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Apple II / Macintosh
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June 1991

EDITORS' CHOICE P. 80

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# FRIENDS OR FOES?
# APPLE IIGS AND MAC LC

## 46 SHAREWARE HITS FOR THE APPLE IIe, IIGS, AND MAC

REVIEWS

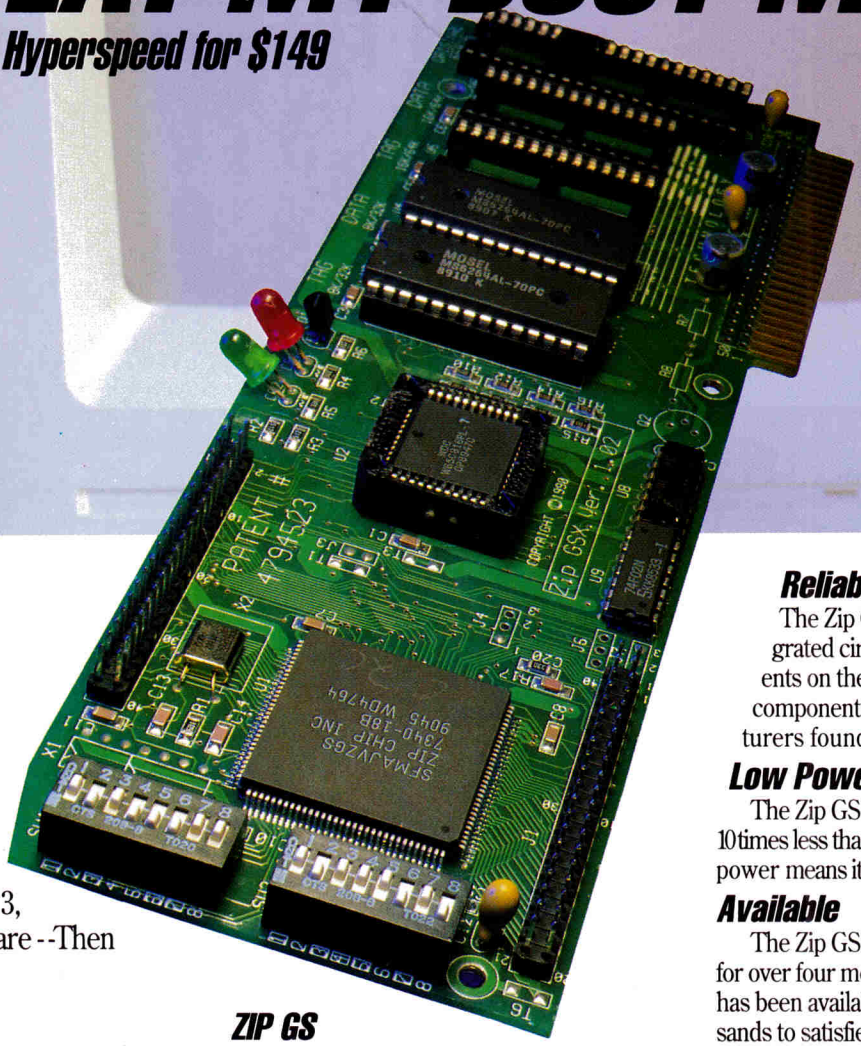
- ZipGS
- Mercury
- GeoQuiz
- Inside Information

0 74470 12066 06

# EAT MY DUST Mac...

## Hyperspeed for $149

## GS+ Magazine




### If You Use...

- Appleworks GS
- Managing your Money
- Printshop GS
- HyperCardGS
- Springboard Publisher
- DeluxePaint
- Quicken • Publish it 3,

or any other GS software --Then you need a Zip GS.

### Here's Why...

To use powerful programs you need a powerful computer. Apple Computer left one thing out of the IIGS when they designed it...speed. The Zip GS puts the speed back in. The Zip GS comes standard with 8 K cache memory and runs at a very speedy 7 Mhz. The Zip GS gives you all the speed you need now and in the future because it's expandable. You will never have to buy another accelerator card again. All upgrades are available now.

Can you imagine the time you will save having your GS running up to 10 Megahertz faster. Appleworks performs like you always thought it should, recalculations in the blink of an eye. Word processing faster than on the new line of Macintosh computers. Nibble magazine said it this way "Apple Computer take note: this chip makes a full featured GS word processor faster than several Macintosh word processors running on a monochrome display." (monochrome display is the fastest) Hallelujah! **ZIP GS DELIVERS!**

### ZIP GS

- Is very easy to operate.
- Needs no special boot-up. • Provides Macintosh speeds for your GS • Is compatible with all GS hardware and software. • Uses 1/10 the power of competing boards. • Address all memory. • Upgradable to 64 K cache memory. • 16 variable speeds at the touch of a key. • 30 day money back guarantee and a 1 year warranty. • Upgradable to 10 megahertz. • Fully DMA compatible.

### Installation

Anyone can install the Zip GS in a matter of minutes. To help with the installation, we include an animated pictorial instruction manual which gives detailed instructions on installation and operation.

### Upgradable

The Zip GS can be upgraded at any time. Zip Technology has available upgrade kits that boost the speed to 10Mhz.! We will be happy to do the upgrade labor for free within 48 hours.

### Reliable

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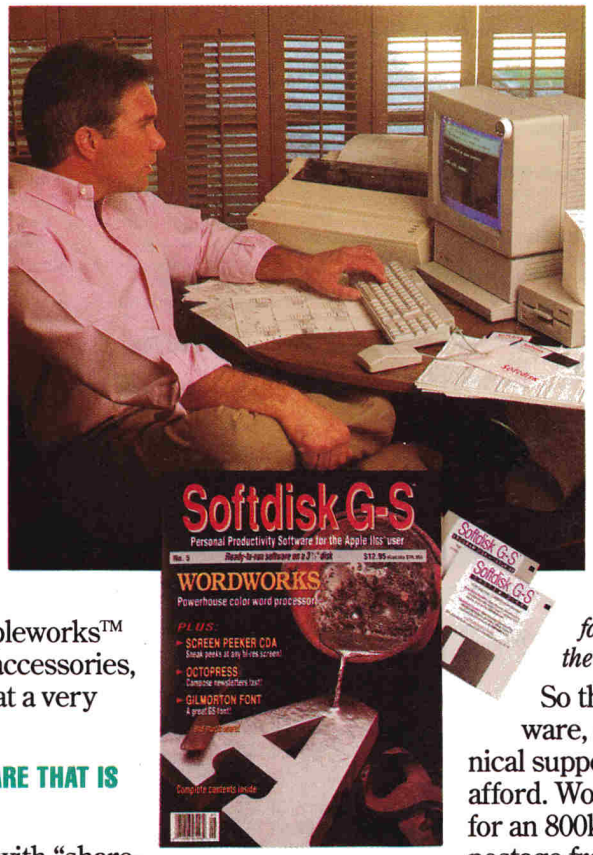


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### CONTENTS OF SOFTDISK G-S #13

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**PS VIEWER-IMAGES** — This month's Print Shop Graphics features school images and some cool aliens.

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**FRESHSCRIPT FONT** — A great GS font in four point sizes for use with all GS word processing applications, including WordWorks™ and AppleWorks GS™!

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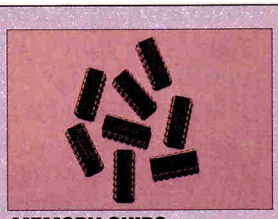

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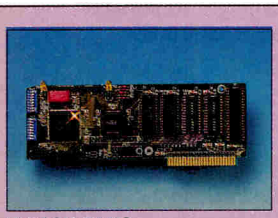

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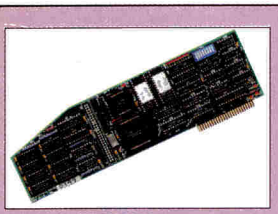

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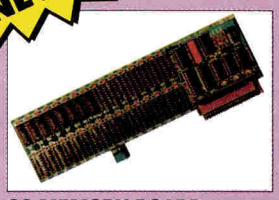

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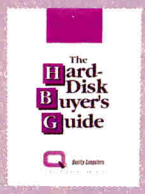


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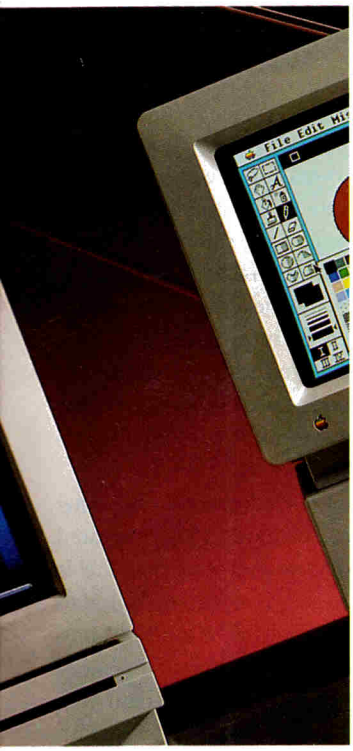

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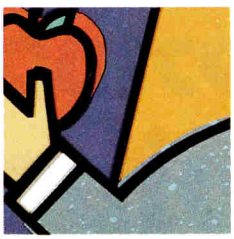

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INCIDER'S VIEW

# BEST INTENTIONS?

By DAN MUSE * EDITOR IN CHIEF

**Thanks to its new Education Sales Consultant policy, Apple has once again ruffled a few feathers.**

AT BEST, IT'S A RISKY MOVE. AT WORST, it could alienate hundreds of school administrators across the country. We're talking about the new Apple Education Sales Consultant (AESC) program. In short, Apple has cut back on the number of authorized education representatives, but by selecting the best of the lot, service and support theoretically should be better.

Regardless of what the end result is, right now educators, at least the ones who have contacted us, say they feel confused and abandoned. Given that educators have doubted Apple because of its lack of commitment to the II line, an uproar is the last thing the company needs.

Thanks to the new AESC policy, Apple has once again ruffled a few feathers. Educators and school administrators are upset over two issues.

The first is that by substantially cutting back the number of dealers in each region, educators in rural settings may have to travel great distances to visit their AESCs. As one educator in Indiana wrote, "This week several of my colleagues learned that Apple Computer canceled all its 'educational contracts' with local dealers. They told me that there would be two dealers handling educational accounts in the entire state of Indiana. This is the dumbest move we've ever seen. At a time when IBM is reaching out . . . Apple is disappearing into oblivion . . . ." Libby Preble, Apple's manager of education-channel sales, says that Apple is aware of the potential inconvenience and is "working closely with AESCs to develop creative solutions for rural customers."

The second concern is that the new program assigns schools an AESC. Educators and administrators say they're no longer free to buy where they get the best deal. Mel Chafetz, principal of the A. Ward Spaulding Elementary School in West Suffield, Connecticut, was one of the first educators to call us regarding the new policy. He told us that he spoke for many other school administrators when he said, "Educators feel that their options have been taken away from them. They want to be free to buy from dealers who give them the best prices and the best support."

Preble argues that the price issue isn't relevant because all educators pay the same price based on Apple's education price list. She adds that by selecting the dealers it believes are best able to supply support, Apple is providing a more "dedicated resource for education customers."

Curious types that we are, we wonder what the real story is. As with most stories, this one has two sides.

Apple says that changes in educational computing — greater focus on networking and integrated curricula — call for a higher level of support. Preble says that the AESC policy is a "more dedicated arrangement" — that AESCs will be more accountable and also able to invest more time and resources.

For a different perspective, we talked to a dealer on the East Coast who asked to remain anonymous. He said he believes Apple divided the country into regions, and that the dollar amount of Apple sales dictated the number of AESCs each region was allowed. "Apple seems to be operating under the premise that its products will sell themselves," he says. "It's a big mistake, though. Some schools are buying IBMs; others have decided to simply not buy at all."

Under the AESC program, dealers can sell other systems on the retail level, but sales to schools must be only Apple. Our dealer, however, says he believes he was actually penalized for being Apple-only. He says Apple used regional exclusivity as leverage to persuade nonexclusive dealers to turn Apple: "They were wooed with the carrot of an AESC contract if they dropped IBM."

Only Apple knows the motive behind the AESC program; it's easy for anyone to see, however, that the immediate impact on the educational community is decidedly negative. In the long run, the new program may be beneficial. If we listen to Apple, the program is intended to provide educators with better service and support. If we listen to educators, we wonder how Apple will survive its "good intentions." ❑

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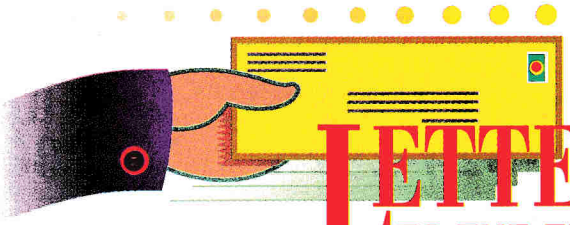

# LETTERS TO THE EDITOR

## AE True Confessions

I WONDER IF ANYONE ELSE IS MAD at Applied Engineering's effort to have each department show a profit. Their new tech-support 900 number is like a finger in the eye to those of us who have purchased so many of the company's peripherals.

I have a IIGS with several AE peripherals, including a RamKeeper. Two weeks ago, I purchased a TransWarp GS accelerator and an AE high-density drive. The TransWarp locked up my system when I moved files from one volume to another, so I paid for the first two long-distance calls to the company's technical-support staff. I tried several suggestions, including a chip update on the RamKeeper, but to no avail. On my next call, a sales-department representative informed me that it would cost me $1.50 per minute to get a problem solved that should be covered by my warranty! AE has always provided quality products and top-notch service. A 900 number? Give us a break.

**Everett Brazelton**
**Oroville, CA**

APPLIED ENGINEERING HAS DONE the unspeakable by abandoning its free tech-support line in favor of a 900 number. It may seem outrageous to charge $1.50 per minute, but AE is deluged with hundreds of calls a week, making it nearly impossible to get through. I called twice this week concerning trouble I was having with my Vulcan hard drive, and the staff solved my problem over the phone. With both calls I got through on the first try — no busy signal, no long periods of being on hold, just quick, knowledgeable help. I'm glad Applied Engineering made the changes in its tech-support department.

**William Heckel**
**Little Falls, NY**

## AE Responds

AS THE MAJOR APPLE II VENDORS leave the market, Applied Engineering is being challenged with providing support to loyal Apple II customers who have nowhere else to turn. Even though these consumers purchase our competitors' products, they contact AE Technical Support for consultation.

Over the past couple of years, the company has continued to expand the Apple II Technical Support organization and it still hasn't been able to handle the increased volume of calls. This situation has occurred at a time when costs are increasing and Apple II revenues are diminishing, putting a financial strain on the company. Also, providing support to customers who'd rather call than read their manuals or who aren't even asking about an AE product ties up our phone lines so that customers and dealers with legitimate technical issues can't get through.

For 11 years, AE has designed, developed, manufactured, and marketed over 100 products for the Apple II. We continue to support the Apple II market and are committed to its success. This plan, however, would soon become impossible if we didn't offset the tremendous support costs, while providing a vehicle for customers who truly have AE technical issues to reach our support staff.

After several months of research, we decided to follow a growing industry trend and implement a 900 number. Some of the major companies that have implemented a 900 program include Microsoft, Lotus, Compaq, and Softwarehouse. Additionally, the big three distributors in the reseller channel, Ingram Micro, Merisel, and Tech Data, have initiated fee-based technical-support programs. AE's goal isn't to make the Apple II Technical Support department a profit center, but to help offset some of the financial burden and let us continue providing support to the Apple II market. The $1.50-per-minute charge is one of the lowest in the industry and includes the customer's long-distance charges.

Although 96 percent of continental U.S. telephone exchanges can access a 900 service, a number of schools and businesses are restricted from these numbers; the company is investigating methods to accommodate these customers. AE is continually refining the new support program, and makes every effort to phone or write to customers who contact our organization regarding AE's support.

We also recommend these alternatives to fee-based support:

- Customers may contact the authorized AE dealer from whom they purchased their products. Approximately 90 percent of AE revenues are generated by our dealers and we encourage customers to use this channel. Fortunately, the majority of these dealers don't ignore this technical responsibility.
- Customers with modems can call AE's bulletin-board system at (214) 241-6677. This service is available 24 hours a day, seven days a week, and is designed as a user-to-user support forum. The only costs are applicable long-distance charges.

I recognize that many people who received free technical consultation over the years will question fee-related services. AE sincerely believes that it's doing the right thing to stay financially viable, thus allowing the Apple II market to continue through the 1990s. I'm soliciting relevant input, ideas, and opinions, and welcome all related correspondence from you.

**Robert J. Carroll, President and CEO**
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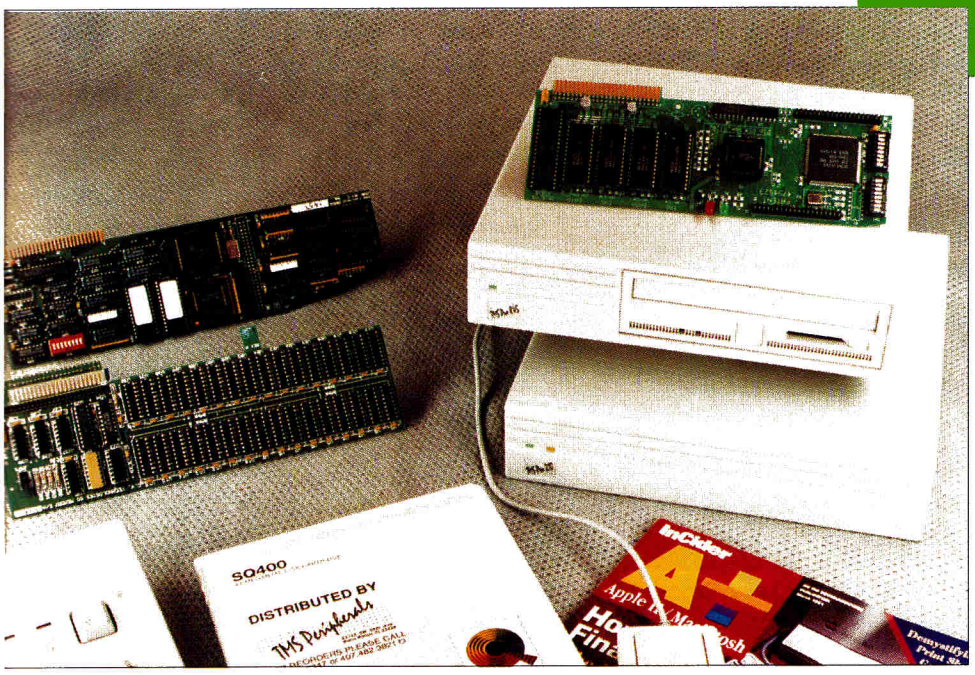
TMS Peripherals offers a complete line of SCSI hard drives for Apple and Macintosh computers, from 40MB's to 210MB's, at incredible savings. But we're not just about great prices, we're about excellent service too! Each TMS drive is completely tested and verified by our technicians before it is shipped. Nevertheless, should you experience a problem with your drive (within the first 30 days) TMS will ship you a replacement and pick up your drive—at no cost to you, leaving you with virtually no down time! Each drive also carries a TMS Peripherals 2 Year Warranty. In the unlikely event that you experience problems, just call our Toll-Free Tech Support Line. If your problem persists after thorough troubleshooting by our technical staff—just ship us the suspect drive and we will send you a replacement unit within 48 hours!

Standard features include an International Auto-Switching Power Supply, Selectable Pushbutton SCSI ID Switch, 2 SCSI Ports (allowing Daisy Chaining), Shielded Power Supply, 2 A/C Outlets, VCA Mechanism, and all necessary hardware. Each drive comes preformatted, for either Apple or Macintosh computers, with the latest System Software! Of course, each drive also comes with TMS Toll-Free Tech Support and our enthusiam for each of our products!

For your convenience, we're open 8 am–10 pm (EDT) 7 days a week. All products ship Federal Express. Visa, Master Card, American Express, Optima, C.O.D.'s and P.O.'s accepted. **All prices subject to change.*

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*"If you need a hard drive, I highly recommend that you buy it from TMS. I was impressed with TMS's products and service...they truly deserve your business."*
—Steven W. Disbrow, GS+ Magazine

**Circle 56 on Reader Service Card.**

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| AE 3.5" HD | $235 |
| AE DataLink 2400 Internal | $155 |
| AE DataLink 2400 External | $155 |
| AE DataLink 2400 w/MNPS | $185 |
| AE ReadyLink | $57 |
| AE Conserver | $77 |
| AE Power Supply GS | $78 |

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# WHAT'S NEW

## FIRST LOOK
## The IIe Emulation Card for the Macintosh LC

You've heard about it, you've waited for it — well, we've seen it. We sent one of our agents on a commando raid and he came back from California with a card, a cable fused with solder, and a manual of unbound pages. We threw the card into an LC, fired up the machine, and double-clicked on an application labeled *IIe Emulation*. A few seconds later we were staring at the screen of our new IIe.

You can configure the card through a Control Panel that's similar to the Macintosh version. The card offers seven slots and lets you set it up easily to handle a modem or a printer. As expected, the port uses a cable that splits into a "Y" to accommodate a joystick and a disk-drive daisychain.

But wait, there's more! We wanted performance, and Apple's engineers gave it to us. We matched the card up against a stock IIGS at 2.8 megahertz, ran some spreadsheet recalculations, and came out with a dead tie. The verdict? Text in IIe emulation mode looks a little odd on the Mac's bit-mapped screen, but the LC/card combo looks like a viable alternative for someone who wants the best of both worlds. If Apple follows through on the noises it's making about a IIGS emulation board, we could soon see Task Force running alongside Microsoft Word.

