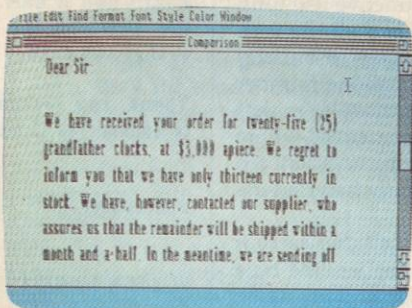
MultiScribe has always been a leader in attractive, easy-to-use word processors. The latest version for the IIGS is the most potent yet, and it's exceptionally easy to use. Among the five programs examined here, it offers the best blend of power and comfort.

Power. MultiScribe cannot compete with WordPerfect and MouseWrite for features, though it does allow you to stack up to three windows and issue Select All, Zoom, and Clear Document commands. Its main virtues are its graphics and add-ons. This program can execute draw commands, and it loads pictures created on Paintworks Plus, Deluxe Paint II, TopDraw, and most other Apple graphics software. It can also read AppleWorks files directly.

MultiScribe 3.01c comes with an 80,000-word spelling checker, which suggests alternatives both literally and phonetically. Hence, if you know a word is pronounced *neumonina*, you can type in those letters and the speller will present you with *pneumonia*. It also acts as a low-level style checker, catching doubled words and errors in punctuation and capitalization. In addition, the program boasts a thesaurus, which requires 768K.



GraphicWriter 2.0



Writer's Choice Elite

Ease of Use. MultiScribe has a raft of ingratiating aspects. First, it employs the Finder model of the Macintosh, displaying file icons which you must double-click to open. It's a pleasant way to work, as it confers greater mastery over the desktop. (If you don't like it, you can disable it.) MultiScribe also has numerous keyboard shortcuts. Though the screen window is relatively small, showing only 10½ lines in the default font, the program works cleanly and intuitively.

Ease of Learning. MultiScribe comes with an attractive manual laid out in the Apple style. The program is simple to learn.

MultiScribe GS 3.01c, StyleWare, 5250 Gulton, Suite 2E, Houston, TX 77081; (800) 233-4088; (713) 668-0743; requires IIGS, 512K (1 megabyte recommended), 3½-inch drive, mouse; not copy-protected for hard disks, but backup disks require insertion of master disk; \$99.95.

GraphicWriter

GraphicWriter is the stage performer of the group. It lets you write, paint, draw, and lay out pages. Though it still wobbles a bit, if you often mix prose and

The appeal of color is almost irresistible. Movies and photos in color feel more immediate. Lush, chromatic landscapes like those you find in Hawaii are somehow more memorable. Since prehistoric times, painters have paid attentive care to the colors on their palette.

To varying extents, the five IIGS word processors described earlier give their owners the chance to write in color. It seems a splendid power, but it is actually less useful than it might seem.

Color has several uses:

- **Tone.** It can give a certain atmosphere to your prose. Overdue bill notices, for instance, often come in fire-engine red to impress you with the need for action. Appeals for charity donations may arrive in green or blue, more soothing hues.
- **Distinctions.** Color can help you distinguish between tentative versus final prose, or new versus old.
- **Graphics.** Vivid hues can, of course, bring graphics to life.
- **Special effects.** Like the Outline and Shadow styles, color comes in handy for flyers, casual letters, and documents which need to call attention to themselves.

But color remains unimportant for most writers, for two main reasons:

- **The technology.** The ImageWriter and most other personal computer printers simply cannot match the color on the screen. Their finesse is insufficient, and their range of hues is relatively small. The output just looks unprofessional. And color laser printers, though they exist, remain very costly devices.
- **Lack of need.** Even if the technology were not a barrier, color is simply unnecessary most of the time. It can even be distracting or inappropriate, as in business reports. Prose communicates through the meanings and nuances of words. We read not for the beauty of type, but for information, for the images that words conjure up. You can print out in a galaxy of colors, but if your prose is unclear, incomplete, or dull, those pretty shades won't salvage it.

— Dan McNeill

pictures, you might consider it seriously. There is no other IIGS program like it.

Power. In many ways, *GraphicWriter* follows the route taken by *Laser Author* on the Macintosh. It works via *regions*—discreet areas you pull out on the page to fence in your prose or art. Regions alone confer power and flexibility. For instance, they make page layout a snap, instantly creating boxes for sidebars and pictures. Regions come in two types: Object and Canvas. Object regions let you either write or draw, and Canvas regions let you paint. Regions can be moved, resized, hidden, shown, and removed. They can be fixed or bottomless, white-on-black or reverse, framed or unframed. Used with the program's power to create two, three, or four columns automatically, with prose flowing from one to another, they offer sharp layout prowess. The program can also print in full color separation. It imports hi-res files from *Paintworks Plus* and most other IIGS graphics programs, and import text files.

As a word processor, *GraphicWriter* cannot approach the realm of *WordPerfect* or *MouseWrite*, but it does have

certain features of note. It allows any size type from 1 to 72 point, offers odd/even headers and footers, and has a Select All feature. It displays special characters like the trademark and infinity symbols, and its hand icon can move text.

Ease of Use. *GraphicWriter* has perhaps the most pleasing interface of any of these five word processing programs. It offers such appealing fonts as Bookman and Palatino, and its automatic columnation is a delight. Nonetheless, it sometimes nods. I eventually had trouble returning to one column after being in four columns. Because the tools and palette are arrayed across the bottom of the screen, you see only 8½ lines of the default font at any one time, a narrow prospect. And the program does not always print exactly what you see on the screen.