For details contact Apple Computer at 20525 Mariani Ave., Cupertino, CA 95014, (800) 776-2333, or circle 352 on the Reader Service card. — **C.C.**

# APPLE'S LOW-COST PRINTERS

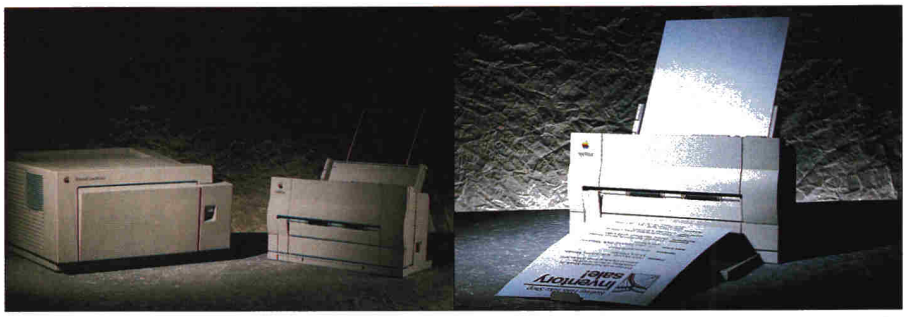
**Mac owners calling for an affordable printer — but one that's better than Apple's dot-matrix ImageWriter — have gotten what they wished for. In fact, they've gotten double what they wished for in the Apple StyleWriter (suggested retail price $599) and the Apple Personal LaserWriter LS ($1299).**

The StyleWriter, which is only $4 more than the ImageWriter II, is a thermal ink-jet printer of the type popularized by Hewlett-Packard's DeskWriter. It prints high-quality images — 360 dots per inch — on plain paper. It isn't fast, printing about a half a page every minute, but it's incredibly small — only about half the size of a Mac LC monitor — and it's quiet. It's ideal for crowded places such as dorm rooms and dining-room tables. The StyleWriter, like the LaserWriter LS, also takes advantage of Apple's new TrueType font software. (See the story titled "What's TrueType?" on p. 15.)

The Personal LaserWriter LS is Apple's most affordable laser printer, and works with any Mac, but it'll probably see more action in small offices than dining rooms and colleges. It prints four pages a minute and uses a print-buffering system that employs QuickDraw, the built-in graphics language for every Macintosh. The condensed version of the story is that the print command in any Mac program takes a snapshot of what you want to print and communicates it over a serial cable to a custom chip on the LaserWriter. Once that's done, the control of the Mac returns to you, and the printer does its business: printing.

The biggest advantage of the StyleWriter and the LaserWriter LS is that they plug into the printer port on any Mac and start printing. This kind of easy setup hasn't been available from Apple since the company began putting its laser printers on networks. More than one computer can't share *these* two printers, though; they're not "network-able." But everything, even the printer cable, is included when you buy either printer.

The old saw is: Watch what you wish for — you might get it. Apple's customers asked for inexpensive printers and got them. They aren't fast, and they can't work on networks, but that's not what the customer wanted. But the dreams of Apple IIGS owners — inexpensive laser-quality printers that plug directly into the Apple IIGS — remain unfulfilled. The custom circuitry on the Personal LaserWriter LS won't work with any computer but a Mac, and Apple hasn't released or encouraged development of Apple IIGS GS/OS printer drivers for the StyleWriter. Apple II and IIGS users can choose either the ImageWriter II ($595) or the Personal LaserWriter NT ($2599), which both work on networks. For details, contact Apple Computer at 20525 Mariani Ave., Cupertino, CA 95014, (800) 776-2333, or circle 351 on the Reader Service card. — **P.S.**



**Apple's Personal LaserWriter LS and StyleWriter — what you've been waiting for?**

## NEW SOFTWARE

◆ ■

### Dilemma II

Dilemma II is a new version of Educational Activities' Apple II reading-comprehension and vocabulary-development software that targets teenagers and adults who are at risk of dropping out of school. Because Dilemma II is for junior and senior high-school students and people in equivalency programs, the software helps teach reading skills by incorporating simple language into stories for adults — no more "Dick and Jane" books for these folks.

Dilemma II supplies a number of different endings to encourage students to reread each story. Not only do multiple readings improve students' skills, but they force them to consider the consequences of different actions.

Dilemma II includes 16 stories, dictionaries, comprehension quizzes, and vocabulary questions. Disks are available for four reading levels; each costs $49.95, but the complete set is only $159. Contact Educational Activities at 1937 Grand Avenue, Baldwin, NY 11510, (516) 223-4666, or circle 354 on the Reader Service card.

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### Number Squares

Phil Shapiro's Number Squares (distributed by Balloon Software) has been quietly charming teachers and students all over the country since its introduction last year. If you thought of Number Squares as a computerized version of one of those hand-held plastic puzzles that challenge you to move the tiles around until the numbers are in order, you wouldn't be wrong, but you'd be selling the program short.

Number Squares offers 15 different puzzles, ranging in size from three-by-three squares to five-by-five. You play against the clock, so there's the thrill of competition without the embarrassment of losing. You can attack the puzzles without plan or pattern, but most people eventually adopt a logical strategy of some sort — which is where this addictive little game becomes educational.

Balloons Software — "a tradition since August 1990" — is committed to all Apple IIs, so Number Squares runs on everything from the Apple II Plus to the IIGS. It costs $25. For more information contact the company at 5201 Chevy Chase Parkway NW, Washington, DC 20015-1747, (202) 244-2223, or circle 356 on the Reader Service card.

▲

### Desert Storm: The First Draft of History

Time magazine's first CD-ROM product — one for a Mac and CD-ROM player — is a week-by-week look at what really happened in Operation Desert Storm. It uses an extraordinary collection of stories from the pages of Time, original and unpublished dispatches from Time's correspondents around the world, audio recordings of pool reports and press briefings, and hundreds of maps and photographs. You have, at the command of a mouse click, all the materials that Time's editors had when they put together the magazine.

A feature of the Desert Storm CD that should appeal to teachers of writing and journalism is its ability to follow the progress of a story from the field to the magazine. History teachers will like the ability to call up all the events of a certain day.

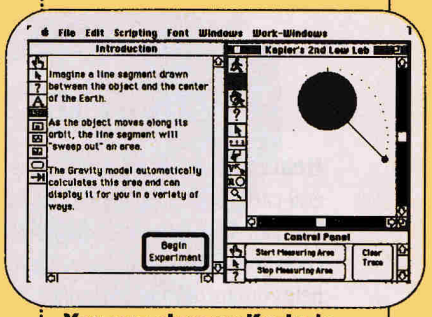
Time and its partner, Warner New Media, publishers of CD-ROMs such as The Magic Flute and The String Quartet, are making Desert Storm: The First Draft of History available for the low price of $39.95. For more information contact Time at the Time & Life Building, Rockefeller Center, New York, NY 10020, or circle 357 on the Reader Service card.

▲

### Physics Explorer

Wings for Learning, an offshoot of Sunburst Communications, has introduced the first in its projected series of 12 Physics Explorer software packages. The Physics Explorer series will eventually cover the breadth of the physical-science curriculum — from mechanics and waves, through electricity and magnetism, to modern physics.

Physics Explorer is software that encourages exploration. Physics Explorer: Gravity, the first program, simulates the motion of a body under the gravitational influence of a central planet. It's all but impossible to try this program




**You can observe Kepler's laws of motion in Physics Explorer: Gravity.**

and not experiment by giving the satellite a stronger push or starting its journey a little closer to the planet.

But just because it's fun, don't assume that Physics Explorer: Gravity isn't serious: Students will actually observe Kepler's laws of motion and apply them to the solar system. Teachers can adapt Physics Explorer: Gravity to any high-school physics program.

Physics Explorer: Gravity runs on any Macintosh, and costs $125. For details contact Wings for Learning at 1600 Green Hills Road, P.O. Box 660002, Scotts Valley, CA 95067-0002, (408) 438-5502 or (800) 321-7511, or circle 355 on the Reader Service card.

## NEW HARDWARE

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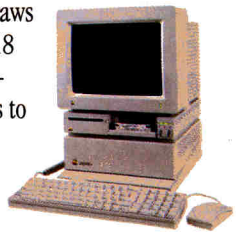
### Harris Labs

Many hardware developers are cashing in on the Apple II/Mac cross-market, and none more enthusiastically than Harris Labs. The company's memory card for the Apple IIGS is called **GS Sauce**, and it uses Mac SIMMs (single in-line memory modules) to add up to 4 megabytes of RAM in about half the space of other cards, and without the risk of bending the pins on

Illustration • Elizabeth Auer

# Beat the heat

**Heat.** The computer user's most insidious enemy. Peripheral cards unavoidably produce heat inside your cpu. Heat that can devastate your whole system. Conserver™ effectively cools your IIGS while it protects against power surges and helps organize your workspace.



**A quiet but powerful** cooling fan draws air from the top of the IIGS at a rate of 18 cubic feet per minute, lowering the temperature inside by more than 20 degrees to offset the heat produced by expansion cards. The difference can be critical to the life of your computer.

**Power surges** also invisibly threaten your computer's well-being. They occur when voltage spikes surge through your wiring seeking a place to dissipate. If that place is inside your computer, you'll very quickly gain a greater understanding of the laws of electricity. It's not a pretty sight.

**Special line conditioning filters** and dual surge suppression circuitry protect against surges, reduce noise and provide "clean" power. Six switched AC power outlets line the rear of Conserver to accommodate your computer, monitor and four other peripherals. Thus protecting your computer *and* your peripherals from surges. The outlets are conveniently controlled by three front-mounted LED switches.

**For beauty,** we gave Conserver the same sleek lines of the IIGS and a perfectly matched platinum color. To reduce desktop clutter, the unit was cleverly designed to house two 3.5" disk drives, or one drive and the special diskette holder we include.

**Conserver . . . . . $99**

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## NEW-PRODUCT FOCUS

standard memory chips. On the Macintosh side, the company's latest offering is the **Turbo CL** accelerator, which it claims will double the processing power of the Mac Classic. Perhaps even more impressive is Harris Labs' lifetime warranty on its products. No need to worry about product support here! Contact the company at 7379C Washington Avenue South, Edina, MN 55439, (800) 783-DRAM, or circle 358 on the Reader Service card.

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### 1-Meg RAM Card

Rodime Systems is also on the Classic upgrade bandwagon. In addition to a series of hard drives designed specifically for the infant Mac, Rodime is offering a RAM card with 1 megabyte soldered on. The card also has SIMM sockets that will accept an additional 2 megabytes. Contact the company at 901 Broken Sound Parkway, N.W., Boca Raton, FL 33487, (407) 994-5585, or circle 359 on the Reader Service card.

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### TouchWindow

Edmark is expanding its line of TouchWindow touch-sensitive screens to include the Mac. Warren Buckleitner, editor of The Survey of Early Childhood Software for the High/Scope Educational Research Foundation, commented, "You can walk into any classroom and see computer screens covered with fingerprints. The TouchWindow works with the child's natural desire to reach out and select responses or move objects on screen."

The TouchWindow ($275) plugs into the game port and is already in use on more than 25,000 Apple computers. An **Apple Adapter** ($17.95) is required for use with the Apple II or II Plus. The Mac version is expected soon. Contact Edmark at P.O. Box 3903 Bellevue, WA 98009-3903, (800) 426-0856, or circle 360 on the Reader Service card.

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### Model 510 Keyboard

Unicorn Engineering Inc., a manufacturer of peripherals and software for physically challenged and developmentally disabled persons, introduced recently the Model 510 Keyboard, a smaller version of the Unicorn touch-sensitive keyboard ($250 for the Apple II interface, $520 for the Mac version). The Model 510 is intended for users who need the versatility of the Unicorn Expanded Keyboard Model II, but don't have the range to use it, or for those who are familiar with the Expanded Keyboard and have refined their targeting skills. Model II overlays may be used with the Model 510 by reducing them by 50 percent.

Unicorn keyboards also require interface hardware from Don Johnston Development Equipment, Inc. (P.O. Box 639, 1000 N. Rand Road, Bldg. 115, Wauconda, IL 60084, 800-999-4660.) For the Apple IIgs and enhanced IIe (128K) you need the **Model G32e Adaptive Firmware Card**, ($520). For the Mac, you need **Ke:nx** (pronounced "connects"), an ADB device that requires at least a Mac SE with System 6.0.3 ($780). Contact Unicorn at 5221 Central Ave., Suite 205, Richmond, CA 94804, (415) 528-0670 or (800) 899-6687, or circle 361 on the Reader Service card.

# WHAT'S TRUETYPE?

TrueType is Apple's name for its font format that lets Macs print what's on screen, and display on screen anything that it can print. TrueType fonts are *outline fonts*, a kind that Adobe Systems introduced in 1989 for its Adobe Type Manager (ATM), a type system like TrueType.

Outline fonts are designed for video monitors and computer laser printers, not printing presses. Unlike Benjamin Franklin's system of keeping the pieces of each type size in individual trays, called fonts, Apple's outline-font format doesn't store pictures of letters in various type sizes. Instead, this format uses the system file to store the *directions* for drawing each letter. The directions vary for different letters in different typefaces, but you no longer need to store every size of type you might someday want to use.

Apple's TrueType will be a part of the next Mac system software upgrade, System 7.0. TrueType also works with System 6.0.7; if you buy a TrueType printer such as the Personal LaserWriter LS or StyleWriter, make sure you receive the TrueType disks for the older system: You never know when you'll need them. Your TrueType printer will include the *Times*, *Helvetica*, *Courier*, and *Symbol* families of typefaces. Other typefaces will become available from third-party vendors, with whom Apple collaborated in the creation of TrueType. For more information contact Apple Computer at 20525 Mariani Ave., Cupertino, CA 95014, (800) 776-2333, or circle 350 on the Reader Service card. — **P.S.**

# TIMELY DTP PROGRAM

**Timeworks' desktop-publishing program is now arguably the most up-to-date, best-supported program available for the Apple II. While the industry still raves about Publish It! 3, Timeworks has been working on Publish It! 4, which brings a slew of new features.**

**The new version offers the following improvements: automatic hyphenation; text autoflow; the ability to save a document as a template; the option to format a disk without leaving Publish It!; the ability to select all objects; support for New Print Shop graphics; improved font support; access to the Object Specifications dialog box by double-clicking on any object; and many other features. Also expect Timeworks to release a utility that lets its Mac program Publish It! Easy import page-layout documents from Publish It! for the Apple II.**

**Finally, Timeworks has made site licenses available for many of its products. According to the company, you can get licenses for Publish It! (Apple II) and Publish It! Easy (Mac). Schools that currently own at least one copy of a program can purchase site licenses for 10 or more computers. Publish It! 3, which has a retail price of $149.95, is available for $25 for each computer. Schools can order additional manuals for a small fee, which Timeworks hadn't announced at press time. According to the company, the site licenses will be handled primarily through its authorized education dealers. To receive the name of the nearest dealer or for other education-related questions call (800) 535-9497.**

**For more information on Timeworks products, contact the company at 625 Academy Drive, Northbrook, IL 60062, (708) 559-1300, or circle 353 on the Reader Service card. — D.M.**

# Power to spare

**With today's advanced peripherals** and applications Apple didn't dream of a few years ago, it's easy to overload the standard Apple power supply. That's why Applied Engineering now offers a heavy duty power supply for the IIGS, IIe and II+. AE's Heavy Duty Power Supply more than doubles your Apple's power output.

**Expansion cards, disk drives,** accelerators, clock cards, modems, printer interfaces and the base computer itself all compete for the same power output. Expect to crank all of them up at once, and you can find yourself on the short end of the stick.

**Apple's standard power supply** provides only 2.5 amps, compared to our 6 amp output. AE's input voltage is 90 to 135 VAC/60 Hz or switchable to 180 to 270 VAC/50 Hz. Output is: +5V @ 6A, +12V @ 2A, -5V @ .5A, -12V @ .5A. Ripple is: 10mV typ. and full load operating temperature is: 32° to 122°F (0° to 50°C).

**The AE Power Supply installs in minutes** using the same four mounting holes and occupying the same space as Apple's power supply. Comes complete with a full one year warranty.

**IIGS Power Supply.....$119**
**IIe, II+ Power Supply.....$99**

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AppleWorks Programmers Association

# NOTES

## USERS AND PROGRAMMERS
### Sharing the Power to Create

**AW Tip:** If you're an AppleWorks user who finds manipulating date/time-related data confusing and frustrating, here's some information that may help you. Recent versions of AppleWorks (especially version 3.0) have enhanced some of its date/time-handling functions. (Your system needs a clock to take full advantage of these date/time features, though.)

• Type an "@" (the *at* symbol) followed by a return to post the current date or time in a "date" or "time" category in the database.

• Select the *Print Date* or *Print Time* option in the word processor to print the current date or time. Using this feature with AppleWorks' *Mail Merge* function is especially handy for printing form letters.

• Use the Clipboard to transfer date/time information to the spreadsheet and preserve the original date/time formats as labels.

• Enhance your version with Beagle Bros' **TimeOut UltraMacros** (6215 Ferris Square, Suite 100, San Diego CA 92121, 800-345-1750) and you can add a function to post the current date or time anywhere in AppleWorks, in various formats, and with a single keystroke.

Handling date and time data in the spreadsheet requires carefully selecting the formats. You can sort this information in database format (Apr 15 91 or 10:45) alphabetically, but you'll have problems if you try to span more than one month. The YY.MMDD, MM.DD, or HH.MM numeric formats (91.0415, 4.15, or 10.45) sort easily in the spreadsheet and can be manipulated mathematically. A shortcoming of using the YY.MMDD numeric format is that it won't transfer to the database without help from UltraMacros enhancement. (See the accompanying macros.) Excluding or separating the year (YY) portion of the date into a separate spreadsheet column and using the MM.DD format is best. (Note: The MM.DD and HH.MM formats transfer easily from the spreadsheet to the database.)

Anniversary and birthday database lists need special treatment. Set up these files so that the month and day appear in a "date" category without including the year. The year may be in a separate category if you desire. Including the year with the month and day makes the list generally unusable for its intended purpose.

"Date arithmetic" (the ability to determine elapsed time or the number of days between two dates) isn't a built-in AppleWorks feature. Many users have requested it or have asked for help in handling these tasks. Date arithmetic is important for depreciation, accounts-receivable, payroll, financial, and other applications. Here are three helpful date-arithmetic tools and a calendar utility:

• **TimeOut ReportWriter**, by Dan Verkade, (Beagle Bros, 6215 Ferris Square, Suite 100, San Diego CA 92121, 800-345-1750) is an AppleWorks enhancement that provides at least 12 date functions that work within AppleWorks to perform date and time calculations.

• **Mastering AppleWorks** (second edition), by Elna Tymes, (distributed by Sybex, 2021 Challenger Drive, P.O. Box 4003, Alameda, CA 94501, 415-523-8233) provides instruction to create an Applesoft BASIC program that will manipulate date and time data from an AppleWorks database.

• Andreas Wennborg, an APA member, has created a concise spreadsheet application that will find the number of days between almost any two dates and determine the day of the week of each. In addition to this unique spreadsheet, Andreas has also created a macro that does date arithmetic. **COUNT.DAYS** and the macro are in the public domain; they're available from the APA and other public-domain sources.

• **FlexiCal**, by Lester Simpson and published by JEM Software (7578 Lamar Court, Arvada, CO 90003, 303-422-4766), provides practical daily, weekly, and monthly calendars that you print as needed. FlexiCal works from within AppleWorks and is automated by built-in macros that don't require a separate macro enhancement program.

**AW Macros:** The macros below convert and enter dates. The default date format (month dd, yyyy) in the AppleWorks *Other Activities* menu is assumed.

**Changes 'mmm dd yy' to a numeric 'yy.mmdd' format**

```
C:<all:cell:$4=$0:$1=left $4,3:$2=left $4,6:$2=right $2,2:$0=left $2,1:
  if $0 =" ":$2=right $2,1:$2="0" + $2:endif : $3=right $4,2 :
  if $1 = "Jan" $1 = "01":endif : if $1 = "Feb" $1 = "02" : endif :
  if $1 = "Mar" $1 = "03":endif : if $1 = "Apr" $1 = "04" : endif :
  if $1 = "May" $1 = "05":endif : if $1 = "Jun" $1 = "06" : endif :
  if $1 = "Jul" $1 = "07":endif : if $1 = "Aug" $1 = "08" : endif :
  if $1 = "Sep" $1 = "09":endif : if $1 = "Oct" $1 = "10" : endif :
  if $1 = "Nov" $1 = "11":endif : if $1 = "Dec" $1 = "12" : endif :
  oa-Y print $3 + "." + $1 + $2 : rtn>!
```

**Changes numeric 'yy.mmdd' to 'mmm dd yy' format**

```
R:<all:$4=cell:$3=left $4,2:$2=right $4,2:$0=left $2,1:if $0="0":
  $2=right $2,1:$2=" " + $2:endif:$1= right $4,4:$1=left $1,2:
  if $1 = "01" $1 = "Jan" : endif : if $1 = "02" $1 = "Feb" : endif :
  if $1 = "03" $1 = "Mar" : endif : if $1 = "04" $1 = "Apr" : endif :
  if $1 = "05" $1 = "May" : endif : if $1 = "06" $1 = "Jun" : endif :
  if $1 = "07" $1 = "Jul" : endif : if $1 = "08" $1 = "Aug" : endif :
  if $1 = "09" $1 = "Sep" : endif : if $1 = "10" $1 = "Oct" : endif :
  if $1 = "11" $1 = "Nov" : endif : if $1 = "12" $1 = "Dec" : endif :
  oa-Y print $1 + " " + $2 + " " + $3 : rtn>!
```

**Enters current date without year in 'mmm dd' format**

```
1:<all:$1=date:$2=left $1,3:$0=right $1,8:$1=left $0,1:$0=mid $0,2,1:
    print $2 + " " + $1 + $0:rtn>!
```

**Enters current date without year in 'mm.dd' numeric format**

```
2:<all:$0=date2:$1=left $0,2:$2=mid $0,4,2:print $1 + "." + $2:rtn>!
```

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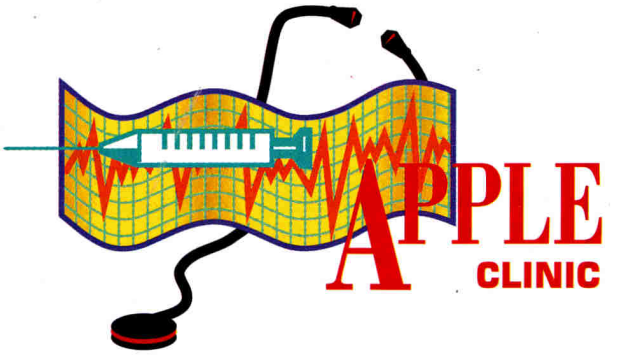


# CACHE BASH

**Learn about one way you can make your Apple II run a little faster.**

**By CECIL FRETWELL**

## HANDY STORAGE

WHAT'S MEANT BY THE TERMS "cache memory" and "disk caching"? And how does a cache differ from other types of memory?

**Robert McQueen**
**Florence, SC**

*A* cache *is a holding tank in your computer's memory that increases the speed of operations. Your computer uses cache memory to store frequently used data or code. One kind of cache is a special type of high-speed RAM (random-access memory) found on accelerator cards.*

*When the computer needs data or fetches an instruction, it looks in cache memory before searching the regular memory. When the system finds the information, it stores the instruction in cache memory, then processes it. Not only is cache memory usually faster than normal RAM, it's often in a chip nestling close to the CPU, so there's minimal signal delay. If the hardware doesn't find the information in slow memory, it must go back to the source, usually a disk.*

*Another kind of cache is related to disk I/O operations. Let's suppose a program requires a record it must load from disk. Instead of pulling in just the record, the operating system brings in a whole block of data, including the desired record, and stores it in an internal RAM buffer. When the program asks for the next record, very likely it's in the memory buffer, not on disk. With disks operating in milliseconds and the CPU running in nanoseconds, this operation, called* disk caching, *can result in some fast processing.*

*You can also disk-cache in the other direction. When a program writes a record, the operating system can put the record in an internal RAM buffer. The only time it'll write to disk is when the internal buffer is full, the data is "flushed," or the file is closed. Again your processing speed increases because the CPU operates in nanoseconds rather than milliseconds.*

*The problem is that if your computer crashes before the cache is dumped to disk, you'll lose your data. To avoid this disaster, after the program issues the write command, it can issue a flush command. "Flushing" means the buffer is written to disk and the internal structure of the file is updated. The most you could lose is one record.*

## SKINNY PLATINUM PAINT

I RECENTLY RECEIVED MY COPY OF Platinum Paint from Beagle Bros. It's a nice application, but I don't like the swapping associated with having to use two disks.

Following your suggestions in "Hard-Disk Drives Made Easy: The Wizard of OS" (April 1991, p. 53), it seemed logical to take the System Disk from Beagle Paint, delete the CDEV files to gain 86K of memory (a manual Control Panel is fine with me), delete the Finder icon files to add another 26K, and trash the START application, which is worth 104K. Deleting these files and applications gave me plenty of room to put the Platinum Paint application (187K) on the disk, and even let me add my favorite font to the System file.

Now the program runs fine and loads faster than the Finder, but when I click on *Quit*, it apparently tries to quit to the Finder. When the program can't find the Finder, it returns to the beginning (first, or palette) screen. I have to use another disk to turn off my system or reset the computer.

I have the same problem with Font Factory GS. Would ProSel or another application dispose of this minor difficulty?

**Raymond L. Hussey**
**Indianapolis, IN**

*A spokesperson at Beagle Bros (6215 Ferris Square, Suite 100, San Diego, CA 92121, 619-452-5502) confirmed my suspicion that you're having this problem because you removed the START file under the System folder.*

*Glen Bredon's ProSel 16 should solve your problem ($89.95; distributed by Charlie's Apple Seeds, 9081 Hadley Place, San Diego, CA 92126, 619-566-1297). This product replaces the GS/OS START file (renaming it OLD.START) with a smaller START file.*

*I've used ProSel quite a bit and firmly believe that if you don't like the shell, the rest of the package is well worth the money.*

*By the way, to run Platinum Paint the technical-support people at Beagle Bros recommend that you have at least 1 megabyte of memory.*

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# APPLEWORKS CLINIC

By Claris Corporation
and the National AppleWorks Users Group

## LINING UP DECIMAL POINTS

**How can I line up the decimal points in a column of numbers in database reports?**

Line up your database's columns of numbers by "justifying" the column. Get the report-format definition on screen, move the cursor to the column you want to justify, and press Open apple-J (OA-J). A series of 9s will replace the actual numbers in the first three records at the bottom of the screen, indicating that the column is justified. Unlike most applications (which justify only numbers), OA-J lets you right-justify columns containing text, and columns that mix text and numbers.

Note that AppleWorks automatically right-justifies any column you total with OA-T. When you try to justify a totaled column, AppleWorks just beeps.

## HANDLING DOLLAR SIGNS

**My spreadsheets include columns of dollar values. I like to put a dollar sign in front of the first number in the column, but not in the following numbers. For example:**

**$12,300.30**
**6,800.24**
**8,120.60**

**How can I format these numbers to get the output I desire?**

Comma format lets you line up these numbers. Format the first cell in the column in Dollar format with two decimal places. Then use Open apple-L or Open apple-V to format the remaining cells in Comma format with two decimal places.

## QUICK CLEANUP

**Is there any way to clean up my Desktop fast, then quit AppleWorks?**

The fastest way to clean up the AppleWorks 3.0 Desktop is to go to the Main Menu and select the fourth choice, "Remove files from Desktop." Now press Open apple-Right Arrow to select all files on the Desktop, then hit Open apple-Return. AppleWorks will save all changed files to their original disk or subdirectory, remove the files from the Desktop, and return to the Main Menu. Finally, select the sixth choice, "Quit."

## THE COMPUTER ISN'T FROZEN

**Every once in a while my computer displays the message "Insert /APPLEWORKS Program Disk" at the bottom of the screen and my computer seems to freeze. No matter what I do, I can't get rid of that message. What's causing this problem?**

Here are the two common causes of this problem:

1. You may have named your data disk "/APPLEWORKS" when you formatted it. That title confuses AppleWorks because it expects to find program code, not data, on the /APPLEWORKS disk.

You should use the Apple II System Utilities or IIgs Finder, or a disk-utility program such as Central Point Software's **Copy II Plus** ($39.95; 15220 NW Greenbrier Pkwy, #200, Beaverton, OR 97006, 503-690-8090) or Beagle Bros' **TimeOut FileMaster** ($49.95; 6215 Ferris Square, Suite 100, San Diego, CA 92121, 619-452-5500), to rename all your data-disk volumes as anything other than /APPLEWORKS.

Meanwhile, if you get the message again, open the door on the drive containing your data disk and AppleWorks will "hunt" through your disk drives for the program disk. When it finds the disk it will resume normal operation until you access the /APPLEWORKS data disk again.

2. You may be having problems if you have a damaged copy of the AppleWorks Program Disk. Make another backup of your original disk and try running AppleWorks from the new copy. If you're using your original disk, make a backup and start using it now!

APPLEWORKS CLINIC IS A FORUM FOR ANSWERING YOUR QUESTIONS ABOUT THE POPULAR INTEGRATED PACKAGE APPLEWORKS — CLASSIC, 3.0, OR GS. ADDRESS YOUR CORRESPONDENCE TO APPLEWORKS CLINIC, *inCider/A+*, 80 ELM STREET, PETERBOROUGH, NH 03458. MENTION OF THIRD-PARTY PRODUCTS IN THIS COLUMN DOES NOT IMPLY ENDORSEMENT BY CLARIS CORPORATION.

## RGB Color for IIe

I HAVE AN APPLE IIE AND WANT TO attach an RGB (red/green/blue) color monitor. I've been told I can't do it and that I must buy a composite monitor. Is there an alternative?

**Andy Ziegler**
**Plant City, FL**

*Try adding Applied Engineering's* ***ColorLink RGB Option*** *($129) to the company's RamWorks III expansion card (P.O. Box 5100, Carrollton, TX 75011, 214-241-6060). If you don't have the RamWorks III, you're probably better off getting Apple Computer's* ***Color Composite*** *monitor for the IIe ($310; 20525 Mariani Avenue, Cupertino, CA 95014, 408-974-0474). It has a text mode that connects directly to the monitor output of the IIe, good resolution, and a switch-selectable black-and-white text mode. (This monitor will probably cost less than buying RamWorks III with the RGB option.) Thanks to Walt Roshon, Harold Hislop, and Fred Starkey for their help answering this question.*

## Add Memory to Memory

I'D LIKE TO EXPAND THE MEMORY on my IIGs beyond the 1-megabyte limit I already have on my Apple board, but I hate to get rid of my perfectly good card. I thought of using AE's RamKeeper, but the company no longer manufactures it. Is there another way to add memory without getting rid of my Apple card?

**Robert McQueen**
**Florence, SC**

*Applied Engineering has discontinued the RamKeeper, but some mail-order houses may still have it in stock. I talked to a spokesperson at CV Technologies (800 East Whipp Road, #200, Kettering, OH 45440, 513-435-5743) and found out you can purchase the company's* ***GS Memory Board*** *from Quality Computers (20200 E. Nine Mile Road, St. Clair Shores, MI 48080, 800-966-1508). For 1 megabyte of memory it costs $149.95 and contains a slot into which you plug your existing memory card.*

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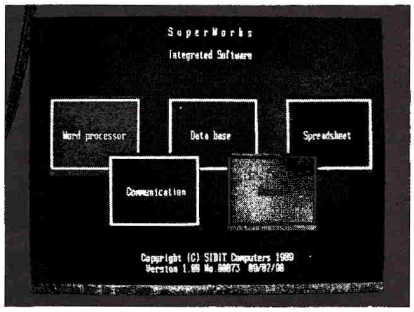


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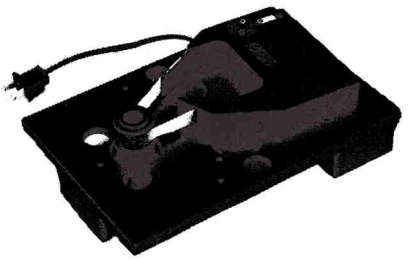

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# REVIEWS

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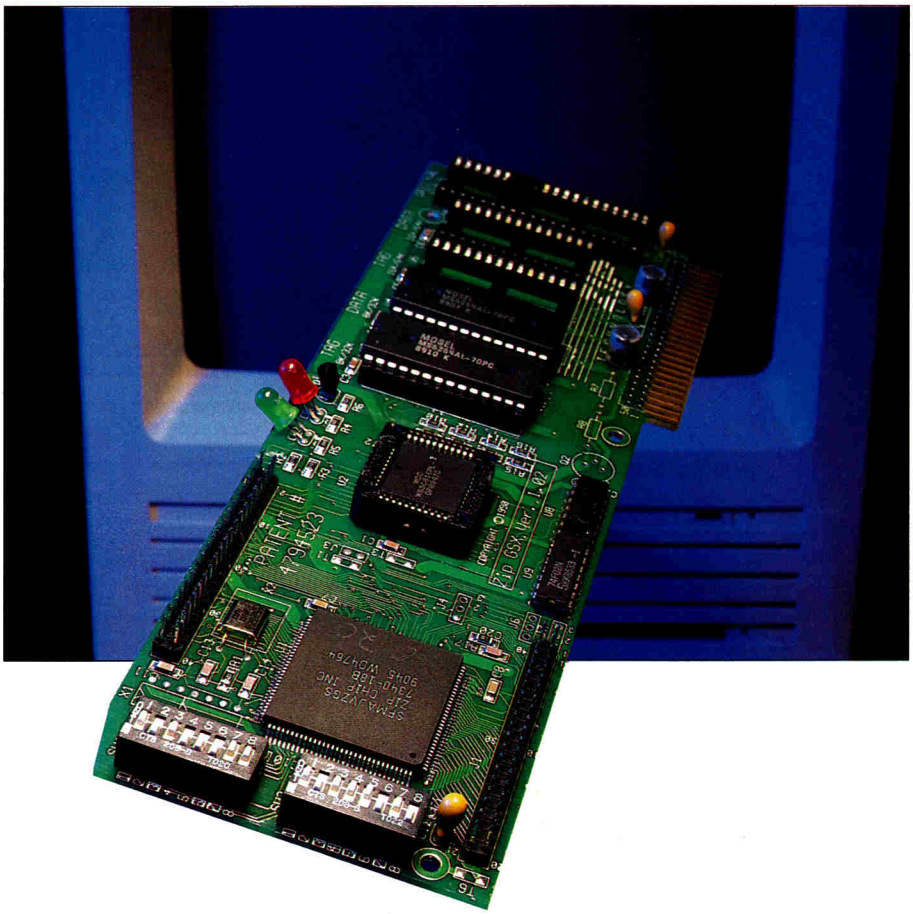

## ZIPGSX

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★ ★ ★ ★ ½

Flip through a few computing magazines at the newsstand and you soon realize that computer processing speed is one of this decade's hottest topics. While contemporary IBM PCs and compatibles typically boast speeds of 16MHz (megahertz) or more, the average Apple II slogs along at just 1MHz. (The Apple IIGS runs nearly three times faster than that, but the graphical nature of most GS programs slows operations considerably.) Building a gradebook spreadsheet, painting a still life, or designing a sales brochure can sometimes seem like running in beach sand.

Until now the trade-off for some GS users has been to stick with 8-bit text-based products such as AppleWorks 3.0 or tightly written graphics programs such as Publish It! 3. For the most part, these programs work well, but using them may mean depriving yourself of the many attractive features of GS/OS (the Apple IIGS operating system) — not to mention the colorful and powerful WYSIWYG (what you see is what you get) performance of authentic GS software such as AppleWorks GS.

Fortunately, there's a solution: the ZipGSX accelerator card from Zip Technology. This circuit board comes in three speeds: 7MHz, 8MHz, and 9MHz. Besides featuring a faster 65C816 microprocessor, or CPU (central-processing unit), each Zip card accommodates high-speed-caching random-access-memory (RAM) chips. Zip cards are equipped with either 8K or 16K of cache memory, an amount you can boost to a maximum of 64K with chips you purchase from the company. (A *cache* is a bit of RAM that automatically stores a temporary copy of your GS' memory; the larger the cache, the faster your machine runs.)

Moreover, you can upgrade your ZipGSX to 10MHz, the practical limit for the 65C816 microprocessor. In preparing this review we test-drove a 9MHz, 64K ZipGSX on a 1.25-megabyte GS for two weeks and experienced program speed improvements of up to about 300 percent.

At first glance a ZipGSX card might look like any other circuit board. Closer examination — aided in part by the cleverly conceived and executed HyperStudio-stack tutorial that accompanies the product — reveals the card's crystal oscillator clock; the ASIC (application-specific integrated circuit) that controls the card's functions; a high-speed 65C816 microprocessor; cache RAM chips; red (power) and yellow (caching) indicator LEDs (light-emitting diodes); two sets of DIP (dual in-line package) switches for customizing the card; a cable assembly for attaching the ZipGSX to your GS' motherboard (main circuit board); and a docking platform for storing the GS' original microprocessor chip.

Installation of our ZipGSX was straightforward, seemingly foolproof, and took less than 15 minutes. In a nutshell: Turn off

the power to your GS, remove its cover, touch the power supply to bleed off any static electricity on your body, carefully use the supplied chip puller to pry the original 65C816 chip from the GS' motherboard, insert the ZipGSX connector into the now-empty socket, and install the card in any of the first four expansion slots. That's all there is to it!

Some of the credit for ease of installation goes to the HyperStudio stack provided on the ZipGSX utilities disk. (You don't need to own HyperStudio to use the stack; a run-time version of the program is furnished.) The animated tutorial provides a detailed, step-by-step preview of the complete installation process. Progressing to each subsequent step is as easy as clicking on an arrow that points to the next card. When it's time to physically install your ZipGSX card, you can easily refer to the equally well-written instructions in the manual.

## AS YOU LIKE IT

Benefiting from two forms of documentation (the HyperStudio stack and the printed guide) is appealing indeed, but imagine being able to choose from five alternate methods for customizing your ZipGSX card's operations! You can effect changes in the board's functioning through either the hardware DIP switches mentioned earlier or any of four software utilities provided.

If yours is a floppy-based GS system, space may be limited on the GS/OS System Disk. In that case, install only one or two of the software options on your startup disk. If your system's equipped with a hard-disk drive, however, you might want to install all four software utilities and experiment to determine the one(s) you prefer. According to a spokesperson at Zip Technology, all ZipGSX cards are compatible with DMA (direct memory access) devices such as CV Technologies' RAMFast SCSI (small-computer-systems interface) and Apple Computer's Apple II SCSI cards.

Among these four utilities is a CDA (classic desk accessory) such as the ones stored in the text-based Control Panel you access by pressing the control, open-apple, and escape keys simultaneously. This accessory's particularly handy when you're working with 8-bit programs such as AppleWorks 3.0.

When you work with newer GS programs such as AppleWorks GS, you may prefer to use the ZipGSX cdev (control-panel device) appearing in the *Control Panel* listed in the *Apple* menu. Either accessory lets you make real-time alterations in the ZipGSX card's speed and/or DIP-switch settings. For example, a ZipGSX card on an AppleTalk-networked GS requires a reduced speed and one DIP-switch modification.

From the Finder you can invoke either the supplied software INIT or the ZipGSX.Sys16 program to semipermanently override DIP-switch settings without opening up your GS and touching the switches. According to a Zip technical-support representative, INIT utilities were developed originally for the Macintosh, but have been implemented in GS/OS as a way of patching (altering) programs in ROM (read-only memory).

The ZipGSX card's INIT lets you override DIP-switch settings with changes that prevail even after you've turned the computer's power off. The ZipGSX.Sys16 program provides yet another way to customize your ZipGSX card by editing and saving modified INIT parameters (settings).

Thanks to ZipGSX software, you needn't ever open up the GS or fiddle with actual DIP switches if you don't want to. That's not to say you won't enjoy sneaking a peek inside once in a while to watch the flickering yellow LED, a visual indicator of the invisible tasks performed by the ZipGSX. Technically referred to as an "anticaching" indicator, the LED brightens whenever the GS is reading or writing data in the computer's main memory, and dims when the computer's using cache memory.

If you're as intrigued by electronic gadgets as we are, you'll be fascinated watching the LED come to almost full brilliance whenever a disk-drive access occurs, and fade nearly completely when the computer's on but not processing information. What happens when cache memory's being put through its paces? The LED flickers like crazy! If only for entertainment value, we wish the ZipGSX's LEDs were visible without the GS' cover removed.

## PERFORMANCE PLUS

With the 9MHz ZipGSX installed in our system we ran a wide assortment of both Apple IIe/c and GS programs. We created spreadsheet templates, worked on mailing-list databases, designed desktop publications, painted pictures, composed letters, wrote manuscripts, and played music. In the process, we encountered only one problem: When we started up 8-bit ProDOS programs such as AppleWorks 3.0 and Publish It! 3 from scratch instead of launching them from GS/OS, the programs would seize up after a short time. If we first set the Control Panel speed to *Normal*, no such lockup occurred.

Zip Technology's technical-support department notes that other owners of older (ROM 01) GSes have experienced similar problems with early GSX cards because of an oversensitivity to electronic

Continued on p. 64

## TO THE TEST

Working at a computer magazine can really make you a performance junkie, especially because you don't have to pay for any of the products you review. So our response at the inCider/A+ tech labs to the Zip press release was "Yeah, but how fast will it really go?" We weren't going to be impressed with any half-measures; we called the company day and night until it sent us a loaded card, complete with 64K of cache memory and the 10MHz upgrade. Total list price: $429. Then we put on our safety glasses, got out our stopwatches and fired up our experimental IIgs for some comparative lap times. Take a look at our results in the accompanying table.

Is the ZipGSX faster than the competition? Just by a hair. If AE ever offers its 10 MHz upgrade on the open market, Zip might find the already installed TransWarp GS base too hot to handle.

**— Cameron Crotty**

| All times in seconds | IIgs (2.8 MHz) | TransWarp GS | ZipGSX |
|---|---|---|---|
| **Time to Finder from power off** | **40.58** | **32.45** | **30.71** |
| **Recalculate 143K AW 3.0 spreadsheet** | **39.47** | **17.43** | **12.70** |
| **AppleWorks 3.0 complete preload** | **8.11** | **6.40** | **5.84** |
| **Find primes up to 500 in Applesoft BASIC** | **136.87** | **60.83** | **47.64** |

# LC vs. GS

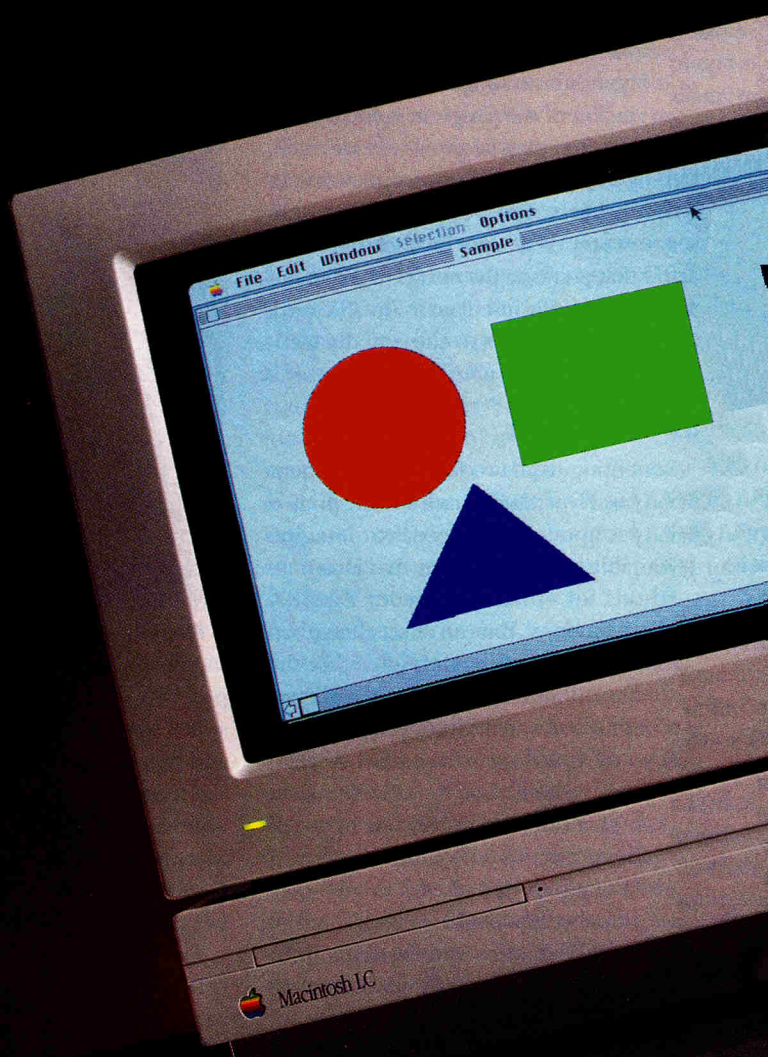
**And in this corner . . . .**
**Can the GS hold its own against the newest Mac contender in *inCider/A+*'s tough software workout?**