Ease of Learning. The manual is lean, with 62 relatively small pages, but it is clear and direct. This is a simple program to learn.

GraphicWriter 2.0, DataPak Software, 14011 Ventura Blvd., #507, Sherman Oaks, CA 91423; (818) 905-6419; requires IIGS, 512K (1 megabyte recommended), 3½-inch drive, mouse; not copy-protected; \$149.95.

Writer's Choice Elite

Among the IIGS programs, *Writer's Choice Elite* is perhaps the least powerful. It is also the least expensive, and it may therefore suit you if your needs are modest.

Power. This program performs a few distinctive tricks. It offers a cross-cut style, to indicate prose you plan to cut. It allows 16 document windows open at once. It has a Select All feature, and can save as a folder, open text files, and import graphics. It comes with unusual fonts like Hollywood, Stuttgart, and Los Angeles. It is compatible with *Draw Plus* and *Paintworks Plus*, both also from Activision, which sells all three programs in one package for \$179.00.

Writer's Choice Elite, however, completely lacks add-ons, such as spelling checkers or mail-merge. It has only four colors, plus black-and-white, and it prints text in only red and black. Its search-and-replace does not heed case, and its Shaston font cannot be underlined. These are hardly fatal flaws, but they indicate that *Writer's Choice Elite* is essentially a bread-and-butter program.

Ease of Use. This program offers a full-screen option, to increase the amount of text you can see. It also offers annoyances. It is slow, and the prose on the screen is constantly chasing your fingers on the keyboard. The screen redraws the rulers incessantly, a vexation that gets worse over time. You can't use the software with a ramdisk.

Ease of Learning. The manual is clear and the program is simple to learn. But note: Activision has a computerized support line, and to reach a real person, you must punch in a series of buttons on the phone. It takes time and can be irritating, especially if you are calling long distance.

Writer's Choice Elite, Activision, P.O. Box 7286, Mountain View, CA 94039; (415) 960-0410; requires IIGS, 512K (1.25 megabyte recommended), RGB monitor, 3½-inch drive, mouse; \$89.95

Though Apple IIGS word processors have not yet attained the perfect fusion of power and ease of use, the goal is clearly within reach. If *WordPerfect* adapts better to the IIGS, or *MouseWrite* appears in a IIGS-specific version, or *MultiScribe* adds more features, or *GraphicWriter* becomes faster and more solid, the day could be here. Even so, these programs are a definite advance over the level seen several months ago.

Dan McNeill just bought an Apple IIGS, and he's glad he did. He's currently working on a book about Macintosh graphics.

aa

Pirates!

Ervin Bobo

Just what *is* this game, anyway? Is it a text adventure with graphics, or a graphics adventure with text? Or is it a history lesson in disguise? If you asked me, I'd say all of the above.

But don't be dismayed by the program's nebulous description. The history lesson is painless, and even those who don't like text adventures should enjoy *Pirates!*

Setting Sail

At the beginning of the game, you choose whether to launch a new career or command a famous historical expedition. If you've played before, you can continue a previously saved game. When taking over a famous historical expedition, you follow in the wake of men such as Sir Francis Drake or Henry Morgan. Until you gain some hands-on *Pirates!* experience, however, it's best to save the historical option for later, as tracing the steps of such immortal privateers is not an easy task.

Starting out a new career is the way to become a proficient player. Before you embark on a new career, you select a nationality and a time period. The six time periods covered by *Pirates!* range from 1560, called the Silver Empire, to 1680, the last great era for pirates adventuring in the Caribbean. Every time period has its own set of politics—all historically accurate.

Game options are selected via a joystick-operated menu: Simply highlight the desired menu option and press the fire button. Even the text adventure aspects of the game use this interface—no need to struggle with text commands and a limited syntax. At each of the game's many branching paths, your choices are clearly indicated. With this type of point-and-click menu selection, traversing the game is both fast and easy.

Story Windows

Onscreen text windows narrate the game's events as they unfold. When more than one thought needs to be conveyed, the windows overlap—but only after you've had time to read the information. At other times, you'll see a chronology of events for a particular

year. Study them well, for between the lines may lie information that will help you plan a successful expedition.

Along with text windows, still graphic pictures share the screen. This approach adds a sense of fullness to the game. As a pirate, though, you live for animated action, vicariously conveyed through moving computer graphics. Luckily, *Pirates!* provides plenty of challenging animated scenes.

No matter what course you set for yourself, sooner or later you'll find yourself on the high seas, with your ship shown from a bird's-eye view. You control your ship using a joystick. For the most efficient sailing, you must pay close attention to the wind's direction.

Whenever you spot another ship, you have three choices: attack, ignore, or hail. Being a pirate, you'll probably want to attack. When you do, an inset window displays the type of ship with which you'll be doing battle. Then the screen alters, showing an overhead view of the ships as they maneuver into position.

... *Pirates!* offers better music
and sound than any Apple
game I've seen . . .

Your goal here is to fire broadsides at the other ship, so the position of your ship is critical. It takes time to reload your cannon, time in which the other ship will be firing back or trying to get away. Moving your ship during an attack takes practice. Just remember to *use* the wind; don't fight it.