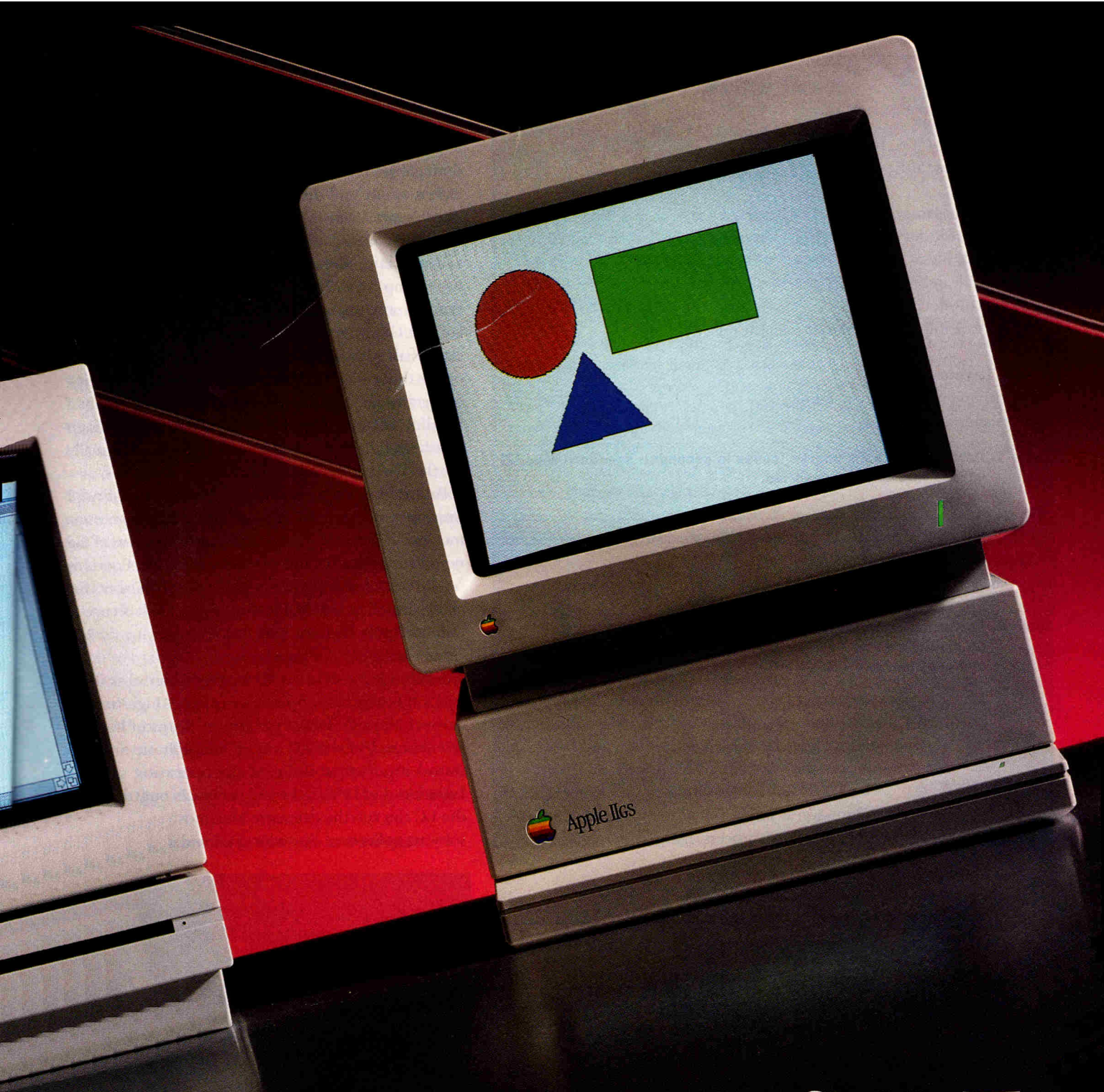
No lynch mobs allowed — that's the first, and only, rule. When *inCider/A+* introduced its readers to the Mac LC last December, a howl of protest hit on-line services and mailboxes. Is it true? Is the LC really better and cheaper than the GS? Put the two machines in a ring and the LC should pummel the reigning champ, right? Or does the IIGS still have some wallop in its punch?

Let's find out. All you need are the two machines side by side. Add lots of software, a smattering of hardware, and enough time to shake up the systems. Let's live dangerously.

## BASHING HEADS

Comparison comes naturally to the GS and the LC. Though far from being twins, these computers share important






# SIDE BY SIDE, HEAD TO HEAD

By GREGG KEIZER * CONTRIBUTING EDITOR

Photographs ÷ Dana Sigall

| | Mac LC | IIGS |
|---|---|---|
| **Finder** | | |
| Boot to Finder | 17.72 | 24.08 |
| Copy 4 files (56K) to hard disk | 2.26 | 4.28 |
| Copy 4 files (56K) to floppy | 8.69 | 9.18 |
| **Word Processing** | | |
| Launch 16K document | 8.65 | 20.22 |
| Save 16K file as ASCII | 2.09 | 3.44 |
| Scroll through file | 16.55 | 18.75 |
| Print 16K document | 69.40/92.94 | 83.4/100.22 |
| *Time to free up computer/time to complete print job | | |
| **Page Layout** | | |
| Justifying one-page newsletter | 1.41 | 2.63 |
| Resizing page to fit | .81 | 2.21 |

**Table 1. Performance benchmarks (times in seconds): standard Mac LC versus IIGS with accessories.**

| | Mac LC | IIe | IIGS standard | IIGS with accessories |
|---|---|---|---|---|
| **Apple IIe Emulation** | | | | |
| Resizing page to fit | 6.77 | 13.10 | 4.50 | 2.21 |

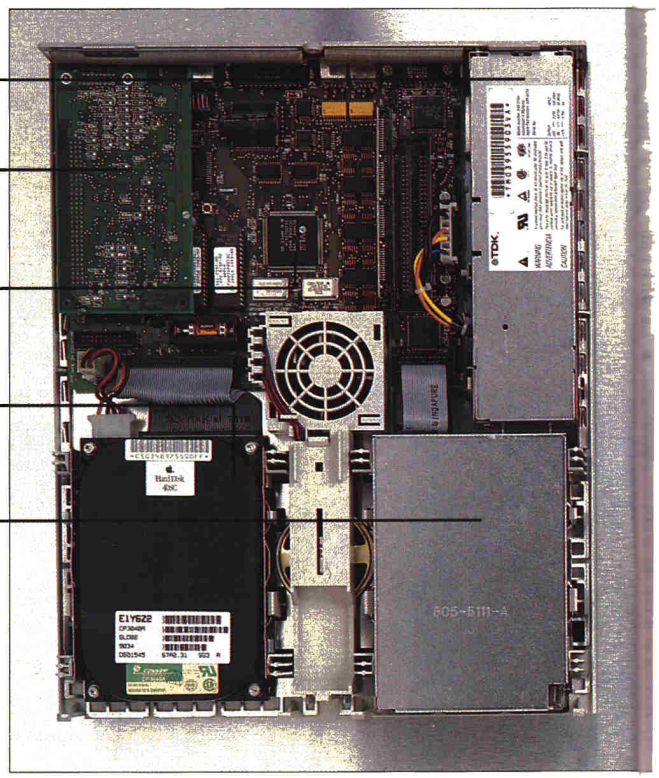
**Table 2. Performance benchmarks (times in seconds): Mac LC in IIe emulation mode versus stand-alone IIe, standard GS, and accessorized GS.**

characteristics, not the least of which is their intended market: Both the Apple IIGS and the Mac LC are most comfortable in the home, home office, and classroom. Moreover, they're comparably priced.

The Apple IIGS comes with 1.25 megabytes of RAM (random-access memory), a now-sluggish 2.8-megahertz 65816 microprocessor, and the standard Apple suite of serial, SCSI (small-computer-systems interface), ADB (Apple Desktop Bus), and AppleTalk ports. Seven slots let you plug in cards (and thus capabilities), while a special memory-expansion slot helps fill the machine's 8-megabyte RAM capacity. You equip the GS yourself with monitor and disk drives; most people settle for Apple's own 12-inch RGB (red/green/blue) screen and a pair of drives, one 3.5-inch, one 5.25-inch. The GS' self-proclaimed expertise, graphics and sound, is backed up by 4096 colors and an 15-voice Ensoniq synthesizer chip, underutilized by most of the array of current GS programs. First available in 1986, the GS can't boast a huge software library. Relatively few developers these days produce GS-specific productivity, entertainment, and educational programs. Only a handful are still actively creating GS packages (although hundreds of 8-bit Apple II programs written originally for the IIe/IIc help fill the gap for GS users).

Pop the top on a Macintosh LC and you'll find 2 megabytes of RAM, a 16-megahertz 68020 microprocessor (not exactly state of the art, as it was previously part of the now-defunct Mac II), and nearly the same set of ports as on the GS. A single processor-direct slot (PDS) waits for an expansion board: Many Mac LC users will occupy it with the **Apple IIe Card**. (See the accompanying sidebar "Sure Fooled Me" for details.)

Also inside the LC are a 40-megabyte hard-disk drive and a 1.4-megabyte SuperDrive (Apple's high-density 3.5-inch floppy). Two of the potentially most impressive features of the LC are its microphone and the sound-input capabilities of the operating system. Introduced in 1990, but widely available only this year, the LC can run the extensive Macintosh productivity-software collection. Few education and entertainment



packages flash the Mac label, though Apple is now prodding developers in both camps.

### WEIGHING IN

No sorcerer's stone can transmogrify the Apple IIGS. You can't wave your hands and turn the GS into an LC — or an LC into a GS — even if you have deep, deep pockets. Feeling the pain as they look at their GS software and wonder why the LC can't run it, critics have taken Apple to task for this incompatibility. What you can do, of course, is beef up the GS to make it a better match hardware-wise for something like the Macintosh LC.

Shop for an internal 40-megabyte hard-disk drive first. Applied Engineering's **Vulcan** is really the only choice. You can save a bit by going external with something like Quality Computers' **Q-Drive** (which includes Apple's **High-Speed SCSI Card**), but you'll regret it later when your desk tries to crowd you out of a place to put your keyboard. An internal drive is out of sight, out of the way, and much more convenient. You'll need to add more memory, too. Move your GS to the 2.25-megabyte mark (comparable to the LC's 2 megabytes) by piggybacking your existing **Apple Memory Expansion** card to CV Technologies' 1-megabyte **GS Memory Board**.

Picking up the GS' speed can make all the difference if you're trying to compete with the LC and its 68020 microprocessor. Your best bet is Applied Engineering's **TransWarp GS**, an accelerator board that pushes the GS' CPU (central processing unit) to 7.4 megahertz. Applied's new **Cache Card** increases speed another 30 percent. You can duplicate some of the LC's sound input on the GS with Roger Wagner's **HyperStudio**,

## Price Wars

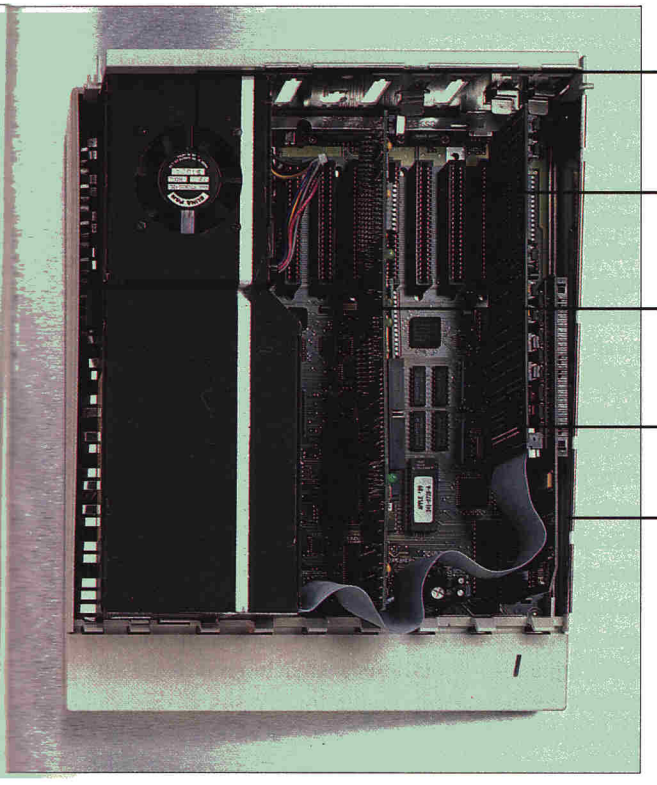
Apples don't come cheap. All the talk about low-cost Macs conveniently omits the fact that they're low-cost only when compared to higher-priced Mac models at the top of the line. Ranked against a similarly equipped and comparably quick PC compatible, any Apple seems overpriced. But you know that already.

Comparing the cost of the Macintosh LC versus that of the Apple IIGS is particularly difficult. At one end you can make a case that the standard GS (CPU, RGB monitor, two disk drives) might price out as low as $1881. A bare-bones LC comes in at nearly $600 more — $2458 — and doesn't run Apple IIe software.

Comparable configurations, or as comparable as technology can make them, show a slightly different picture, though. You'll need to add such extras as a hard-disk drive, an accelerator, and additional RAM to bring the GS as close to the LC's specs as possible. Add Apple II emulation to the LC and its price rises, too. The results are detailed in the accompanying table. (With the exception of the Apple IIe Emulation Card, all prices are averages taken from direct and/or discount sources.) A stripped-down GS costs much less than the LC — but it does less, and does it less quickly, than an upscale GS. **— G.K.**

| GS | FEATURE | Mac LC |
|---|---|---|
| $859 | CPU | $1999 |
| 459 | Apple 12-inch RGB | 459 |
| 315 | Apple 3.5-inch drive | n/a |
| 248 | Apple 5.25-inch drive | 248 |
| 648 | Vulcan 40MB hard drive | n/a |
| 259 | AE TransWarp GS | n/a |
| 149 | 2MB RAM | n/a |
| 82 | HyperStudio | n/a |
| n/a | Apple IIe Emulation Card | 199 |
| **$3019** | | **$2915** |

**Mac LC logic board (left); IIGS logic board (right).**



**VULCAN HARD-DISK DRIVE with 40-megabyte capacity**

**general-purpose EXPANSION SLOT (one of seven in GS)**

**TRANSWARP GS with replacement microprocessor, 7.4 megahertz**

**VULCAN CONTROLLER CARD**

**RAM CARD installed in special memory-expansion slot. GS' total RAM capacity is 8 megabytes.**

## Sure Fooled Me

Vital to the LC's acceptance among Apple II users, crucial to its approval by educators, the Apple IIe Card turns back the clock as it turns one of the newest Macintosh computers into an old machine. Unlike the Apple IIe emulation built into the GS, the LC's requires both extra hardware and another piece of software: a petite $199 IIe-on-a-card connected to the LC's single processor-direct slot, with emulation software running from the Macintosh's 3.5-inch or hard-disk drive.

The result is striking. Once you launch IIe Startup, the Macintosh application, the LC's screen darkens and the familiar "Apple //e" flashes across the display. Stick a ProDOS 3.5-inch disk into the LC's internal drive or a 5.25-inch disk into an external drive connected to the port at the back of the card, and you can run just about any 8-bit program that works on an enhanced IIe. AppleWorks, BannerMania, The Print Shop, Publish It! 3, Math Blaster, and Where in the World Is Carmen Sandiego? were just some of the IIe programs that passed inCider/A+'s tests with flying colors. Only America Online failed to function.

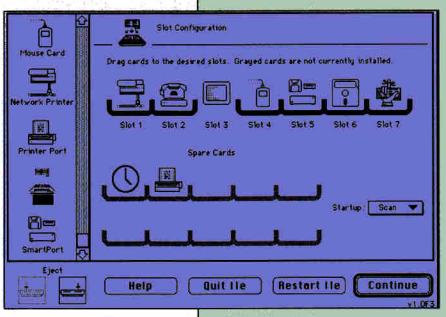



**Figure. Screen dump showing Mac LC's Apple IIe emulation Control Panel.**

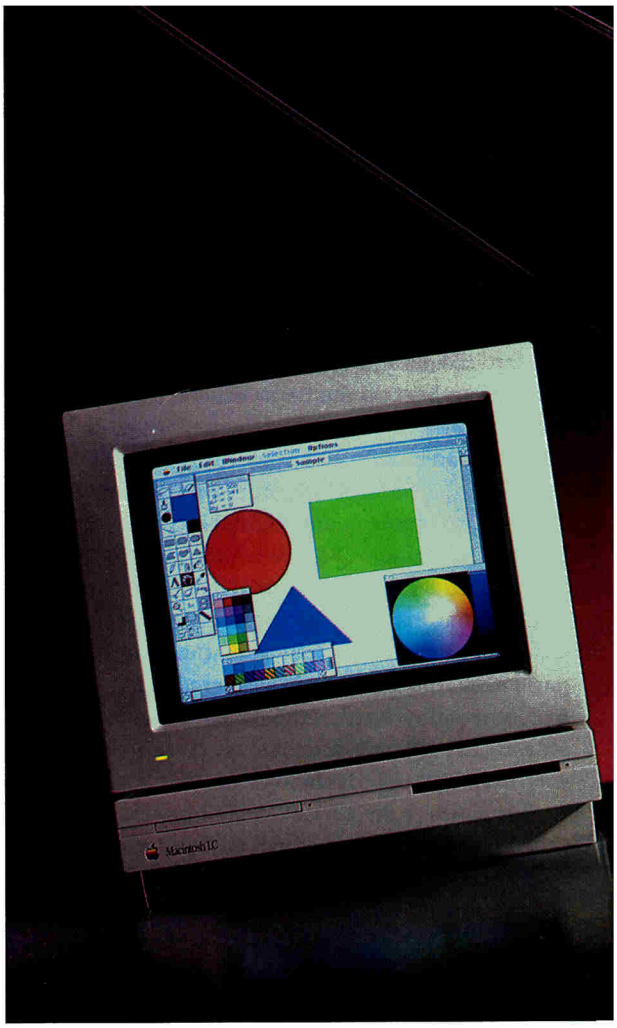
You can steal up to 1024K of the LC's RAM to apply to Apple II mode, a boon to AppleWorks users. Programs can run at double the speed of a real IIe (though only about 66 percent as fast as an Apple IIGS). And with an ingenious feat of software engineering, the LC mimics Apple IIe slots.

To ready the LC's printer and modem ports, mouse, 3.5-inch drive, and internal memory for IIe work, you simply drag icons on the Option Panel, accessed by pressing Open apple-Control-Escape. If the LC is connected to a network printer with LocalTalk cabling, for instance, you just pull the Network Printer symbol to Slot 1. (See the accompanying **Figure**.)

It's not perfect. You can't get to the LC's internal hard-disk drive within Apple IIe mode, nor can you access an AppleShare-run network while emulating the IIe. According to Brian Loucks, product marketing manager for the IIe Card, AppleShare compatibility is the highest priority: "We didn't get the AppleShare stuff done for the first version, but we're working on providing that in the future." Divvying up the LC's hard disk between ProDOS and the Macintosh is lower on the list, and "only in the investigative stages," adds Loucks.

Even with those omissions, the IIe Card is a well-designed, easy-to-use link with the countless 8-bit Apple II programs that home and classroom Macintosh users won't want to do without.

**— G.K.**



**Left, Color MacCheese (Delta Tao) on Mac LC; right, Platinum Paint (Beagle) on IIGS. Note similarity of tool menus and color and pattern palettes. Gradient-tone color wheel for choosing palette is unique to Mac.**

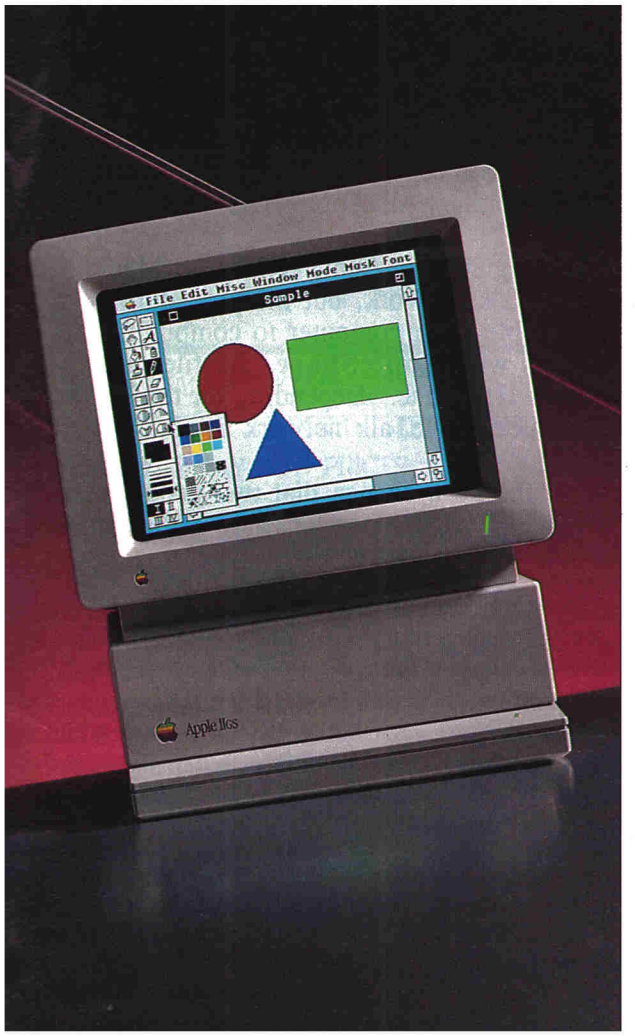
the interactive-multimedia maker that includes a microphone and digitizing software for inserting sound and music into stacks.

By the same token, the Macintosh LC can't revert to an Apple IIGS. The best it can do is mimic a IIe after you've plugged the **Apple IIe Card** into the LC's PDS connection. Add an **Apple 5.25-Inch Floppy-Disk Drive** and you're set. Everything else — the 40-megabyte hard-disk drive, the 2 megabytes of RAM, the fast microprocessor — is part of the LC.

### COMING OFF THE BENCH

You can't compare the GS and the LC feature for feature, capability for capability. They may look surprisingly alike, both on the desktop and when you're running certain kinds of software, but they are, after all, different machines. But you can compare their performance in several real-world applications, from startup and document launch to printing and page layout. Waiting for your computer, whatever the model, is dead time. If one of these two machines is decidedly inferior in day-to-day productivity tasks, it's a less-effective tool and a poor value.

All tests detailed below were conducted on a standard




Macintosh LC with 2 megabytes of RAM and a 40-megabyte hard-disk drive, and on a substantially enhanced GS that included 2.25 megabytes of RAM, an internal Vulcan 40-megabyte hard-disk drive, and a TransWarp GS card. Note that system costs are remarkably close. (See the accompanying sidebar "Price Wars.")

We began with operations conducted from the Finder, the first screen you see on either the GS or the LC. For most people, this file manager and program launcher *is* the operating system. You spend a lot of time working in the Finder as you organize files in folders, copy files from disk to disk, and run software with a double click. Take a look at **Table 1**, the time-trial results. Although the LC beat the beefed-up GS in every case, the only significant Mac advantage is in the time it takes to boot the machine and get to the Finder. Once there, similarities rule — no other application comes as close on both computers. If you're familiar with the Finder on the GS, you'll be comfortable with the Finder on the LC.

Integrated software — programs that do a lot of things for a relatively small amount of money — hold a special place in Apple II and Mac users' hearts. **AppleWorks GS** and **Microsoft Works** are fitting competitors on the two machines. Each outfits its computer with a word processor, database manager, spreadsheet, and telecommunications module; AppleWorks GS adds paint and page-layout programs. Both offer a what-you-see-is-what-you-get look at documents and forms, and both depend on a graphics-based interface featuring a point-and-click approach. Though the difference in launching a document was dramatic, the times to perform other typical tasks were much closer. With a quick computer, AppleWorks GS is nearly a match for Microsoft Works and the LC. Both packages are easy to use and can turn out nearly identical documents. (See the accompanying **Figure**.)

The Mac made its reputation with desktop publishing — churning out good-looking documents with the right software and a laser printer. **Publish It! Easy** and **Publish It! 3** are more than just capable packages. The former is a simple-to-use but full-featured desktop-publishing program for the Mac, while the latter is the leading layout application for the Apple II. Publish It! Easy and the LC won the time trials handily, even though the accelerated GS flew through the chores when compared to an Apple IIe, a Mac LC in emulation mode, or even a standard GS (**Table 2**). Publish It! Easy has the edge not only in performance, but in tools and features as well. It's simpler to use and more flexible. But the final results — the printed pages — look uncannily alike, whether created on the GS or the LC, as long as both are connected to a capable laser printer.

## SPARRING PARTNERS

The LC's on top in the benchmarks. That's not unexpected — after all, it's competing against five-year-old technology. What *is* surprising is how close the GS comes to the LC in most of the performance tests. True, the GS wasn't an off-the-rack system — but it was comparably priced.

Other elements and features don't show up in simple timing tests. The GS' seven slots are a powerful argument for the machine. Adding another function, such as the **Apple II Video Overlay Card**, a genlock device that synchronizes video and computer-graphics signals so that you can combine the two in a single frame, is simply a matter of slipping in a new board. Compared to the GS, the LC is crippled with its single slot. Multifunction cards for the LC, some of which are already available, may divert some of that criticism, but it's going to be more difficult to add features to an LC than to a GS.

The counterweight lies in software. There's simply no comparison between the GS and the LC when it comes to productivity packages. From top-of-the-line spreadsheets like **Microsoft Excel** to word processors like **MacWrite II**, the Mac can match any computer when it comes to software. Games and educational software may be slow in coming to the Mac (look for that to change dramatically this year), but because many of the best of both are in 8-bit Apple II form, the LC can access them as easily (if not quite as cheaply) as the GS.

The real winner? That depends on what you plan to use the computer for. Strange as it may sound to hard-core Apple II owners, the GS and the LC are as much complementary as competitive. Both run with graphics-based interfaces and can print to PostScript printers; both can connect to an AppleTalk network; and the two

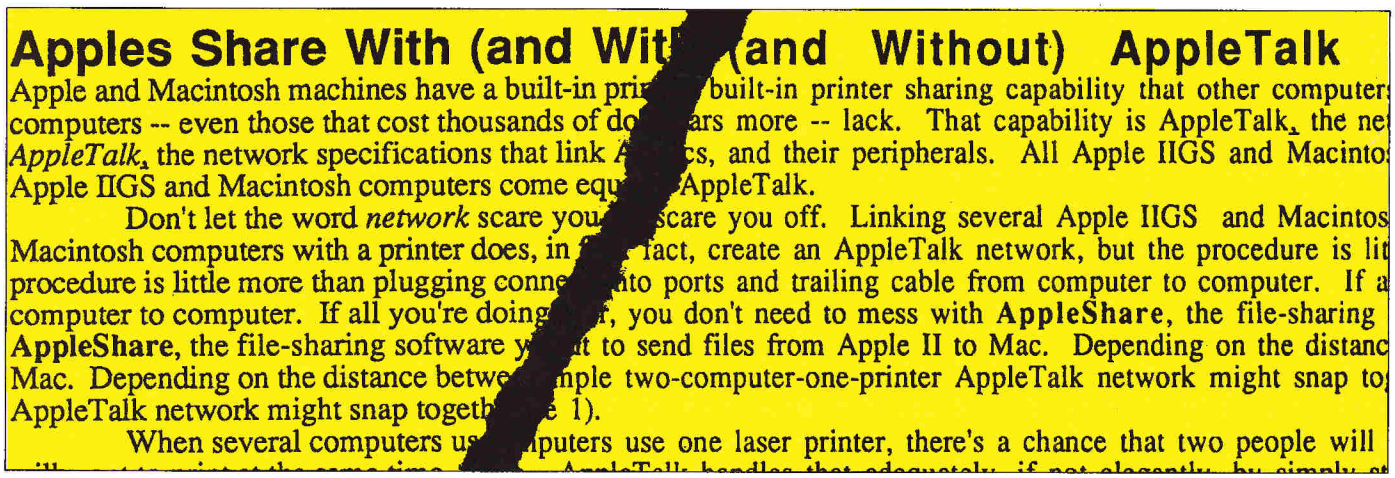



**Figure. Laser-printed documents prepared with Mac Microsoft Works (left) and AppleWorks GS (right).**

machines even share some similarities on the software side. Yet each has strengths you can play from.

The GS, for instance, is still the better all-around, low-cost interactive-multimedia platform. Whether you're dabbling at home with HyperCard IIGS or producing full-fledged extravaganzas in the classroom, the GS is the best pick. Surprised? Most of the credit goes to the relatively inexpensive Apple II Video Overlay Card, which makes possible all kinds of video/graphics combinations. Though the Mac's no multimedia slouch, similar video boards for that machine cost three to four times as much; no such board exists for the LC yet (and may never, owing to its single and unique slot).

Then, too, although the LC may be poised to leap into classrooms, for many schools the GS is still the best choice. Curricula that depend on Apple II software running from an AppleShare file server across an AppleTalk network simply won't work with the LC. Because the Apple IIe Emulation Card fails to deliver AppleShare connectivity, you can't use an LC to run a network's II software. (You can connect an LC to an AppleShare file server and run Macintosh programs, but that's not the point here.) Many schools have a considerable investment in networked software; they won't give up that software easily. Until the IIe Card can connect to an AppleShare file server, the GS remains a more flexible and less expensive AppleTalk workstation than the LC.

But if you're looking for a bridge between the past and the future of Apple computing, the LC is your choice. The Apple IIe Card keeps ties alive to the classic software you just can't give up yet, such as **AppleWorks**, **The Print Shop**, and **Math Blaster**. The GS can do that, too, but with the LC you can dive into a much bigger native software pool at the same time. Music software, for instance — for professionals and amateurs both — abounds for the Mac. The pickings are slim for the GS. Ditto with Mac desktop-publishing software, where you select from three times the choices — including the powerful **PageMaker** and **Quark Xpress**. And if you like to write, the LC lets you

## PRODUCT INFORMATION

**Apple High-Speed SCSI Card**, $129
**Apple Memory Expansion**, $229
**Apple 5.25-Inch Floppy-Disk Drive**, $329 list, $248 mail-order sources
**Apple IIe Card**, $199
**Apple II Video Overlay Card**, $549
**HyperCard IIGS**, $99
Apple Computer
20525 Mariani Ave.
Cupertino, CA 95014
(408) 252-2775

**AppleWorks 3.0**, $249
**AppleWorks GS**, $299
**HyperCard 2.0**, $199
**MacWrite II**, $249
Claris Corp.
P.O. Box 58168
5201 Patrick Henry Drive
Santa Clara, CA 95052
(408) 727-8227

**Cache Card**, $109
**TransWarp GS**
$349 list,
$259 mail-order sources
**Vulcan**
$899 list,
$648 mail-order sources
Applied Engineering
P.O. Box 5100
Carrollton, TX 75011
(214) 241-6060

**GS Memory Board**
CV Technologies
1800 East Whipp Road
Kettering, OH 45440
(513) 435-5743
$119

**HyperStudio 2.1**
Roger Wagner Publishing
1050 Pioneer Way
Suite P
El Cajon, CA 92020
(619) 442-0524
$149.95 list,
$82 mail-order sources

**LightningScan**
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(415) 254-6581
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**MacLinkPlus/PC**
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Trumbull, CT 06611
(203) 268-0030
$199

**Math Blaster**
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**Microsoft Excel 3.0**, $495
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**Quark Xpress 3.0**
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**Q-Drive**
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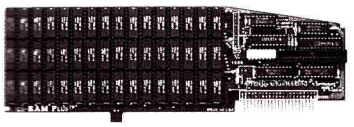

| | |
|---|---|
| GS Ram II w/1 Meg | $149.95 |
| GS Ram II w/2 Meg | $199.95 |
| GS Ram Plus w/1 Meg | $199.95 |
| GS Ram Plus w/2 Meg | $249.95 |
| TransWarp IIgs | $254.95 |
| TransWarp IIe (4 mhz) | $96.95 |
| RamWorks III w/256K | $144.95 |
| DataLink 2400B Modem w/Sendfax (IIgs) | $169.95<br>$204.95 |
| DataLink Express Modem w/MNP5 & sendfax(IIgs) | $164.95<br>$224.95 |
| Vulcan 20 Meg Drive | $499.95 |
| Vulcan 40 Meg Drive | $649.95 |

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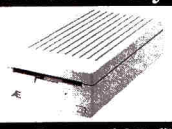

800K **$194.95**

1.6 Meg **$254.95**

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|---|---|
| Laser 128 w/RGB mon | $499.95 |
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(Computer prices include freight)

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1-5 **$2.95** 6+ **$2.50**
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| 25 DS/DD 5.25" Disks | $8.75 |
| Locking 3.5" or 5.25" Case | $7.95 |

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| 256 x 4 Drams (2 - 120ns) | $19.95 |
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| InWords OCR(Req. Quickie) | $79.95 |
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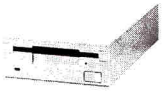
| Harmonie | $30.95 |

## AMR AS1.4K 3.5" Drive



IIc+, IIgs 800K; Macintosh 1.4 Meg **$189.95**
IIgs 5.25" **$139.95**

| | |
|---|---|
| Apple IIe UDC Card | $39.95 |

## Zoom 2400B Modem Package

Package includes Zoom MX 2400 baud external modem, Beagle Brothers Point-to-Point Communications software, Compuserve and Genie starter Kits and more. Compatible with Apple IIe, IIc, IIgs, and Laser 128 series **$139.95**

## Digital Vision

| | |
|---|---|
| ComputerEyes IIe | $99.95 |
| ComputerEyes IIgs | $194.95 |

## Other Hardware

| | |
|---|---|
| Thunder Scan | $154.95 |
| FingerPrint GSI | $89.95 |
| IIe 80 Column 64K Card | $24.95 |

## Print Shop Companion IIgs

Apple IIgs **$29.95**

## DTP and Graphics Software

| | |
|---|---|
| Publish It!3 | $79.95 |
| 4 in one Graphics Pack | $74.95 |
| Educational Graphics | $25.95 |
| Childrens' Writing & Publishing Center | $36.95 |
| Children's Writing & Publishing Center Graphics Pack | $46.95 |
| Mickey's Crossword Maker | $24.95 |
| VCR Companion | $29.95 |

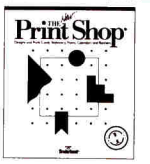
## Beagle Brothers Software

| | |
|---|---|
| Platinum Paint (IIgs) | $61.95 |
| AW 3.0 Companion | $24.95 |
| T.O. Style Pack | $81.95 |
| T.O. Decision Pack | $93.95 |
| T.O. Performance Pack | $68.95 |
| T.O. TextTools, Thesaurus | $30.95 |
| T.O. Superfonts | $42.95 |
| T.O. Desktools I or II | $30.95 |
| T.O. Sidespread | $30.95 |
| T.O. ReportWriter | $49.50 |
| T.O. SuperForms, Outliner | $43.95 |

## Entertainment Software

| | |
|---|---|
| Chessmaster 2100 (IIe or IIgs) | $31.95 |
| The Immortal (IIgs) | $32.95 |
| Pipe Dream (IIe and IIgs) | $17.95 |
| Task Force (IIgs) | $24.95 |
| Prince of Persia | $20 .95 |
| Hunt for Red Oct(IIe or IIgs) | $21.95 |
| Zany Golf (IIgs) | $26.95 |
| Maniac Mansion | $14.95 |
| Tetris (IIe and IIgs) | $24.95 |

## The New Print Shop




Apple 128K **$29.95**

Print Shop IIgs **$35.95**

| | |
|---|---|
| Sampler Graphics | IIe $19.95 IIgs $19.95 |
| Party Graphics | IIe $19.95 IIgs $19.95 |
| School & Business Graphics | IIe $19.95 |

## Productivity Software

| | |
|---|---|
| AppleWorks 3.0 | $169.95 |
| AppleWorks GS 1.1 | $199.95 |
| Design Your Own Home Architecture, Interior, Landscape each (IIe) $44.95 (IIgs) | $55.95 |
| HyperStudio 2.1 (IIgs) | $89.95 |
| Quicken | $37.95 |
| ProTERM | $79.95 |
| My MailList, LabelMaker ea | $14.95 |

## Utility Software

| | |
|---|---|
| Copy II Plus 9.1 | $24.95 |
| Prosel 16 (IIgs) | $54.95 |
| Cross-Works | $69.95 |
| Vitesse Salvation Series(IIgs) | $119.95 |

## Educational Software

| | |
|---|---|
| Where in Time | $27.95 |
| Where in the World | $25.95 |
| Where in the USA | $27.95 |
| Where in Europe | $27.95 |
| Oregon Trail | $24.95 |
| McGee or Katies Farm(IIgs) | $26.95 |
| McGee Fun Fair (IIgs) | $26.95 |
| GeoQuiz | $24.95 |
| GeoPuzzle (IIe or IIgs) | $24.95 |
| Think Quick | $29.95 |
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| Mavis Beacon Typing (IIgs) | $31.95 |
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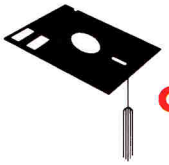
| The Playroom | $25.95 |



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explore everything from **WriteNow** to **Microsoft Word**. Compared to that array of sophisticated packages, GS writing tools seem few and far between.

In addition, a Mac LC may make more sense as a home-office machine. If you use a Mac at the downtown office, putting one in your home is an easy decision. But even if you work 9 to 5 with IBM PCs, it's much easier to share their files with an LC than with a GS because of a wider selection of conversion software, such as DataViz's **MacLinkPlus/PC**. The LC's library of productivity software also commends it for home-office applications: You're more likely to find a package that meets your needs exactly when you're scanning the Mac shelf at the store. Hardware add-ons recommend the Mac, too. If you work as a desktop publisher from home, for instance, you have dozens of hand-held scanners to choose from, not just the few available for the GS (primarily **Quickie** and **LightningScan**).

### THE DECISION

Performance versus application: Evaluated strictly on performance, the Mac LC outweighs a standard Apple IIGS; stack it up against a comparably priced GS system that includes some heavy-duty hardware, though, and the gap narrows. If you're willing to let a few seconds slide by, the GS will suit you fine.

It's the software that really tells, though. Both the GS and the Mac LC can run Apple II programs, but the Mac's collection of software written specifically for the machine is broader and deeper than the GS'. The Mac's program count grows rapidly; the GS' choices increase slowly. Is the Mac LC is a better computing value than the Apple IIGS? If you're watching the Apple market you'd say that dollar for dollar, the LC is a smarter investment, both in the short term and over the long haul.

But the LC isn't perfect. The machine's single slot and lack of AppleShare compatibility within Apple IIe emulation mode are telling weaknesses that may swing a purchase decision to the GS. Chances are both problems will be solved in time with various multifunction PDS cards and an upgrade to the IIe Card's software — but some people won't wait.

Who's the winner? Primarily because of the Mac LC's software, partially because of its performance, and despite its shortcomings, the decision between the LC and the GS is a close call. Tomorrow — unless Apple Computer changes its marketing strategy and takes a long, hard look at beefing up the GS and supporting the machine's software developers — it'll be a TKO. ❑

GREGG KEIZER WAS THE FOUNDING EDITOR OF *COMPUTE!'S APPLE APPLICATIONS*, A BIMONTHLY PUBLICATION, AND IS CURRENTLY THE AUTHOR OF BRIDGING THE GAP, OUR COLUMN ON APPLE II/MAC CONNECTIVITY. WRITE TO HIM AT 614 LINDEN STREET, SHREVEPORT, LA 71104. ENCLOSE AN SASE IF YOU'D LIKE A PERSONAL REPLY.


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| Renaissance | $ 28.00 |
| Exorciser | $ 28.00 |
| Bakkup | $ 28.00 |
| Salvation-Supreme (SAVE $44 - All 5 Salvation Utilities in one box) | $115.00 |
| Harmonie + BJ-10e (Same mechanism as StyleWriter - 360x360 res.) | $399.00 |

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| | |
|---|---|
| SIMM (1MBx8) | $ 49.00 |
| DRAM (1MBx8) | $ 49.00 |
| GS QuickPack (Apple Mem. card) (adds 3 sets of 256K DRAMs to your Apple card) | $ 52.00 |

**PRO Drives**

| | |
|---|---|
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| Pro 120 | $ 589.00 |

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|---|---|
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| StorMate 185 | $ 759.00 |
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| | |
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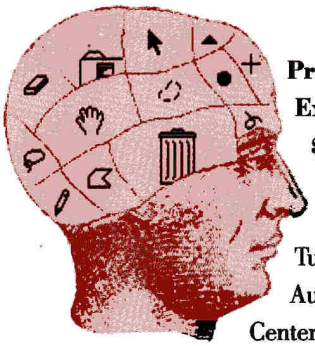

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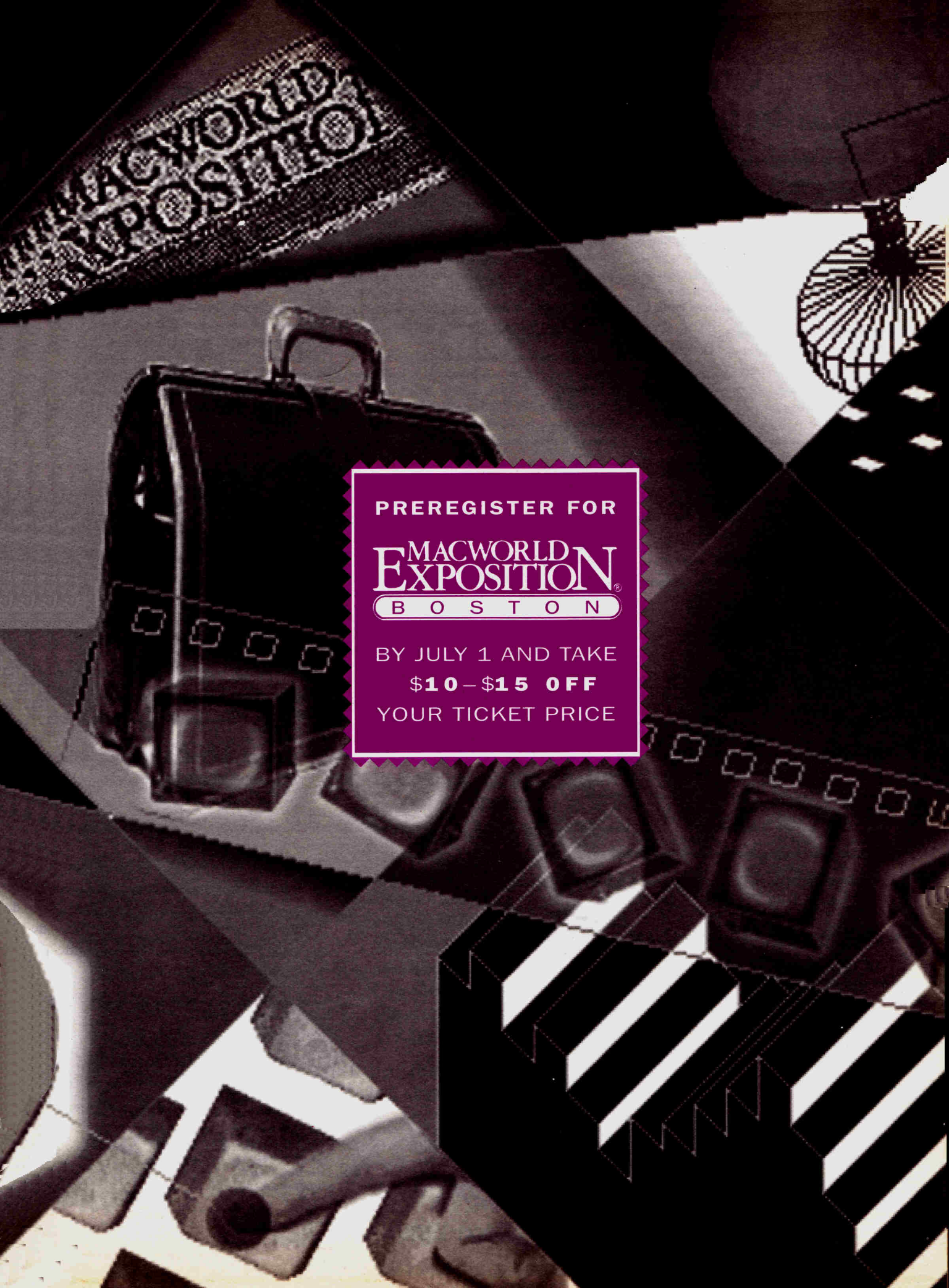
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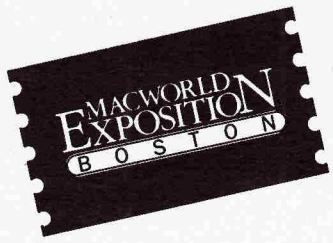


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19. ☐ Network manager
20. ☐ Programmer/analyst
21. ☐ Engineer/research & development
22. ☐ Consultant
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26. ☐ Editor/writer
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39. ☐ Macintosh LC
40. ☐ Macintosh IIsi
41. ☐ Macintosh IIci
42. ☐ Macintosh IIfx
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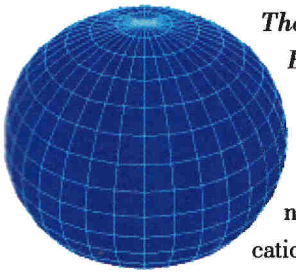

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# SHAREWARE

## Bargains You've Never Dreamed Of

**Picture this: You decide to visit what you think is a typical software store. As you enter, you see aisle upon aisle of new software for the Apple II, IIGS, and Macintosh. You quickly gather up the latest utilities, games, educational and productivity applications, fonts, and clip art. When you reach the counter, you realize you've picked up more than 100 "must have" programs. "What's this going to cost me?" you think to yourself. It's too late to turn back now. Then you notice that for some reason the salesperson is dividing your software into two large stacks. When he finishes adding up your purchases, you're pleasantly surprised to see that you're paying only $3 to $5 for each program. The salesperson explains that the store charges only to recoup expenses for disk duplication. He goes on to tell you that all software in the first stack is free; software in the second stack is yours to try for a few weeks. If you like the software, he says, just send a check to the author of the program. You walk out of the store confused. Free software? Disks that cost $5? Buying on the honor system? Then you gaze up at the sign and see that this isn't a typical computer store at all — it's the Shareware Solutions Software Supermarket.**

If this scenario sounds implausible, welcome to the wonderful world of shareware and freeware. Thousands of high-quality programs are distributed this way. Shareware and freeware represent some of the best software bargains available — viable alternatives to software you buy in a computer store or through the mail. Programmers who have no financial backing or interest in marketing release their products in this try-before-you-buy fashion. If you like the stuff, you must send the specified fee to the author. (The programs are copyrighted.) After paying the shareware fee, you're entitled to upgrades and technical support.