You board other ships by sailing alongside them. The view changes to show the area of the deck where you engage in swordplay with the enemy captain. The bottom of the screen displays your name and that of your opponent, the number of men you command, and your crew's morale level.

Since the number of men diminishes as you thrust and parry, the fate of both ships rests on how well you swordfight. Your conquest or defeat determines the game's next scenario: collecting the booty or sitting in jail.

Required Sailing Gear

Pirates! requires an Apple IIc or IIe with 80-column card and 128K memory; a composite monitor; and a joystick. *Warning: Pirates! does not run on the Laser 128.*

A handsome booklet printed on what looks like parchment helps you through the action and adventure of the game. Besides the rules for play, there are sections on tactics, swordfighting,



Successful pirates enjoy their ill-gotten booty.

and the art of broadsiding. The history of piracy in the Caribbean is also included, helping you to get a better feel for the game. There are even clues on planning missions.

Pirates! comes complete with a map, showing the ports of call on the Spanish Main during the era covered by the game. Like the book, it's printed on parchment.

The game employs impressive 16-color, double-hi-res graphics and outstanding sound effects. In fact, *Pirates!* offers better music and sound than any Apple game I've seen (or should I say, heard).

Breaking into new, untapped subject matter—all within a valid historical framework—*Pirates!* provides mentally stimulating, high-seas action that should keep even the saltiest adventurer entertained for months.

Pirates!
Apple IIe (with extended 80-column card
and 128K), IIc, IIgs
MicroProse
180 Lakefront Dr.
Hunt Valley, MD 21030
\$39.95

Personal Newsletter

Duncan R. Teague

Desktop publishing is the electronic art and science of combining words with pictures on the printed page. With desktop publishing software, you can create documents more sophisticated than posters, greeting cards, and banners, and more eye-catching than plain word processor all-text documents.

Softsync's *Personal Newsletter* is a significant step in the growing trend to provide desktop publishing tools for the Apple II line. All the important aspects of desktop publishing—word processing, graphics design, and page layout—are integrated into a versatile, comprehensive package.

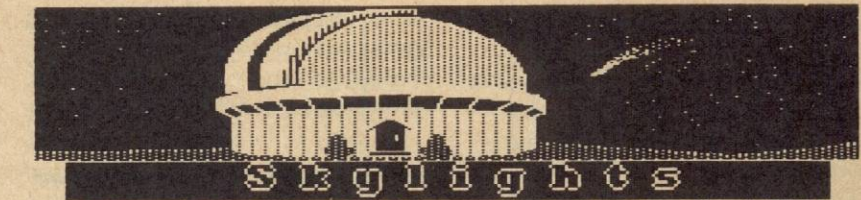
Versatile Publisher's Helper

Personal Newsletter's versatility comes from several features. One is its impressive ability to import both text (from word processors capable of saving unformatted ASCII text files) and pictures (from standard or double hi-res Apple screen files; from several popular graphics programs such as *Dazzle Draw*, *Print Shop*, and *Newsroom*; and from its own clip-art disks).

Personal Newsletter shows more flexibility in its ability to place text and graphics in any position on the page. Documents can have up to ten windows, ranging in size from smaller than a *Print Shop* graphic to as large as an entire page. Each window can have its own distinctive border from among eight different styles, and the border can be placed on any of the four edges of the window.

New windows can be added after you've started work on a document. Windows already created can be deleted, resized, moved to another position on the page, or overlapped to provide some interesting and professional-looking effects.

The third surprise *Personal Newsletter* affords is in its text options. In addition to the Apple system font, five additional fonts can be loaded from disk: ASCII, a small sans serif font; TORONTO, a



The monthly newsletter of the Craigmont Planetarium March 1988

POLAR ALIGNING THE SUPER POLARIS MOUNT TELESCOPE MOUNT

by Darrell W. Green

The Super Polaris Mount is Celestron's German Equatorial style of telescope mount. It is used with the SPC-8, and some of Celestron's reflector and refractor telescopes. Achieving accurate polar alignment is quite easy and quick. However the instructions supplied by Celestron serve little purpose other than to confuse the user. This file will attempt to explain the procedure for polar aligning the Super Polaris Mount in a manner that is easier to understand. *How to Use a Polefinder*, an article from the May 1985 issue of *Astronomy Magazine*, is an excellent reference on the Celestron Super Polaris Mount in particular and on the German equatorial mount with a polar alignment scope in general. The article was written by AstroForum Member, Paul J. Burke. Locate Polaris. Point the leg of the mount with the 'N' on it toward that star. Loosen the altitude adjustment clamp knob on the side of the mount. Now use the altitude adjusting lever on the back to adjust the scale on the opposite side of the clamping knob to your latitude. The scope should now be very roughly polar aligned.

(continued on page 2)

ST. PATRICK'S DAY SOLAR ECLIPSE

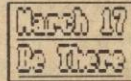
by Steve Nichols

A total eclipse of the Sun will occur on March 17, 1988. It will not be visible from the continental United States.

The path of totality is a narrow band which starts west of Malaysia, moves northeast across the Pacific Ocean, and ends just south of the Aleutian Islands off the Alaskan coast. India, China, Japan, eastern U.S.S.R., Australia, the northwestern Hawaiian Islands, and Alaska will see a partial solar eclipse.

Since we've been looking for an excuse to take a field trip next spring, an outing is planned to take the Astronomy I and II interns to Hawaii to observe this event. Deposits will be taken for this trip until March 1, 1988. Final payments must be in by March 16.

Your Astronomy instructor will pay no fee, since he will be the guest lecturer on this tour. At any time during this expedition, feel free to ask him which one is the Sun.



(For registration form, see page 2)

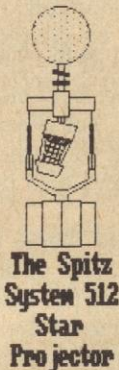
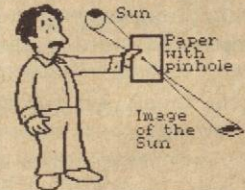
Astronomy Club Meeting

at Craigmont Planetarium, 7:00 pm March 4, 1988

The regular meeting of the Astronomy Club will be held this month at the star theatre of the Craigmont Planetarium at 7:00 pm. This month's meeting will feature a discussion of the March 17 solar eclipse. After refreshments and a short break, the constellation of the month will be presented. This month's featured constellation is Leo.

The solar eclipse lecture will focus on safe ways to observe the eclipse. In addition to using a telescope eyepiece to project an image onto a piece of cardboard, a simple technique using only a piece of paper with a pinhole will be demonstrated.

The beautiful celestial sights which can be found in the star picture of Leo, the Lion will be presented for your spring evening astronomical viewing enjoyment.



This sample newsletter illustrates several of *Personal Newsletter's* capabilities and features.

The observatory at the top is a standard Apple hi-res picture file cropped into two pieces and reassembled on the page. The title *Skylights* was created with the program's text tool and resized to twice normal height. The article "Polar alignment..." was downloaded from CompuServe, edited in the ProDOS version of PFS: Write, and imported into the newsletter as a text file. The "Solar Eclipse" article was typed in *Personal Newsletter*—carriage returns were necessary to prevent text overwriting the graphics at the right. March 17 and tropical graphics are from the *Print Shop*-compatible Beagle Bros. Minipix #1 graphics. The graphics at the bottom of the newsletter are from *The Newsroom*.

All text in this sample has the tightest kerning and leading—0 on a scale of 0-3.

bolder and larger sans serif font; NEW YORK, a more open font with serifs; BYTE, a computer-style font; and GOTHIC, a font with an Old English-style uppercase.

Only one font per document page is permitted, but the font's

style can be modified to show its italic, bold, underlined, or reversed versions. Effects are additive and can be toggled on and off.

Text can be typed flush left, centered, or left- and right-justified. The appearance of the entire

page can also be adjusted. The space from one line to the next (leading) and the space between characters (kerning) can be adjusted smaller or larger on a scale from 0 to 3.

The fourth area in which *Personal Newsletter* shines is in its use of either the keyboard or a mouse for input. The developers had the good judgment to know when each is appropriate. The keyboard alone is used for program commands and text entry. Either device may be used for cursor movement and selection of graphics tools and filenames.

Start Here

The key to any desktop publishing project is organization. It's a good idea to have a pencil sketch of the way you want your finished document to appear. This will help avoid the indecision you may face when you're confronted with so many options: How many columns should I use and what size should they be, what graphics are appropriate, and how should I lay out the finished page?

To get organized with *Personal Newsletter*, initialize six blank disks in the ProDOS format. This procedure is not an option from within the program, so it must be completed before loading the *Personal Newsletter* System disk.

The developers recommend backing up the system disk, the fonts and sample files disk, and the two-sided clip-art disk. You'll need a fifth blank disk to hold your creations.

You might as well use your Apple *ProDOS User's Disk* to accomplish this, since you'll likely need the CONVERT program too. If you want to use graphics from programs like *Print Shop* or *Newsroom*, standard or hi-res Apple screen files, or word processor text files that are in DOS 3.3 format, you'll have to convert them to ProDOS. The CONVERT utility supplied on your *User's Disk* will accomplish this task. The sixth blank disk will hold these converted files.

If you're using 3½-inch disks, you'll only need two blank disks—one to hold the clip art and another to hold everything else. There should be enough

room to place some of your documents on the clip-art disk, although you may want a separate data disk for safety's sake.

Personal Newsletter is a significant step in the trend towards powerful desktop publishing tools for the Apple II.

Of Mice and Menus

Two function keys are available: the Open Apple and Solid Apple keys (on the IIGS, the Option key is the same as the Solid Apple key). *Personal Newsletter* takes full advantage of each.

The Open Apple key, in combination with other keys, provides a number of word processor-like cursor movement shortcuts: movement by word and by paragraph, from top to bottom of the screen or document page, and from start to end of a given line. For character-by-character cursor movement, either the arrow keys or a mouse is used.

Pressing the Solid Apple key puts a list of command options across the bottom of the screen. When you select one of these options, a new list of suboptions appears.

EDIT	FILE	GRAPHICS	PREVIEW	STYLE	WINDOWS	MORE...
Cut	Clear	Draw	Range	Add	Print	
Paste	Directory	Select		Type	Change Size	Setup
Flow	Get Font			Line	Delete	Quit
	Import			Page	Move	
	Load				Edge	
	Save				Border	

Many of the suboptions listed under the headings above call up further suboptions which serve to delimit the current task.

Born to Edit

Cut, *paste*, and *flow* are terms familiar to Macintosh desktop publishers. *Cut* means to remove, but in *Personal Newsletter* it gives you the option of removing or copying. *Paste* suggests putting the removed or copied text in another place.