The Shareware Solutions Software Supermarket is only mythical, of course, so savvy shoppers have to be a bit more resourceful tracking down bargains. In general, you have three alternatives for finding shareware: user groups, on-line services, and mail-order catalogues.

### USING USER GROUPS

Today more than 1300 Apple user groups exist, and virtually all of them maintain a large library of low-cost software. Chances are there's an Apple computer club near you. You can find out by calling Apple's **User Group Locator** service at (800) 538-9696, extension 500.

Joining your local user group is generally the least-expensive way to obtain public-domain or shareware

By JOE KOHN and LARRY WOODARD

software. Some user groups will let you copy software freely if you supply the disks. Others may charge a few dollars to cover expenses, with the proceeds typically going toward the group's operating expenses. Many clubs also operate electronic bulletin-board systems (BBSes) to which you can connect if you own a modem and telecommunications software, and most maintain an on-line electronic library, so that you can transfer files from the user group's computer system to your machine by a procedure called *downloading*. It's the quickest way to acquire public-domain or shareware software; you can download a relatively small file in a matter of minutes, and a full 800K disk usually takes less than an hour.

What do you do if you don't own a modem and there's no local Apple user group? No problem — a number of Apple clubs cater to people in rural or remote locations. Some of the larger organizations are the **Boston Computer Society** and **Washington Apple Pi**, with separate special-interest groups (*SIGs*) for Apple II and Macintosh users; the **National AppleWorks User Group** (NAUG) and the **Big Red Computer Club** (BRCC), geared specifically toward the Apple II; and the **Berkeley Macintosh User Group** (BMUG) and **New York Macintosh User Group** (NYMUG).

## MODEM MADNESS

Commercial on-line services, such as **America Online**, **GEnie**, and **CompuServe**, maintain huge areas for information exchange, called *forums* or *roundtables*, devoted to the Apple II and the Mac. In addition to providing subscribers with features such as up-to-the-minute news and the ability to make airline reservations from the comfort of your own computer keyboard, these areas are also devoted to sharing information and software among members. All three of these international networks let members discuss computer-related topics within the message system, access direct technical support from third-party hardware and software companies, and browse through on-line electronic libraries. The size of these collections is enormous — some contain up to 10,000 files available for downloading.

If there's an Apple-oriented BBS in your area, you'll avoid the expense of long-distance dialing. If you don't have local access to a free BBS, you can still benefit from on-line software libraries without incurring outrageous long-distance charges. The nation is crisscrossed by several long-distance telephone systems designed to be accessed only by computers equipped with modems. Two such systems are **Tymnet** and **Telenet**. You pay long-distance charges only for the call to the nearest city hosting the Tymnet or Telenet number; if you have such a service in your own town or city, you don't pay long-distance fees at all, although you must still pay access charges for the on-line services to which the system connects you. (Tymnet and Telenet work invisibly: The phone number the on-line service assigns you includes the Tymnet or Telenet hookup.) So although using on-line networks is the quickest way to get software, it's also among the more expensive, owing to membership and connect-time fees.

## MADE TO ORDER

Still other sources of quality public-domain and shareware programs are mail-order houses specializing in this type of software. Because most shareware authors state explicitly that no one can sell their software in the traditional sense, firms such as the **Public Domain Exchange** (Apple II and Mac), **The Diskette Gazette Library** (Mac only), **EduCorp** (Mac only), **Christella Enterprises** (Apple II only), and **Computer Budget Shopper** (Apple II only) charge only a small disk-duplication fee. Because many of these companies publish attractive catalogues, pay to advertise, and provide technical-support phone lines, they do ask a little more than nonprofit user groups, but not much more.

If your appetite for public-domain and shareware software borders on the insatiable, you'll be pleased to know that the same compact-disc technology that brought us digital-quality music has been adopted by the computer industry. (See "CD-ROM Comes of Age," May 1991, p. 44.) A CD can store more than 500 megabytes of software: That's the equivalent of 625 3.5-inch disks or 3500 5.25-inch disks on a single CD.

At the 1990 National Apple User Group Convention, two program-packed CDs were offered for $80 each — one for the Apple II, the other for the Mac. Called **GEM** (*Generous Efforts of Many*), these two discs are packed with thousands of public-domain and shareware applications, AppleWorks templates and HyperStudio stacks (II only), fonts, graphics, clip art, animations, utilities, and demos. The Apple II GEM CD is one of only two CDs available for that machine. You'll need a CD player with a SCSI connection and an Apple II SCSI interface card to access this version. In addition, the large Mac user groups — NYMUG, BMUG, and BCS — have all produced CDs. In fact, the discs have become so popular that BCS and BMUG release yearly updates. To give you an idea of just how comprehensive these discs are, the BCS CD contains every version of every program ever entered into the BCS/Mac library. It comes with a HyperCard "front end" to make searching relatively simple. The only caveat is that CDs are notoriously slow at data retrieval. But when you can get thousands of programs for pennies apiece, who cares?

Several companies specialize in producing Mac CDs. Among them is **Wayzata Technology**, which is now distributing the GEM discs for $119 each and has compiled **CD Fun House**, a $65 disc with more than 300 games. **EduCorp** is also prominent in this field; it produces a $59.95 disc filled with HyperCard stacks and a CD simply named **5.0**, containing more than 11,000 files of games, HyperCard stacks, graphics, clip art, and applications.

## PAY THE FIDDLER

Shareware is a method of distribution unique to the software industry. What's great about shareware is that you don't get stuck paying for software that's not good or useful to you. To whet your appetite, we've put together a listing of some of the best public-domain and shareware programs for the Apple IIe/c, the IIGS, and the Mac. The information is designed to acquaint you with the kinds of products available. It's by no means a complete survey; it's merely an overview.

Contact your local user group, buy a modem, or send away for a catalogue from one of the mail-order public-domain houses. Chances are good you'll find what you're looking for.

# Apple IIe/IIc

## MACRO LIBRARY INTEGRATOR

Developed by Ira Lieberman, Macro Library Integrator (MLI) is a complete set of nearly 120 shortcuts for use with AppleWorks 3.0 and Beagle Bros' TimeOut UltraMacros 3.1. Included are macros to control cursor movement, document format, find and replace functions, text highlighting, deletion and restoration, printing, TimeOut SuperFonts features, and subroutines. Complete documentation is included with the files, and each macro has a purpose and comment area, describing the shortcut and how to use it.

## APPLEWORKS PAYROLL CALCULATOR

Developed by F. Dean Baird, the spreadsheet template files on the double-sided AppleWorks Payroll Calculator (APC) disk let you compute and post recurring payroll expenses for a small business (up to 25 employees). Functions include gross earnings, FICA (Social Security) taxes, FIT (federal income tax) withholding, two user-defined withholding amounts (deductions 3 and 4), total payroll expense per period (gross earnings plus employer FICA), and FTD (federal tax deposit) coupon amount (FICA multiplied by 2, plus FIT). A sample payroll file and instructions come with the program. The author requests a $25 shareware fee if you use APC in a business setting. If you use it at home or in the classroom, the templates are freeware. AppleWorks 3.0 is required.

## APPLEWORKS CHECKWORKS

The spreadsheet templates on the two-sided AppleWorks CheckWorks disk are designed for version 3.0 and UltraMacros 3.1. It's a complete check-printing and -management system that works entirely within AppleWorks. The program assumes little or no knowledge of UltraMacros, and contains detailed step-by-step instructions on setting up the system, compiling the macros, and creating and working with task files. The flip side even includes an annotated set of macros, with every line of instructions described and illustrated. The author, Dan Crutcher, requests a $10 shareware registration fee.

## SCHOLASTIC PRACTICE

Scholastic Practice, an innovative shareware educational program (no set fee specified), was written by Kyle Hasselbacher, a high-school student, for use by other students. It provides a learning environment for more than a dozen subject areas, including literature, biology, history, government, chemistry, grammar, geometry, earth science, computer science, physics, and math, plus a miscellaneous area containing questions in art, religion, and geography. A total of 1420 questions are stored on disk, loaded in groups of 12; each time you run the program, the questions appear in a different, random order. If your answer is incorrect, the software displays the right response. The program keeps track of correct and incorrect answers, and supplies a percentage at the conclusion of each session.

## YO YO DUCK

Yo Yo Duck, by Michael Coffey, is a $5 shareware program that every Apple II user should have (although you'll hope you never need it): It provides a number of diagnostic tests to locate your system's hardware problems, including monitor, disk drives, printer, joystick, speaker, keyboard, RAM and ROM, and RAM-expansion cards. Detailed instructions and a troubleshooting guide come with the software.

## DB MASTER 5.0

For many years, DB Master 5.0, by Barney Stone of Stone Edge Technology, was a commercial program that many users considered the best and most powerful database-management system available for the Apple II series. It's now a $45 shareware program. A 58-page introductory tutorial is included on disk to help you get started creating your personalized database record-keeping system. Each DB Master database file you create can be up to 10 megabytes in size and can span numerous disks, overcoming many of the limitations imposed by other database systems. DB Master allows for maximum flexibility in its report-generation module, so that you can present information in any number of ways. DB Master requires a 128K enhanced IIe, IIc, IIc Plus, or IIGS with two 5.25-inch drives, a single 3.5-inch drive, or a hard disk. If you've outgrown the AppleWorks database module, or simply want the most powerful flat-file database system available for the Apple II, DB Master will meet all your requirements.

## COMMAND.COM

Do you use an IBM at work and wish you knew the Apple II as well as you do MS-DOS? Are you interested in learning about MS-DOS, but don't want to purchase an IBM or compatible? If you answered yes to either question, take a look at Command.Com, a $45 shareware program by David Sugar and Les Kay. Command.Com is an MS-DOS work-alike environment that insulates users from the ProDOS interface, and replaces it with a shell environment that works just like MS-DOS. With extensive on-line help readily available, Command.Com will be an MS-DOS education for some users. With more than 100 utilities included, those already familiar with MS-DOS will have some powerful resources at their fingertips. For those of you who telecommunicate, the included Xterm terminal program will provide you with lots of features not commonly found in other Apple II applications of that type. Although MS-DOS may not be the most user-friendly operating system, it's the one most widely used, and Command.Com will teach you all about it.

## SUNRAYCER SERIES

Since 1987, an annual "Solar Challenge" auto race has captured the world's imagination, as all cars entered in the race are 100 percent powered by the rays of the sun. Each year, General Motors enters its sleek SunRaycer, and

to commemorate the annual event, the company sponsored the development of this three-disk series that teaches you all about solar energy and the harnessing of its power to fuel automobiles. Using a combination of interactive text, music, animation, and simulations, the SunRaycer series is among the best public-domain educational programs in existence.

### NEWTON'S APPLE

Developed in association with the long-running PBS series of the same name, Newton's Apple is a series of educational programs that use real-world examples to teach common scientific principles. Specifically geared toward elementary-school students, Newton's Apple lets kids learn about compression and tension, for example, by studying how bridges are built. Other modules cover cocaine and the dangers of drug abuse, probability, tooth decay and dental hygiene, and neon lighting. Available on five double-sided 5.25-inch disks or a single 3.5-inch disk, the Newton's Apple series is a wonderful example of how computers can enhance classroom learning.

### FINANCIAL WIZARD

Financial Wizard, by Brian Winn, is a $20 shareware program that helps you figure amortization, depreciation, deposits, interest, investments, and loans. Each module can perform up to four different financial analyses. Financial Wizard operates in some ways like a graphics-oriented spreadsheet; you enter variables and figures, and the program prints either summary or detailed reports and tables.

### UTILITIES FROM KARL BUNKER

Karl Bunker's freeware programs may have funny names, but the programs themselves are no laughing matter:

***Sneeze** is a sophisticated ProDOS-based program launcher, letting you navigate easily through disks, directories, and subdirectories of Applesoft BASIC programs, system files, and GS/OS applications. It serves as a text-file reader, and can display on screen or print any ASCII file or AppleWorks word-processing document.

*Many authors use **Dogpaw**, a program for displaying and or printing text files, to present the on-screen documentation you see when you first run a public-domain disk. It works with either the 40- or 80-column screen and lets you page forward and backward. A word-search option is also included.

### IIGIF

The Graphic Interchange Format (GIF) standard was developed by CompuServe to let people with different computer types use the same graphics. Although there are no 8-bit Apple II programs that convert hi-res or double-hi-res images to GIF format, IIGIF, a freeware program from Jason Harper, lets Apple II users decode, view, and save GIF graphics created on other computers, including Macs, Amigas, IBM PCs, and other incompatible systems.

### AGATE

Agate, from Tony Marques, is a freeware program that lets Apple II users view double-hi-res animated ANSI graphics on line. It's not a full-featured terminal program; add it to your collection only if you call BBSes that operate on MS-DOS computer systems. If you do, Agate will double your pleasure. The program requires an enhanced 128K IIe, IIc, IIc Plus, or IIGS and a Hayes-compatible modem.

### SHRINKIT

At the December 1990 AppleFest in Long Beach, California, Apple Computer instituted the first annual Apple II Achievement Awards, and chose Andy Nicholas as the recipient of the prize for Best Shareware Program of the year for his freeware utility ShrinkIt. Since its release, Shrink It has become the most widely used file-compression program available, and is now the standard in its field for the Apple II. File compression is most useful in telecommunications, as it lets you transfer files from computer to computer in smaller form — down to 50 percent of their original size — therefore saving time. ShrinkIt can even decompress files created with some of the popular compression programs on the market for other computer systems, making it possible to download text files generated on incompatible machines. It's also a convenient method of storing little-used programs to disk. Separate versions exist for II Plus, IIe/IIc, and IIGS computers.

### SOUTH PACIFIC QUEST

South Pacific Quest is a fast-action, joystick-controlled freeware arcade game from Peter Ward. The scenario pits you against the evil Futz empire on a desert island in the South Pacific. Your goal is simple: Take over all four bases on the island, capture the flags, and eject the intruders. It's a cross between Super Mario Brothers and Lode Runner — you'll be running up and down ladders in hot pursuit of the Futzers, and ducking their deadly fireballs and other instruments of mayhem. It doesn't take much to get killed off, so you're sure to come back for more and more pleasurable frustration month after month.

### APPLE CONFERENCE TERMINAL

If you're thinking of purchasing a modem and subscribing to one of the on-line information networks, check out Apple Conference Terminal (ACT), a full-featured freeware telecommunications program by Bob Garth. ACT uses standard Xmodem and Ymodem protocols to transfer files, but also has a number of features not included in even some of the more expensive programs available commercially. Although you can call local BBSes via ACT, the program excels when you use it to connect to large networks running on mainframe computers, such as GEnie. A popular feature of large multi-user systems such as GEnie is the "chat," or conferencing (or "CB"), function: People from around the country can meet in a particular on-line area and hold the equivalent of a conference call. Whatever you type on your keyboard is seen by everyone in attendance, and vice versa. ACT has a conference module built in. In addition, a game module lets you play long-distance chess and reversi in colorful double-hi-res graphics screens with others who also use ACT. ACT is in a class by itself.

### PROTREE ELITE

If the idea of public-domain and shareware programs excites you, you may want to consider setting up a BBS of your own. Thanks again to Bob Garth, you can now do just that — elegantly — with his ProTree Elite freeware BBS program. It's flexible, and includes built-in support for on-line games. It supports protocol uploads and downloads, provides all users with electronic mailboxes, and sets up numerous message sections. Once you've established your own Elite BBS system, you can get technical support from Bob Garth via his own ProTree Roundtable on GEnie, accessible through the A2 Roundtable.

# Apple IIGS

## ANISHOW

Anishow is a freeware gem from Jason Harper, the author of the now-commercial GS program SuperConvert. Anishow displays animation files created with Mediagenic's Paintworks Plus or Paintworks Gold. A number of dazzling public-domain animation files are available, including an Escher waterfall flowing into infinity, a *Star Trek* clip showing the *Enterprise* warping out of orbit, and a file called *Chasers*, which shows two paper airplanes flying through an ancient Greek temple.

## GREENSTONE GAMES

The name Brian Greenstone is synonymous with high-quality shareware games for the Apple IIGS. Greenstone, author of the commercially available hit game Xenocide, offers a whole series of $5 and $10 shareware games, and every one of them is fantastic:

***Grackle** gives you amusing shoot-'em-up arcade fun, in which your goal is to drop attacking birds before they drop on you.

***Copy Killer**s offers fast action within a tight joystick-controlled maze game.

***Quadronome** is a three-dimensional one- or two-player game that's similar to racquetball.

***Senseless Violence I** is a variation of the old classic Frogger.

***Senseless Violence II** gives you outer-space navigation on your own small screen.

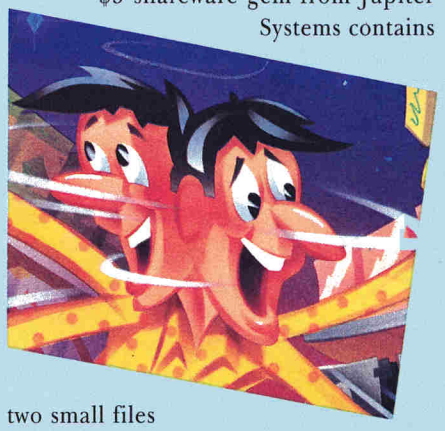
***Cosmocade** is two games in one: **Naxos**, similar to those old-time shooting galleries found at amusement parks, and **Journey to Calibus**, sort of a top-down-view Nintendo shoot-'em-up.

## CO-PILOT

If you're a member of CompuServe or GEnie, you can save a lot of time and money with Ken Gluckman's $25 shareware program Co-Pilot. As a "front end" for the commercially available telecommunications programs Talk Is Cheap and Point-to-Point, Co-Pilot serves as a super-hi-res, mouse-driven, off-line message processor. Co-Pilot lets you log on to either service, retrieve electronic mail and messages from forums, download software programs, and then log off, all in the shortest time possible. You read all messages off line, when you're no longer connected to the network and no longer paying connect charges.

## FINDER VIEW

Wouldn't it be nice to just double-click on a GS graphic and see it displayed? With Finder View, that's exactly what happens. This $5 shareware gem from Jupiter Systems contains



two small files — one that goes into your Icon folder, and one you tuck into your System folder. Do away with the bother of loading graphics into a paint program just to view them.

## FIND FILE

If you use a high-capacity hard-disk drive, chances are you're always trying to remember exactly where you stored a particular file or program. With Find File, a freeware new desk accessory from Stephen Chick, you'll never have to search again. Just access *Find File* from the *Apple* pull-down menu, and enter a full or partial filename; Find File will display, in a matter of seconds, every file on your hard drive containing that sequence. Indispensable!

## MILESTONES 2000

Dr. Ken Franklin has devised a wonderful way for you to play a fabulous, highly addicting GS game while helping to solve one of society's most pressing problems. Unlike shareware, the $15 "ReliefWare" fee for Milestones 2000 is donated to a nonprofit organization working to feed the hungry and care for the homeless. Milestones is based on the classic French card game Milles Borne. It's you versus the computer in a mouse-driven car race. The first to drive 2000 kilometers wins. It only sounds easy — the computer throws obstacle after obstacle in your path, including flat tires, speed limits, and empty gas tanks. Packed with more than 500K of amusing digitized sounds, Milestones is one of the finest GS games available.

## PHOTONIX

Written by the French Free Tools Association (FTA), Photonix 1.46 is a fast disk-copy program that all GS owners should have in their software collections. For a $20 shareware fee, it comes complete with animation and rock 'n' roll music. Photonix copies 3.5-inch floppies in one pass, so disk swapping becomes a thing of the past. One other extra is that if you're copying from a disk with an incorrect interleave ratio, Photonix is the only program available that will change the interleave while copying to the target disk. Previously, FTA's claims to fame were its programs Nucleus and Modulae, dazzling demonstrations of the best the GS has to offer.

## SHOWPIC

If you like GS graphics, ShowPic is an indispensable freeware new desk accessory. Written originally by Bruce (Lunatic) Mendez, recent versions have been enhanced by Dave Leffler with the help of Jonah Stich. ShowPic lets you view any type of super-hi-res GS graphic, and save it in a couple of different formats. In addition to displaying standard GS graphics files created with paint programs, ShowPic also works with Print Shop GS graphics, GIF graphics, and a special type of graphic containing 3200 different colors. You can convert color graphics to gray scale, 320-mode images to 640 mode, and Print Shop GS graphics to 640-mode clip art for HyperCard GS, HyperStudio, or AppleWorks GS.

## UTILITYWORKS

Written by George Wilde, UtilityWorks is a $20 shareware program that includes just about every utility a GS owner could want. It displays any one of a variety of file types, from ASCII text to AppleWorks word processing to Paintworks Gold animation to super-hi-res graphics to Applesoft BASIC. A built-in text editor lets you work on AppleWorks or other

word-processing documents. Utility Works also displays all fonts in your system, and lets you load desk accessories "on the fly." It catalogs any directory and creates a database of your files. It backs up and restores your hard-disk drive. It purges your computer's RAM in low-memory situations and includes a find function to locate files stored in subdirectories.