Flow implies that text to be placed into one window can be continued into another, if necessary.

Personal Newsletter's File options involve loading from or saving to another disk. The program knows never to save anything to a disk with the ProDOS prefix /PN, so there's no danger of accidentally overwriting the program's system disk.

The import feature lets you load a ProDOS ASCII (text only) file or a picture file. I had one problem with a *Newsroom* photo and none with *Print Shop* graphics, *Beagle MiniPix* (*Print Shop* format) graphics, or with standard Apple hi-res screen files.

When you import a screen file or a graphics file, you can select which portion of the picture you want to place on the newsletter page. An elastic window of a fixed maximum area is stretched around the selected portion of the picture. A picture too large for the maximum size of this box can be loaded in two or more sections and then reassembled on a document page.

A Dozen Ways to Draw

The Draw menu gives you a dozen options. You can create lines, ovals, rectangles, freehand sketches, and text. Text can be created in the styles mentioned above plus fat (double-width), tall (double-height), outlined, and shadowed.

It's important to have the cursor positioned where you want the

drawing to begin before you select the drawing option. After you select the drawing option, the figure begins as soon as the cursor is moved.

All of your creations can be moved and edited. An elastic box is stretched around the portion to be changed. The area inside the box can be erased, blacked out, inverted (light pixels exchanged with dark pixels), or filled with one of 30 patterns. The pattern

currently selected can also be added to any existing graphics inside the edit box instead of completely replacing everything.

Objects can be drawn with any of 25 selected brushes. Two different sizes of fat bits are available for detailed work. In this option, the cursor can be used to draw, erase, or invert pixels it touches, or it can be moved without affecting the drawing. And, as we've come to expect with any good graphics program, the most recent operation can be undone.

Once graphics are drawn or imported, they can be duplicated, deleted, edited, resized up to four times their original height, and flipped horizontally or vertically. There's no mirror image option, but a duplicate could be flipped and repositioned.

More from the Menu

Preview lets you see the whole page at once. It's not detailed enough to read, but is intended only to show the scale and relative positions of the various elements in your design.

The Range option lets you identify the first and last character of a specific portion of text to be altered. The selected range of text is shown reversed. Then the text style can be modified or lines can be reformatted into flush left, centered, or justified text. The page options for leading and kerning affect the entire page, not just a selected range.

Each window is identified by a number. The whole page is window 0. This definition allows you to type text into areas too small to define as a separate window. You switch from one window to another by typing its number.

Setup involves selecting from among nearly 50 printer models and nearly 40 printer interface cards. The program refused to save the setup information on my copy of the System disk as it should have, although pressing Escape allowed me to continue.

Printing is slow because it occurs in the printer's graphics mode. The proper linefeed count is maintained, so the page perforations return to the proper position to allow additional printouts without further paper adjustments.

Kudos and Complaints

Cursor movement with the mouse is excellent in the drawing options and when you're repositioning graphics. When moving through text or selecting file names, the movement is spastic and hard to control.

There are two dozen context-sensitive help screens available. Pressing the Tab key at any time loads the help screen specific to the part of the program you're using. Pressing Escape backs you out of any operation.

The fourth area in which Personal Newsletter shines is in its use of either the keyboard or a mouse for input.

Personal Newsletter gives you a constantly updated readout of your position on the page and on the graphics editing window. The readout is in tenths of an inch. The readout sometimes skips a tenth—the most likely suspect is a rounding problem. This makes resizing difficult in some cases.

Personal Newsletter also provides a constant update of the amount of memory available for your document. The one page newsletter I created (see the accompanying figure) took up exactly 50 percent of this memory.

The window options screen also shows a ruler along the top and left side of the page. To quote the manual, "It's a pretty small ruler so it's hard to be exact." The ruler appears to be marked in eighths of an inch, strangely incompatible with the decimal readout.

The documentation is excellent. The 192-page manual appears to have been written for the absolute beginner and, thus, gets a bit tedious after a while. It's best at the two complete tutorials, which hold your hand through the creation of two different documents, a certificate, and a newsletter.

Additional clip-art disks are available. (Thank goodness—there was nothing I could use on the one that came with the program.) For the modest sum of \$14.50,

Softsync will digitize any black-and-white photograph and send you a disk file to help you personalize your desktop publications.

It Does What It Says

I like *Personal Newsletter*. It does what it says it will do. ASCII text files from my ProDOS version of *PFS:Write* loaded with no problem. All but one of the graphics I converted to ProDOS format loaded with no difficulties. It was a bit clumsy to load a picture in two parts, but it worked.

I especially liked the ability to load new fonts; freedom from constraints on column number, shape, and size; and the leading and kerning options.

Personal Newsletter, despite a few problems, is a great improvement over any currently available Apple desktop publishing program.

Personal Newsletter
Apple IIc, IIe (enhanced), IIgsGS; 128K required
Softsync
162 Madison Ave.
New York, NY 10016
\$59.95

The Number Show

123456789

The **Number Show** was created for preschool and kindergarten children. The program uses scenes and exercises to introduce numbers 1-9, helping children to develop counting, numeral reading and keyboard skills. The program is divided into four parts:

Twinkle, Twinkle shows a scene with little children and a dog sitting around a campfire. As each star comes out, a large number in the right hand corner of the screen counts the stars as music plays.