### GRAPHICS AND SOUND FROM PETER BRINKLEY

Peter Brinkley is obviously fascinated by scientific discovery and by the GS' ability to produce beautiful graphics and music. He has produced a series of stunning freeware programs that take advantage of the machine's most prominent attributes:

***MatheMusic** simulates two large pendulums swinging in unique orbits, with accompanying musical interpretation of the constantly changing kinetic images.

***PlasmaLab** includes five fractal-like cellular-automata generation programs that produce graphics you can stare at in wonder for hours.

***PhotoLife** produces constantly changing graphics displays with any GS image you designate as background.

***Powerplay** contains four games: **Four Play** and **Gridlock**, two Tetris imitations; **Pig N Bull**, a number-guessing challenge; and **Tron**, an arcade strategy theme that has you trying to box in your opponent.

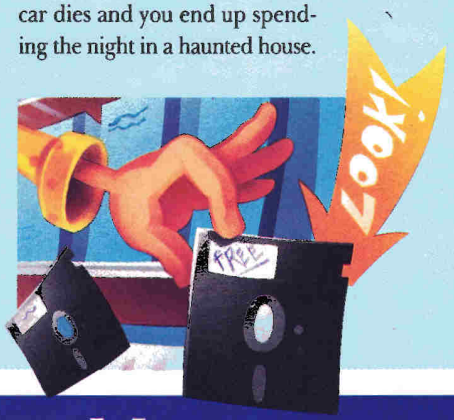
### TRAVELWARE

Created by Duane Gossett, a fifth-grade social-studies teacher in Tennessee, Travelware is a series of first-rate HyperStudio stacks:

***Colonial Experience** is a simulated visit to Williamsburg, capital of Virginia from 1699 to 1780. Complete with maps and scanned photographs, Gossett's two-disk tour of Williamsburg is so thorough it's the next best thing to being there. Colonial-era music is included.

***A Capital Experience** is a simulated trip to Washington, with a few twists and turns along the way just for fun. Actual photographs, imported with a Quickie hand-held scanner, show you the Capitol, the Washington Monument, the Lincoln Monument, and many other popular tourist attractions. Detailed maps are included.

***Mr. Jefferson's Country** is a simulated tour of Monticello, the third president's Virginia estate. Humorous touches enliven this stack: Before you ever arrive at Monticello, for instance, your car dies and you end up spending the night in a haunted house.




*The Civil War contains a detailed summary of the causes of the War Between the States and introduces you to the political and military leaders on both sides. You'll get a glimpse into what life was like during that period, and learn about major battles, the end of the war, and the assassination of Lincoln. Scanned photographs and digitized battle sounds are included.

All four programs are distributed by the Big Red Computer Club. The tours of Washington and Williamsburg are freeware; the trip to Monticello and the Civil War stack carry a shareware fee of $5 each. All stacks come with HyperStudio's run-time module.

### WRITE IT

Write It, from Apple employee Chris Haun, is an effective, yet simple, word-processor new desk accessory. It's shareware, yet no specified fee is suggested. This is real honor-system software, as you pay the author what you think the program is worth.

You can use Write It within GS/OS applications such as AppleWorks GS, HyperCard GS, and HyperStudio. Although nowhere near as full-featured as a standard stand-alone word processor, Write It is perfect for reading documentation for shareware or freeware programs. It excels particularly when you want to cut text from one document and paste it into another, as it supports and works with the standard GS clipboard.

## MACINTOSH

### BILLIARD PARLOUR

Freeware from R. Crandall, Billiard Parlour puts the game right on your Mac screen, with snooker, 8/9 ball, and many more variations. With great graphics and lots of options, it'll challenge even the best pool sharks out there!

### BIPLANE

BiPlane 1.02 is a full-featured $40 shareware spreadsheet-modeling program from Alan Porter, with the ability to execute spreadsheets and cut and paste the results instantly into your word processor or graphics product. BiPlane worksheets are compatible with those developed with other spreadsheet programs and saved in SYLK (Mac text-file) format.

### COMPACT PRO

With the right utility you can reduce the sizes of many of your files by compressing the data within them, and that's just what Compact Pro, a $25 shareware utility from Bill Goodman, does. Making files smaller can free up valuable space on your hard disk and reduce the number of floppies you'll need for backups. If you transfer files via modem, you can save time and money by compressing them first.

### COMPUGRAPH

CompuGraph, a $40 shareware program from Klex Software, is a three-dimensional conceptual-design system — an electronic modeling system sophisticated enough for engineers and designers to use to illustrate complex wireframe images, yet simple and versatile enough for artists to use to manipulate images into masterpieces. The program provides multidimensional spatial design features that simulate those found on industry's high-end professional graphics systems — among them, dynamic rotation and perspective in real time, animation capability, floating-point accuracy, and compatibility with all Mac applications that can read MacPaint or PICT files.

### CONVERSION DA

Version 1.5.2 of the freeware desk accessory Conversion DA from Rick Johnson calculates equivalents for various English and metric

units, including length, weight, temperature, dry and liquid measures, fractions and decimals, numerics, angles, model-railroad scales, area, and more.

### DISINFECTANT

Disinfectant, a public-domain utility by John Norstad and a supporting cast of dozens, is the one program all Mac owners should have. It's quite possibly the best virus-detection and -eradication application available for the Macintosh at any price — and it's free! This beauty does a very thorough search-and-destroy of all ten known Mac viruses.

### FEDIT

Fedit Plus, a commercial program that lets you inspect and edit raw data within a file, evolved from Fedit 3.1, a shareware offering from John Mitchell. It's a disk and file editor that will let you take a look at the inner workings of a computer program. If the hacker spirit lives within you, Fedit's for you.

### FILEMASTER

FileMaster is one utility the power user is lost without. A $25 shareware gem from Alexander Falk, it's a desk-accessory version of Apple's ResEdit, letting you modify the attributes of a file without launching the larger program. It's great for changing file types, displaying files, searching for and deleting files, and modifying Finder information and flags.

### FLOPPY FIXER

Floppy Fixer 1.0 is a utility for recovering files from damaged Mac disks. It runs on a Mac 512, 512E, Plus, SE, or II, and requires at least two disk drives (one of which can be a hard disk). The author, Frank Beatrous, requests that you donate the $20 shareware fee directly to the Lupus Foundation of America.

### GIF CONVERTER

GIF Converter 2.2d3 is a marvelous $40 shareware graphics package from Kevin A. Mitchell. Thanks to this handy utility, Mac users can access graphics created on Apple IIGS, Amiga, IBM, and other incompatible computer systems.

### IMAGE

Image 1.33, a freeware utility by Wayne Rasband for the Mac II family (8-bit display required), lets you edit digitizations, including gray-scale scans, before output on a laser printer. It offers many of the same capabilities you'll find in expensive graphics applications.

### INIT CDEV

Init Cdev 3.0, a freeware INIT Manager by John Rotenstein, comes to the rescue — now you can keep a whole lot of INIT and cdev files in your System folder without having to remove them whenever their services aren't required.

### McSINK

McSink, a $45 word-processor desk accessory from Dave McWherter, got its name from the proverbial kitchen sink: It includes almost every feature you can think of. You can access it from the Finder or within an application program; it includes simultaneous open windows plus utilities for cleaning up text files created on other computers, adding or stripping linefeeds, and many more operations.

### MULTISPOOL

Multispool, a freeware utility by Guiseppe Carnevale, lets you print a document and work on your computer at the same time. You can also configure the spooling parameters: size, priorities, single- or multi-user, and network-friendly.

### STUFFIT CLASSIC

StuffIt, a $25 shareware utility program by Raymond Lau, is the standard for Mac archiving and compression. Compact Pro may be faster and more efficient, but StuffIt was the first Mac compression utility to gain wide acceptance and is used to compress virtually every file on every Mac BBS or network.

### SYSTEM ERRORS DA

System Errors DA, a freeware desk accessory by Bill Steinberg, helps you make sense of the ID number when your system crashes. It's handy for tracking down those nagging system problems that plague every user occasionally.

### ZTERM

ZTerm is a full-featured $30 shareware telecommunications program by Dave Alverson. It's elegant and easy to use, yet powerful. ZTerm supports the popular Xmodem, Ymodem, and Zmodem protocol transfers, and offers VT100 terminal emulation and a scrollback buffer for rereading previous material. ❑

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WY 82007

**Christella Enterprises**
P.O. Box 483
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**Diskette Gazette Library**
International Datawares
2278 Trade Zone Blvd.
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CA 95131
(408) 262-6660

**EduCorp Computer Services**
7434 Trade St.
San Diego, CA
92121-2410
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94709-1496
(415) 549-2684
$40/year

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Norfolk, NE 68701
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One Kendall Square
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MA 02139
(617) 252-0600
$39/year,
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$28/year
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**National AppleWorks User Group**
P.O. Box 87453
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**User Group Locator**
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(800) 538-9696
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MD 20814
(301) 654-8060
$39 new,
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# SURVIVING THE CRASH

**Cure for the hard-disk blues: An ounce of prevention plus some simple repair strategies will keep your data in good working order.**

**By Gary R. Morrison and Walker Archer**

There's an old computer adage that goes, "There are two kinds of hard-drive users: those who have experienced a disk crash, and those who are about to experience a disk crash." Too fatalistic a view, to be sure, but it does point up the importance of being prepared. After all, hard drives are mechanical objects and can fail at the most inconvenient moment.

Because your hard drive's innards are put together in a "clean room" environment and sealed to avoid contamination by dust, there's virtually no physical or electronic maintenance you can perform to keep your drive running. You can, however, practice some preventive medicine on your data — and, with the right utility software, maybe even resuscitate a file that's been corrupted by a hard drive gone astray.

## BACK UP A MOMENT

You've heard it before: Whether you're working with a hard drive or floppies, if your data's important to you, save it again on another disk. The only safe way to use a disk drive — particularly a hard-disk drive, with which you stand to lose megabytes' worth of information — is to "back it up" (copy everything to a safe place) on a regular basis.

Just how often is that? Ask yourself how many days of work you can afford to lose. Some people copy every file every time they open it; others use special backup utilities once a day to copy a whole group of files at the same time; others need to do it just once a week. If you use your computer primarily for playing games, you might want to back up only on a monthly basis, because most of this kind of information would still exist on the original disks that came in the package. If you use your hard drive in a small business that generates a large amount of important data, however, you might want to back up your orders and books even twice a day.

It's also a good idea to keep at least two sets of disks as backups. A tradition among mainframe users is to keep at least three copies, called "son," "father," and "grandfather" backups according



Illustration * Chris Spollen

to their ages. Why so many? If your hard drive crashes while you're copying over an old backup file, you may be left with no backup at all — some or all of the backup data would be gone along with the original. If you keep at least two separate sets of backups and rotate the sets of disks you use, you'll always have at least one good set of backups. (Just keep track of which set contains the most up-to-date information.)

If copying your data each time you open a file is inconvenient, get a good backup utility program and learn how to use it. (Examples include special modules in **Copy II Plus**, **EasyDrive**, and **ProSel** for the Apple II, **TimeOut FileMaster** for the Apple II running AppleWorks, and **Copy II Mac**, **Fastback II**, **HFS Backup**, **Redux**, and **Retrospect** for the Mac.) But know what you're buying: There are two primary backup strategies — *image* and *incremental* — and the difference is fundamental.

Image-backup programs simply copy every hard-disk block containing data, no matter what file it belongs to. It saves an entire picture of the hard drive fast, but in a format that's completely unusable from the backup medium — floppy disks or tape. When you "restore" the backup, the image program puts the blocks back on the hard disk in exactly the same order in which it found them.

An incremental-backup program copies files one at a time, a slower method. Although such programs can perform "full" backups — copy all files on your drive — you'll more likely use it to copy only the files that have changed since the last backup. And how does the backup program know which ones to copy? Your computer's operating system sets a *backup flag* — an extra bit of information — for each file whenever it's written to disk; a backup program scans through your hard drive's directory in seach of files with their flags turned on. After the backup is finished, the program turns the flag off in the directory.

## WHEN GOOD DRIVES GO BAD

Short of crashing, what else can go wrong with your hard drive? Sometimes the damage isn't physical destruction of your data — it may get scrambled instead. Special utilities called *file-recovery* programs can often restore order to corrupted data and "bad blocks" — areas of the disk that won't accept data your application program tries to save to them or areas from which you can't retrieve your data when you want it.

Running a file-recovery program is a little risky in itself. Because of what it has to do to fulfill its function — altering information on disk one bit at a time, when it's easy to make inadvertent changes — it may end up jumbling your data more or even destroying it. In most cases, though, you'll retrieve your information as intended. It is a good idea to run one of these programs in test mode occasionally just to make sure everything is operating smoothly on your drive.

Examples of file-recovery utilities include **RepairWorks** and **Change-a-File** (for AppleWorks word-processor and database files) and modules within **ProSel** and **Copy II Plus** for the Apple II; if you own a Mac, check out **SUM II**, **Complete Undelete**, **1stAid Kit**, or **Sector Collector**, which attempts to head at least part of the problem off at the pass by rounding up your disk's questionable areas into a file of their own so that your application won't be able to access them for storage.

## GET IT TOGETHER

There's another kind of wear and tear you may run into when you've had your hard drive for a while. After considerable use, the files can become *fragmented*. It's not dangerous in terms of loss of data, but it's an example of the second law of thermodynamics at work in an organizational sense: If left to their own devices, most systems will become less and less ordered. Normally, your hard drive stores a file in a series of sequential blocks. As you begin to add data to your disk and delete some of the old material, the new blocks may show up just about anywhere.

Say, for example, that you decide to delete a short letter, which will leave four empty blocks on your disk. (See the accompanying **Figure**.) The next time you save a file, the operating system will use those four blocks and then save the remainder of the new data in the next available blocks; the file is then scattered, or fragmented, across the disk. As you delete and add more files, your disk becomes more and more fragmented, and your drive's performance deteriorates because the heads must be repositioned farther to read all blocks of the file.

You can correct this problem with a type of utility commonly called an *optimizer*. Optimizer programs search through your disk for fragmented files and rearrange them so that each one occupies contiguous blocks. (Examples of optimizer utility programs include special modules within **ProSel** and **EasyDrive** for the Apple II and **DiskExpress II** and **SilverLining** for the Macintosh.)

Because optimizer programs essentially play a "shell game" with the blocks on your disk to obtain their results, you could have a disaster on your hands if the process is interrupted by a power ➪

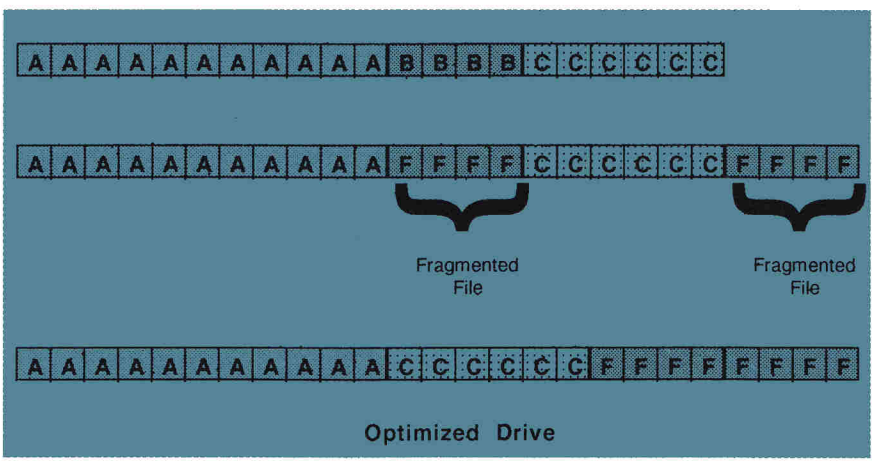


**Figure. Your hard disk saves large files in pieces wherever it finds room to tuck them; an optimizer utility can rearrange those fragments into continuous files.**

outage — so remember to back up your drive before running the utility.

Your hard disk's enhanced performance may be quite impressive, however — well worth the risk involved — and most users need to optimize their drives just three to six times a year.

Here's a tip: Format at least one volume on your drive to hold your application programs, which you alter very rarely and which therefore tend to not fragment; put changeable data into other partitions, so that you'll save time and trouble by optimizing only the volumes that need it.

## LET'S DO LAUNCH

What about day-to-day routine maintenance? Sometimes hard-drive users lose data not because of damage or fragmentation, but because they simply can't find what they're looking for and can't remember where they put it.

As you add more and more files, you'll need to keep track of their organization — to catalog directories, create new subdirectories, map disk structure, resurrect accidentally deleted files, and lock, unlock, and rename files, as well as sort through the drive as you delete old files or copy them to a floppy to prevent cluttering.

You'll find utilities to help you perform such housekeeping chores, along with a booting application — the most basic computer task you need to perform — in programs known as *launchers*.

One of the biggest advantages of having a hard drive is that you don't have to change floppy disks and reboot your computer when you want to switch between applications: If they're on your hard disk, you don't have to insert a program disk for each application you want to start up. But how do you get to that program you want to run? The most convenient way is to use a launcher, also called a *program selector*, *shell*, or *menu system*.

The original ProDOS operating system came complete with its own program launcher of sorts. When a program passed control back to ProDOS, the operating system presented you with two fill-in-the-blank prompts; you typed both the pathname to the application's directory and the filename of the program to execute. This launcher had two distinct problems: The prompts didn't appear the first time you booted — only if you were exiting a program — and you had to remember long, involved pathnames and type them correctly.

With access to 800K floppies and still larger hard drives, a new market sprang up for programs that would let you switch easily between applications — execute a program from a list you create. In the latest version of ProDOS 8 (1.9), for instance, Apple has replaced the old fill-in-the-blank prompts with a text-based launcher, an extension of the old "quit code" that works even if it finds no boot application on disk.

The **ProDOS System Disk** that came with your computer includes the other utilities you'll need for file maintenance (rename, copy, lock, and unlock files, for instance, and work on the entire disk).

In GS/OS and on the Mac, the **Finder** is the launcher portion of the operating system. It uses *icons* (small representative pictures) to indicate the various applica-

## PRODUCT INFORMATION

**Bird's Better Bye**
freeware
available from BBSes
and user groups

**Change-a-File**
AppleWorks Programmers
Association
6531 Lexington Ave.
Los Angeles, CA 90038
(213) 469-9916
$10

**Complete Undelete 1.0**,
$49.95
**1stAid Kit 2.8**, $99.95
**Sector Collector 1.0**,
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1stAid Software
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**Copy II Mac 7.2**
**Copy II Plus v. 9**
Central Point Software
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Beaverton, OR 97006
(503) 690-8090
$39.95 each

**DiskExpress II 2.04**
ALSoft Inc.
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Spring, TX 77383-0927
(713) 353-4090
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**DiskTools Plus 1.03**
Electronic Arts
1820 Gateway Drive
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$59.95

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$40 (8), $89.95 (16)

**Redux 1.62**
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$99

**Retrospect 1.2**
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Berkeley, CA 94709
(415) 849-0293
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**SilverLining 5.22**
La Cie
16285 SW 85th
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Tigard, OR 97224
(503) 684-0143
$99.95

**Squirt**, $8.50 shareware
**Squirt-16**, $20 shareware
Synesis Systems
P.O. Box 1308
Gilbert, AZ 85234

**SUM II 2.0**
Symantec
10201 Torre Ave.
Cupertino, CA 95014
(408) 253-9600
$149.95

**TimeOut FileMaster**
Beagle Bros
6215 Ferris Square
Suite 100
San Diego, CA 92121
(619) 452-5500
$49.95

tions and files on your disk; to execute a program or open a file, just double-click with your mouse. (If you have the Mac's **MultiFinder** option, you can have more than one program open on your desktop at the same time, switching quickly from one to another with a single mouse click.)

Other Finder functions include file transfer, deletion, and a number of other maintenance tasks. The **GS/OS 5.0.4 System** and **System Tools** disks contain extra utilities, as well, such as the *Installer* program that sets up the operating system and its accompanying device drivers on your hard drive, and Apple's *Advanced Disk Utilities*, which erase and initialize your hard drive.

In addition, several commercial packages on the market can substitute for your machine's own launcher, or bypass it by letting you switch applications without returning to that screen first. They offer a variety of interfaces and maintenance utilities; some users enjoy colorful graphics displays, while others prefer the speed of a text interface.

Finding an interface with which you're comfortable is an important part of choosing this type of program, but be sure to check each candidate's range of functions and features, as well.

Combination launcher/ maintenance programs include **Copy II Plus**, **ProSel**, **EasyDrive**, and **JumpStart** for the Apple II and **DiskTop 4.0** and **DiskTools Plus** for the Mac. There's also **TimeOut FileMaster**, which lets you perform various housekeeping tasks without leaving AppleWorks.

On the other side of the fence — program selectors without maintenance modules — you've got **Bird's Better Bye** and **Squirt** for the Apple II and **On Cue** for the Macintosh.

A hard drive is an invaluable investment — if you're willing to learn how to take care of it, it'll pay off in terms of both increased speed and decreased frustration. Like owning a car, however, owning a hard drive means you must perform regular preventive maintenance — change the oil, tune up the engine, so to speak — or you could suffer a breakdown at the worst possible time.

For many computer users, a hard-disk drive is as big a necessity as an automobile. Just don't forget to treat it with as much respect — because if your hard-disk drive crashes at 1 a.m., not even AAA can help. ❑

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## FURTHER READING

**"FileMaster, Graph, QuickSpell,"** Reviews, May 1988, p. 29
**"Simple Solution: EasyDrive 1.5,"** Reviews, April 1989, p. 94
**"Do You Know Where Your Data Are?"** May 1989, p. 54
**"Salvaging Sunken Files,"** Editors' Choice, October 1989, p. 124
**"A Hard Drive Is Good to Find,"** July 1990, p. 42
**"Copy II Plus Version 9,"** Reviews, August 1990, p. 30
**"Family Ties: A Striking Resemblance in System Software,"** February 1991, p. 52
**"AW Tip/Notes from the AppleWorks Programmers Association,"** What's New, March 1991, p. 12
**"AW Enhancements/Notes from the AppleWorks Programmers Association,"** What's New, March 1991, p. 12
**"Hard-Disk Drives Made Easy: Off the Beaten Track,"** March 1991, p. 88
**"Hard-Disk Drives Made Easy: The Wizard of OS,"** April 1991, p. 53
**"Hard-Disk Drives Made Easy: It Pays to Be Organized,"** May 1991, p. 57

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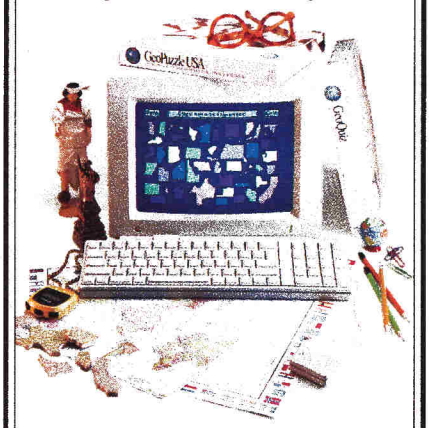


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# ON THE ROAD AGAIN

**For the record, for fun, and for future planning, use this spreadsheet to track vacation expenses.**

**By RUTH K. WITKIN**

ON THE ROAD AGAIN — YEAH, MY spreadsheet and me. You'll think I'm crazy, but I enjoy keeping logs of vacation trips. Scribbling on a spreadsheet makes long lulls between sightseeing stops pleasurable.