Tennis Anyone? shows a little dog by a tennis court. As the ball bounces back and forth the number on the screen changes.

Splash! shows two small children and a pond. The number changes as a child jumps into the water with a splash.

Show Time contains several scenes. In one of them a boy's face reacts with wonder as blinking fireflies pass by and a number counts.

Each part of the program is followed by exercises to teach number skills and to reinforce learning. The **Number Show** was created by Joanne Ashdown, a school psychologist who is also a talented artist and programmer. The **Number Show** is currently available for Apple II series computers (128K memory required).

\$19.95!

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LaGrange, IL 60525
(312) 352-7323



List Plus

Carol S. Holzberg

For simple database needs, there's always the old favorite—*Appleworks*. It's a proven and reliable program, without which the Apple II family would not be where it is today. Unfortunately, *Appleworks* has not been upgraded to take advantage of the new IIGS technology. However, there's a new ProDOS 16 database application from Activision called *List Plus* that's powerful, full-featured, and designed with the IIGS in mind.

The Up Side

List Plus is simple to learn and offers lots of exciting possibilities. Like many of the other new generation IIGS software, *List Plus* comes with pull-down menus, windows, icons, and dialog boxes. You input commands by pointing and clicking with the mouse as well as by typing on the keyboard. You can use it stand-alone or boot it from the Finder or Desktop. Since it's unprotected, IIGS owners with hard disks will be able to transfer it with no problems. If you have *Appleworks* (AW) files, you're also in luck—*List Plus* reads and converts AW database files to *List Plus* format automatically.

A well-written tutorial provides a guided tour of the product. As you work your way through the tutorial, you experiment with the program, becoming familiar with its features.

List Plus offers a wide range of database management options. It displays data in four different formats: alphanumeric, alphabetic, numeric, and digital. There is also an option to format your numbers as integers or with fixed decimal places.

Other features included with *List Plus* make it possible to copy, cut, and paste information from columns, rows, and cells, as well as insert, duplicate, or delete records. An export/import feature enables you to transfer information from one file to another. A shift option lets you transfer data from one cell to an adjacent one.

There are calculation functions designed to help you work with column information. You can count the number of items in a column regardless of the data it contains. For those columns that have numerical data or money as their data display attribute, it's possible to calculate the total, average, maximum, or minimum values. If you wish to work on numerical data in a row, you can create formulas that allow you to add, subtract, multiply, and divide the values. All of the program's functions let you manipulate your lists to create and print custom reports.

List Plus includes eight templates



List Plus takes full advantage of the IIGS, using mouse control, windows, and pull-down menus.

(predesigned forms): *Addresses* keeps track of names, addresses, and phone numbers; *Class.Roster* organizes information about your students; *Customers* records customer and sales data; *Grades* keeps a file of student test scores; *Home.Inventory* maintains an up-to-date list of personal valuables; *Inventory* helps businesses document inventory costs, quantities, and supplier information; *Member.List* organizes membership lists; and *Numbers* keeps track of important serial numbers, credit cards, policy numbers, and so on. Each of these templates comes ready to print. Some offer a choice of printing in index card format, with or without headers and footers, while others are set up to print mailing labels.

The Down Side

Despite its many features, *List Plus* is not perfect. One minor irritation is its memory requirements: *List Plus* requires 768K to run. If you boot it from the Apple IIGS Finder, the program has even less room for records, as the computer must contain both the program and the Finder shell. So Activision recommends a IIGS with one megabyte of RAM, just to be on the safe side.

In its present version (12/11/87), *List Plus* prints only on an Imagewriter (I or II) or a LaserWriter. Those without a compatible printer must be content with a simple screen display of the database. If you need a hard copy, you could save your file in ASCII format and port it over to a program that reads

and prints ASCII text files. *Appleworks*, for example, has this ability.

Not all *List Plus* features have practical significance. For example, the program has no disk formatting option. If you wish to save your lists to disk, you must have a ProDOS-formatted disk on hand and not a blank (uninitialized) disk as specified on page 3 of the reference manual. If you don't have a formatted ProDOS data disk, whatever data is in memory will be wiped out when you exit the program. In addition, *List Plus* does not have a delete file option. This means that once a data file is saved to disk, you must exit the program to delete the file.

The Envelope, Please

If you're in the market for a IIGS database program, *List Plus* should more than meet your needs. Minor irritations aside, it's flexible, dependable, and multifeatured. With it, you can organize, analyze, and print custom reports and mailing labels. And even more important, it's designed to take advantage of the speed, memory capabilities, and custom mouse input of your Apple IIGS.

List Plus

Apple IIGS with 768K and the new Version 01 ROM installed, 3½-inch disk drive and printer (Imagewriter, Imagewriter II, or LaserWriter)
Activision
2350 Bayshore Pkwy.
P.O. Box 7286
Mountain View, CA 94039
\$99.95

California Games

David Hensley, Jr.

Oh no, not another sequel. That may be your reaction when you see the title of this game. Yes, *California Games* is another addition to Epyx's games series—*Summer Games*, *Winter Games*, *World Games*, and *Summer Games II*—but it's a worthy one that improves upon Epyx's previous releases.

Following the successful format of its predecessors, *California Games* brings you six California-style sports/past-times: surfing, skateboarding, foot-bagging (Hacky Sack), BMX bike racing, flying disc (Frisbee), and roller skating.

When you run the program, you can choose to compete in one, a few, or all of the events. Although you'll probably want to try them all when you first take the game home, I've found that it's best to concentrate on one event at a time. This way, you can work on the radical stunts that you need to perform to achieve higher scores.

In Epyx's previous releases, you represented a country by displaying its flag. In *California Games*, you compete on behalf of sponsors such as Ocean Pacific, Santa Cruz, and Maxx Out. If you're fortunate enough to win an event, your sponsor presents you with a nice trophy to commemorate the victory.

Let the Games Begin

Half-pipe skateboarding is the first challenge that you face when competing in all the events. Here you find yourself atop a large U-shaped pipe, commonly referred to as the *half pipe*. The object is to ride back and forth performing stunts that require exact timing and skill.

As in the real sport, you attempt difficult maneuvers such as aerial turns, hand plants, and kick turns. Your ride ends after three falls, or after one minute and fifteen seconds, whichever comes first. Although difficult to perform, the action-packed graphics make skateboarding one of *California Games'* best events to watch.

In foot bagging, you use your head, knees, and feet to juggle a small round bag. The object is to keep the bag in the air without using your hands. Your success in this event is judged on the number of difficult kicks you perform in the allotted time. A bonus is awarded for the variety of moves used during competition. This event is probably the simplest and one of the most enjoyable.

Surfing is a tough sport to master. The same is true of *California Games'* surfing event. Using the joystick, you control the surfer throughout his ride. Scoring is based on the length of the ride, the number of turns you make,

and the speed of those turns. Bonus points are awarded for spectacular feats like *shooting the curl* and *riding the tube*. Control is the key to longer surfing rides, but high scores are hard to achieve without taking risks. Even experienced players wipe out occasionally. After four mishaps, the ride ends and the results are tabulated.

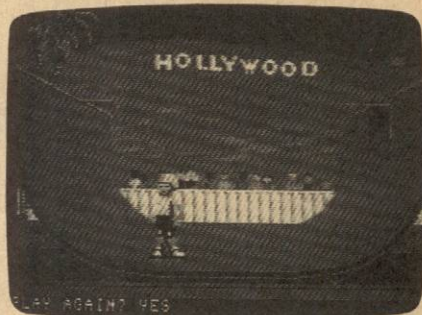
You'd think roller skating would be relaxing after competing in the fast-paced surfing event. And it would be, if the boardwalk were clear of hazards. The object of the roller skating event is simple: Skate down a beach boardwalk without falling. Along the way you must react quickly to avoid the sidewalk cracks, sand, grass, puddles, and other miscellaneous hazards. To make this easier (or maybe harder) you can jump. Points are awarded for each object successfully avoided. Practice is the key to enjoying the view while skating. Without it, you'll spend your time picking yourself up off the sidewalk.

Joystick movements are no longer difficult or hazardous to your health, and each event remains a constant challenge.

The next event, BMX bike racing, presents a tough challenge. Racing against the clock, you ride a bike through a rugged desert course performing stunts while earning points. The main point in bike racing is to finish the course. I've never seen its end. The backward and forward flips and the 360-degree turns have kept me from advancing more than a few hundred yards. After one serious accident or three minor falls, you're out of the race. The BMX event leaves something to be desired. The side view of the bike and the graphics of the desert course seem to lack the depth and perspective offered by other events.

The last event is the flying disc. This is probably the most laid-back event in *California Games*. It also happens to be my favorite. The goal is simple. Try to accurately throw the Frisbee to the catcher at the other end of a field. With the help of an on-screen gauge, you control the forward and backward motion of the thrower's arm, as well as the release.

After your throw is airborne, you must prepare to catch it. A display at the top of the screen helps you position the catcher. Points are awarded for both the throw and the catch. Bonus points



Do you have what it takes to ride the half pipe on a skateboard?

are given for diving and jumping catches. To obtain the best score, try to throw as close as possible to the catcher, and then attempt a diving catch.

Is It Real or Is It California?

Detail and realism are the strong points of *California Games*. All of the events depicted here must have been an immense programming challenge—every event stacks up well against its real-life counterpart.

As with earlier Epyx games, every part of the program has been carefully planned. Joystick movements are no longer difficult or hazardous to your health, and each event remains a constant challenge. In fact, *California Games* is the most enjoyable of the Games series. It's hard to imagine Epyx topping this one.

Epyx
Apple IIe, IIc, IIgs Requires 128K;
joystick optional
600 Galveston Dr.
Redwood City, CA 94063
\$39.95

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AST-VisionPlus and ComputerEyes

Two IIGS Video Digitizers

Bruce E. Howell, DDS

What better way to is there to take advantage of your IIGS's graphics capabilities than to add a video digitizer? Two products—the AST-VisionPlus and ComputerEyes color digitizers—are now available for the Apple IIGS. Both turn your computer into a video magician, both depend on a hardware card and sophisticated software, and both require that you supply the video camera. Each digitizer, however, has its own strengths and weaknesses.

*With 16 shades of gray,
dazzling, near-photographic
images are achieved with
minimal effort.*

Using ComputerEyes

Judging by the simple appearance of ComputerEyes' small plug-in card, I was surprised that it digitized so well and so easily. The accompanying software uses *AppleWorks*-style menus, with each major option opening up a related submenu. Menus can be operated with the keyboard or with a mouse.

When you digitize an image with ComputerEyes—using either the 6-second or 12-second scan option—you cannot see the image until *after* the scan



Sample printout from AST-VisionPlus.



Sample printout from ComputerEyes.

(digitization process) is finished. To view what the camera is focused on before digitization, the program sends the camera's video output directly to your computer's composite monitor. Unfortunately, this preview option does not work with RGB monitors.

After digitizing an image, you can change the picture's brightness, contrast, and color levels using sliders that appear on a separate screen. But because the sliders are kept separate from the digitized image, you're forced to continually swap screens, making sure that the adjustments you make are those that you intend.

AST-VisionPlus displays the image as it is digitized—a scanning line passes quickly down the screen, leaving a new, updated image. When you see an image you like, you press the space bar to freeze the frame. Best of all, to adjust the brightness, contrast, and color levels, you simply drag the mouse *while* the digitized image is on the screen.

Sixteen Colors

Both digitizers are limited to only 16 colors. This is a limitation, as 16 colors are hardly enough to accurately represent real-world images. But with a little patience and experimentation, you can achieve some satisfactory results.

To determine which colors to use, both programs analyze pictures for the 16 most prevalent hues. Once you've captured an image, you can change the color values using ComputerEyes' off-screen sliders or AST-VisionPlus's mouse-dragging feature.

Using AST-VisionPlus

The AST-VisionPlus card is larger and holds more components than the ComputerEyes card. And its accompanying software is a true ProDOS 16 application, complete with Macintosh-like pull-down menus.

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AST-VisionPlus provides a dithering technique which combines red, green, and blue pixels to form three-pixel-sized colored dots. Picture resolution is reduced, but it's claimed that the human eye can interpret up to 125 different colors in this mode. To optimize the picture, you must adjust the brightness, the contrast, and the color three different times using internal red, green, and blue filters.

With AST-VisionPlus, I could never achieve the same high-quality picture as the one that's shown in the manual. I'm sure it can be done, but only after a great deal of contrast, brightness, and color adjustments. The lighting seemed to be a critical factor as well.

ComputerEyes color digitizations are both better looking and easier to generate: You simply select color mode and sit still for 6 or 12 seconds. The major disadvantage is that you can't see what's being digitized until it's already done.

Viewing the World in Black and White

Black-and-white mode is where both of these digitizers excel. With 16 shades of gray, dazzling, near-photographic images are achieved with minimal effort. And with the popularity of desktop publishing, such black-and-white images are perfect for pasting into flyers, newsletters, and computerized greeting cards.

AST-VisionPlus produces the best picture in black-and-white mode and is by far the easiest to use.

Once you digitize something, you'll probably want to print it. Although the IIGS can display 16 true shades of gray, the print head of a dot-matrix printer can either strike or not strike the ribbon, producing either a black or a white dot. Through software, however, grays are simulated by altering the density of these dots. While this technique produces good results, it's nowhere near the photographic quality seen onscreen.

Special Effects

No digitizer is complete without some special effects and graphics tools. ComputerEyes can convert pictures to any of the graphics modes available on the IIGS. You can even limit the number of colors to fewer than 16, if you like. This can be useful when you're planning to include the digitized image within a drawing or game that requires its own, additional colors.

ComputerEyes' options include high contrast, mirroring, inverting, shrink, expand, and scrolling with or without wraparound. All of these options, however, require that the section of the picture being modified be moved to the upper left corner of the screen. To use



Here, several Apple software packages have been digitized using AST-VisionPlus's black-and-white mode.

the expand option, for example, you must use the scroll with wraparound function to move the desired area into the upper left corner. Then you type in the percentage of enlargement.

With AST-VisionPlus, you simply use the mouse to outline the area of the screen that you wish to expand. Changing the size, aspect ratio, and color palette is just as easy—everything is mouse selectable. Even the file-handling routines allow you to click on directories and filenames, only requiring you to use the keyboard when you're entering new filenames.

Once you've captured an image, you can change the color values using ComputerEyes' offscreen sliders or AST-VisionPlus's mouse-dragging feature.

Don't Adjust Your Set

Although it's easier to use, AST-VisionPlus has a few quirks. If you lose your video signal, the program crashes. If you use a camera with an automatic shut-off feature, like mine, it can become quite annoying. The program informs you when it loses the sync signal and tells you to reboot. But if you turn the signal back on, the system crashes. ComputerEyes, on the other hand, allows you to reestablish your video signal and proceed.

A major concern with AST-VisionPlus is its incompatibility with certain IIGS memory cards (the program requires at least 512K of additional RAM). After several calls to AST Research, I was told that the digitizer does not work with my GS-RAM card and that it's best to use a memory card made by Apple. Unfortunately, this information is not included AST Research's



ComputerEyes' 6-second, black-and-white scan option captured this image.

advertisements or in the AST-VisionPlus manual. My recommendation is that if you don't own a memory card that's made by Apple, don't plan on AST-VisionPlus working on your computer.

The Big Picture

ComputerEyes provides the best and the easiest to generate color image, while AST-VisionPlus excels in black-and-white mode with 16 levels of gray. Overall, however, both products perform well, and both provide a powerful tool for your Apple IIGS computer.

AST-VisionPlus
Apple IIGS. Requires 512K, a video camera or VCR.
AST Research
2121 Alton Ave.
Irvine, CA 92714
\$399.00

ComputerEyes
Apple IIGS. Requires 512K, a video camera or VCR.
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