The spreadsheet in **Figure 1** is the kind I take with me. Vacation expenses are split into three categories: transportation, living, and entertainment, with a slew of items in each category. I simply jot down numbers and notes on a paper spreadsheet, then enter them into AppleWorks when I return home. This spreadsheet contains lots of fancy stuff that takes time to create, but hang in there. When you're done you'll have something that not only looks good, but is fun and easy to use.

Create a new AppleWorks spreadsheet file named *VACATION*. You should now see the spreadsheet *Review/Add/Change* screen with the cursor in cell A1. Use the following summary to start the spreadsheet.

**Long Lines**. Enter a double line across row 2 in columns C through O: Place the cursor on C2 and type quotation marks. Hold down the equal-sign key until the sign reaches the right edge of H2, and press Right Arrow 12 times to bring the cursor to column O. Now move the cursor back to I2, type quotation marks again, hold down the equal-sign key until the sign reaches the right edge of O2, and press Return.

Leave the cursor on I2 and copy the entire row to the clipboard: Press Open apple-C (OA-C) to start the *Copy* command. Type **T** to select *To clipboard*, hit Return to confirm *Rows*, and hit Return again. Next, copy the row containing the line from the clipboard to row 8: Place the cursor on I8, press OA-C, and type **F** to select *From clipboard*. Place the cursor on I43 (yes, 43 — your row numbers won't match those in **Figure 2** until you enter all long and short lines). Again, press OA-C and type **F**. Do the same with the cursor on I46.

Now enter a line across row 10 in columns C through O: Place the cursor on C10 and type quotation marks. Hold down the minus-sign key until the sign reaches the right edge of H10, and press Right Arrow 12 times to bring the cursor to column O. Move the cursor to I10, type quotation marks again, hold down the minus-sign key until the sign reaches the right edge of O10, and hit Return.

Other rows need the line, so leave the cursor on I10 and copy the entire row to the clipboard: Press OA-C, type **T**, and hit Return twice. Now copy the row containing the line from the clipboard to row 24: Place the cursor on I24. Press OA-C and type **F**. Now place the cursor on I35, press OA-C, and type **F**. Do the same with the cursor on I56.

**Column Width**. Each column is now nine characters wide. Use the Layout command (OA-L), *Columns*, and *Column width* to reduce column A by seven characters (to two characters), reduce column B by eight characters (to one character), increase column C by eight characters (to 17 characters), and increase column O by one character (to ten characters).

**Short Lines**. Enter a short line that separates a list of items from its total: Place the cursor on D22, type quotation marks, press the spacebar once, type seven minus signs, and hit Return. Now copy that line into the columns to the right: Leave the cursor on D22 and press OA-C. Press Return twice, move the cursor to E22, type a period, move the cursor to O22, and hit Return.

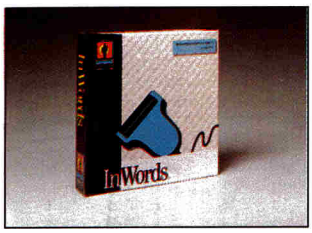
Instead of repeating these steps, copy this row of short lines to the clipboard: Leave the cursor on D22 and press OA-C. Type **T** and hit Return twice. Now copy the row from the clipboard to row 34: Place the cursor on D34. Press OA-C and type **F**. Place the cursor on D45. Again, press OA-C and type **F**. The lines on your spreadsheet should now match the ones in **Figure 2**.

**Recalculation**. To keep things moving at a rapid pace when you enter labels, numbers, and formulas, turn off automatic recalculation: Press OA-V and type **RFM** (for *Recalculate*, *Frequency*, *Manual*). Now press OA-S to store the spreadsheet on disk.

Referring to **Figure 2**, enter all labels in rows 3 through 9 and columns A (vertical category names) and C (category items). Enter the numbers in row 7 only; ignore the others for now. So AppleWorks doesn't think you're entering formulas in row 6, type quotation marks before each date. The label in C9 is *PEOPLE: 4*. You can edit it later to agree with the number of people in your vacation party. Don't bother to press Return after typing each entry; moving the cursor away from the cell serves the same purpose. After you type the last entry hit Return.

You'll soon enter the sample numbers. It can get mighty confusing doing this in the ➪

# Preferred Products, Preferred Prices

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DL/X 2400 *w/MNP-5 & FAX* ..... $239
ReadyLink Communications ..... $59

**Morgan Davis Group**
ModemWorks ..... $49
ProLine BBS *(Apple II BBS)* ..... $165

**ZOOM Modems**
Zoom MX 2400 (ext) ..... $99
Zoom/Modem V.42bis ..... $199
Modem Cables ..... $15

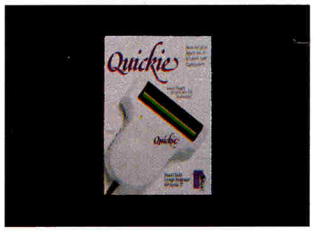
### Accelerators/Co-Processors

TransWarp GS ..... $259
TransWarp *(IIe,II+)* ..... $99
FastMath *(GS,IIe,II+)* ..... $131
PC Transporter 768k *(GS,IIe,II+)* $239
IIGS Installation kit ..... $36
IIe/II+ Installation kit ..... $29
MS-DOS v4.01 ..... $85

**Honeywell**
*New!* Keyboard w/cable *(PCT)* .... $89

**KeyTronics**
*New!* ADB Keyboard *(PCT/GS)* .. $139

**TransDrives**
Combo 5.25" & 3.5" ..... $289
Dual 5.25" ..... $284
Single 5.25" ..... $189
3.5"-720k Add-on drive ..... $99




***Quickie Scanner by Vitesse.***
The Fast, Smooth, uncomplicated hand-held scanner that made InWords possible. Scan true grey, B&W, or text into your IIGS, IIe, or Laser 128. Features include 320/640 mode, landscape & portrait scan, cut/paste, fat bits, resize, rotate, flip, NDA, multiple windows and much more! ..... $199

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**Applied Engineering**
ColorLink RGB *(for RamWorks)* $103

**Digital Vision**
Computer Eyes GS *(color)* ..... $199
Computer Eyes *(B&W)* ..... $108

**HeadStart**
*New!* M1152C Digital Monitor for IIe and/or PCT *(includes cable )* ..... $159

**Leading Technology**
*New!* 1452C Digital Monitor for IIe and/or PCT *(includes cable)* ..... $229

**Magnavox**
CM135 Analog/Digital RGB monitor *(includes digital cable - IIe,GS)* .. $289
IIGS Analog Cable ..... $25

### Accessories

**Applied Engineering**
TimeMaster HO *(GS,IIe,II+)* ..... $77
Serial Pro *(GS,IIe,II+)* ..... $109
Parallel Pro *(GS,IIe,II+)* ..... $77
Buffer Pro 32k ..... $85
Buffer Pro 128k ..... $95
Buffer Pro ..... $109
Sonic Blaster *(GS)* ..... $95
Audio Animator *(GS)* ..... $160
Phasor *(GS,IIe,II+)* ..... $77
Conserver Fan *(GS)* ..... $77
Conserver drive cable ..... $17
IIe/II+ Power Supply ..... $77
IIGS Power Supply ..... $89

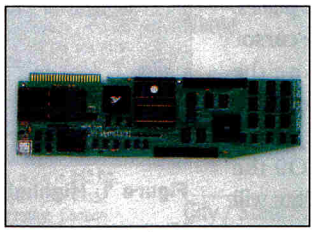
**CH Products**
MACH III joystick ..... $39
MACH IV Plus ..... $69
*Special!* Mirage ADB/Quad ..... $29

**Kensington**
System Saver *(II+,IIe)* ..... $69
System Saver GS ..... $75
Turbo Mouse ADB *(GS,Mac)* .... $124

**Ribbons**
ImageWriter I/II *(black)* ..... $3.50
ImageWriter II *(4-color)* ..... $5.99

**Seiko**
*Closeout!* DataGraph 2001 scheduling system. Includes Seiko watch and ProDOS compatible clock. Originally $189! *(II+,IIe,IIc only)* ..... $39

**Vitesse**
Quickie Scanner *(GS, IIe)* ..... $199



***TransWarp GS by AE.***
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32k Cache upgrade ..... $85

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**Applied Engineering**
Vulcan Hard Drives include controller card and come pre-formatted with the latest system *(specify machine)*.
Vulcan 20meg ..... $499
Vulcan 40meg ..... $639
Vulcan 100meg ..... $1299
*New!* 3.5" 1.6meg *(GS)* ..... $248
3.5" 800k *(GS,IIe,IIc+)* ..... $189
3.5" Controller card *(IIe,II+)* ..... $65
5.25" disk drive *(all Apple IIs)* .... $124
5.25" Controller Card *(IIe,II+)* ..... $55

**AMR**
GS Partner Hard Drives ..... *$Call*

**Apple**
High Speed SCSI *(GS,IIe)* ..... $109

**EMAC**
*Special!* Impact 20meg FAST SCSI Hard Drive – *2 year warranty!* .. $359
w/Apple SCSI ..... $459
*New!* Impact 80 meg SCSI ..... $699
w/ Apple SCSI ..... $799

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**Apple Computer**
*New!* HyperCard GS ..... $89

**Brøderbund**
Bank Street Writer Plus ..... $59
Print Shop ..... $35
Print Shop GS w/G.L. ..... $45
Print Shop Companion ..... $35
Carmen Sandiego Series ..... *$Call*

**Central Point Software**
Copy II+ v9.1 ..... $29

**Claris**
AppleWorks v3.0 ..... $179
AppleWorks GS ..... $219

**Morgan Davis Group**
MD-BASIC ..... $49

**Roger Wagner**
HyperStudio *(GS)* ..... $89

**TimeWorks**
Graph It! *(128k)* ..... $53
Publish It! 3 *(128k)* ..... $77

**WestCode Software**
*New!* InWords *(512k)* ..... $78

**Word Perfect Corp.**
Word Perfect GS ..... $119
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dark, which is what you have when labels at the left disappear a few days into the week and headings at the top disappear a few items into the categories. AppleWorks has a solution: Anchor the labels and headings so that you can roam through the spreadsheet to your heart's content and still have signposts along the way. Here's how.

Place the cursor on D9, press OA-T to start the *Titles* command, and type **B** to select *Both*. Move the cursor to the right. As *Tuesday* appears, you can see that the labels in each row are fixed firmly in place. Move the cursor downward and you can see that the headings are also fixed firmly in place. Referring to **Figure 2** again, enter all numbers. When you finish, return the screen to normal by pressing OA-T and confirming *None*. Press OA-S to save the spreadsheet.

Now format the entries: Leave the cursor where it is and press OA-V to start the *Standard Values* command. Confirm *Value format*, then type **C2** (for *Commas, 2 decimal places*), and hit Return. Next, place the cursor on D7, press OA-L to start the *Layout* command, type **B** (for *Block*), move the cursor to O7, and hit Return. Confirm *Value format*, type **C**, and press Return to confirm *0* for the number of decimal places.

Format the labels next: Place the cursor on C3 and press OA-L, type **B**, move the cursor to C50 and hit Return. Type **L** (for *Label format*), and type **R** (for *Right justify*). Use OA-L to center D9 through O9 the same way. Next, enter the formulas that will perform your calculations. Place the cursor on the cell receiving the formula. Move the cursor to the cell locations shown in the formula and type everything else. When the formula is complete, press Return.

Now move the cursor to each cell location listed below, type the formula shown, and press Return. The SUM formulas include the line immediately above the list of items and the line immediately below, which sets up a range of cells. If you insert rows within this range later, AppleWorks will adjust the formula to add the new entries.

**FORMULA 1: Total Transportation Expenses** adds the list of transportation expenses (D21 through D11) paid in cash and enters the result in D23.

Cell location: D23

Formula: @SUM(D22.D10)

Copy Formula 1 to the other cells in the row: Leave the cursor on D23 and press OA-C.

VACATION TRAVEL EXPENSES

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STARTING POINT: | PLEASANTON | | SAN FRANCISCO | | MONTEREY | | SAN LUIS OBISPO | | LOS ANGELES | | | | | |
| DESTINATION: | SAN FRANCISCO | | MONTEREY | | SAN LUIS OBISPO | | LOS ANGELES | | NEW YORK | | | | | |
| DAY: | SATURDAY | | SUNDAY | | MONDAY | | TUESDAY | | WEDNESDAY | | | | | |
| DATE: | 6/21/91 | | 6/22 | | 6/23 | | 6/24 | | 6/25 | | TOTAL | | | |
| MILEAGE: | 75 | | 122 | | 149 | | 189 | | 2,500 | | MILES: | 3,035 | | |
| PEOPLE: 4 | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE | | |
| Airfare | | | | | | | | | | 978.00 | 0.00 | 978.00 | | |
| Airport taxes | | | | | | | | | | | 0.00 | 0.00 | | |
| Visa/Passport | | | | | | | | 176.50 | | | 0.00 | 176.50 | | |
| Car rental | | | | 27.99 | | 27.99 | | 27.99 | | 27.99 | 0.00 | 111.96 | | |
| Gas/Oil | | | 12.87 | | | | 18.90 | | 5.50 | | 37.27 | 0.00 | | |
| Car Repair/Maint | | | | | | | | | | | 0.00 | 0.00 | | |
| Parking/Tolls | 7.80 | | 1.50 | | 12.75 | | | | | | 22.05 | 0.00 | | |
| Bus/Train | 9.60 | | | | | | | | | | 9.60 | 0.00 | | |
| Taxi/Limo | | | | | | | 28.50 | | 9.85 | | 38.35 | 0.00 | | |
| Tips | 2.00 | | | | 5.00 | | 8.00 | | 4.00 | | 19.00 | 0.00 | | |
| Other | | | | | | | | | | | 0.00 | 0.00 | | |
| Transportation | 19.40 | 0.00 | 14.37 | 27.99 | 17.75 | 27.99 | 55.40 | 204.49 | 19.35 | 1,005.99 | 126.27 | 1,266.46 | | |
| Room | | 224.56 | | 80.60 | | | | 230.00 | | | 0.00 | 535.16 | | |
| Breakfast | | | | 7.25 | 16.40 | | | | | | 16.40 | 7.25 | | |
| Lunch | | 64.78 | | 37.14 | | | | 42.00 | | | 0.00 | 143.92 | | |
| Dinner | | 98.00 | | 87.00 | | | | 76.70 | | | 0.00 | 261.70 | | |
| Phone | 12.00 | | | | | | | | | | 12.00 | 0.00 | | |
| Laundry/Valet | | | | | | | | | | | 0.00 | 0.00 | | |
| Babysitter | | | | | | | | | | | 0.00 | 0.00 | | |
| Tips | 7.00 | | 3.00 | | | | 5.00 | | | | 15.00 | 0.00 | | |
| Other | | | | | | | | | | | 0.00 | 0.00 | | |
| Living | 19.00 | 387.34 | 3.00 | 211.99 | 16.40 | 0.00 | 5.00 | 348.70 | 0.00 | 0.00 | 43.40 | 948.03 | | |
| Admissions | 24.00 | 28.00 | 32.00 | 16.00 | | 3.00 | 12.00 | | | | 68.00 | 47.00 | | |
| Tours | | 16.00 | | | | | | 20.00 | | | 0.00 | 36.00 | | |
| Memorabilia | | 57.00 | | 18.00 | | | | 54.00 | | | 0.00 | 129.00 | | |
| Night Life | | 28.00 | | 44.00 | | | | | | 36.00 | 0.00 | 108.00 | | |
| Photo Supplies | | | | | | | | 8.00 | | | 0.00 | 8.00 | | |
| Shipping | | | | | | | | | | | 0.00 | 0.00 | | |
| Currency Exch | | | | | | | | | | | 0.00 | 0.00 | | |
| Other | | | | | | | | | | | 0.00 | 0.00 | | |
| Entertainment | 24.00 | 129.00 | 32.00 | 78.00 | 0.00 | 3.00 | 12.00 | 82.00 | 0.00 | 36.00 | 68.00 | 328.00 | | |
| TOTALS: | 62.40 | 516.34 | 49.37 | 317.98 | 34.15 | 30.99 | 72.40 | 635.19 | 19.35 | 1,041.99 | 237.67 | 2,542.49 | | |
| | | | | | | | | | | | GRAND TOTAL: | 2,780.16 | | |

Picked up car in Pleasanton 6/21 AM, dropped off LAX 6/25 AM
On 6/24, stayed with Aunt Lidia in San Luis Obispo
With Mom and Dad in New York for 5 days (see page 2)
On to Washington DC for 2 days (see page 3)

**Figure 1. Highlighted cells in this vacation-travel spreadsheet are formula locations.**

Hit Return twice, move the cursor to E23, type a period, move to M23, and press Return. Tell AppleWorks both cell references are relative by pressing OA-R. Press OA-K to calculate each formula, and compare with **Figure 1**.

**FORMULA 2: Total Living Expenses** adds the list of living expenses (D33 through D25) paid in cash and enters the result in D35.

Cell location: D35

Formula: @SUM(D34.D24)

Copy Formula 2 to the other cells in the row: With the cursor on D35, press OA-C and hit Return twice. Move the cursor to E35, type a period, and move the cursor to M35. Press Return, then OA-R, then OA-K.

**FORMULA 3: Total Entertainment Expenses** adds the list of entertainment expenditures (D44 through D37) paid in cash and enters the result in D46.

Cell location: D46

Formula: @SUM(D45.D36)

Like the first two formulas, copy Formula 3 to the cells in the row as far as column M.

**FORMULA 4: Cash Expense Totals by Day** adds the cash spent in each category and enters the amount in D48.

Cell location: D48

Formula: @SUM(D46,D35,D23)

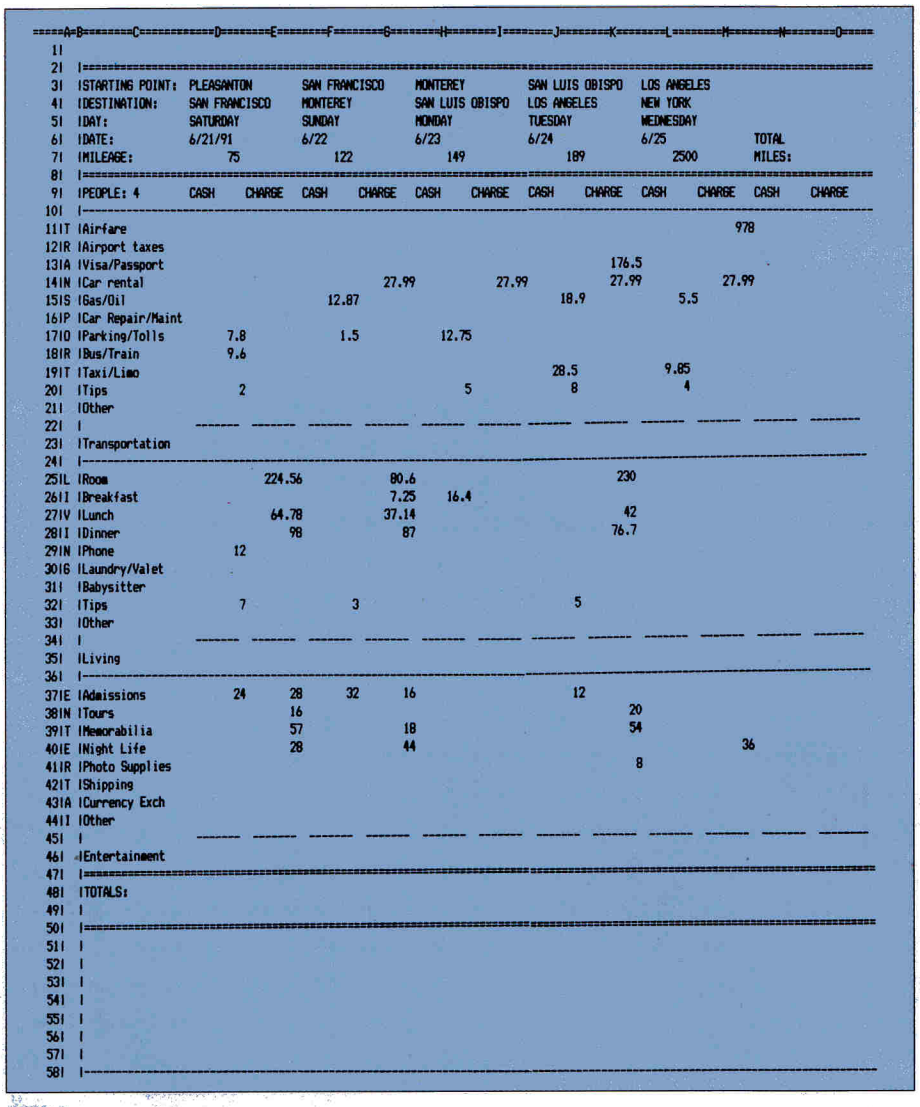
Copy Formula 4 to the other cells in the row as far as column M.

**FORMULA 5: Cash Expense Totals by Item** adds the cash spent on every item each day and enters the amount in N11.

Cell location: N11

Formula: @SUM(L11,J11,H11,F11,D11)

Copy Formula 5 to the other cells in the transportation category: With the cursor on N11, press OA-C and hit Return twice. Move the cursor to N12, type a period, move the cursor to N21, and press Return, OA-R, then OA-K. In the same way, copy Formula 5 to the following cells: N23, N25 through N33,



| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 3 | | | STARTING POINT: | PLEASANTON | | SAN FRANCISCO | | MONTEREY | | SAN LUIS OBISPO | | LOS ANGELES | | | |
| 4 | | | DESTINATION: | SAN FRANCISCO | | MONTEREY | | SAN LUIS OBISPO | | LOS ANGELES | | NEW YORK | | | |
| 5 | | | DAY: | SATURDAY | | SUNDAY | | MONDAY | | TUESDAY | | WEDNESDAY | | | |
| 6 | | | DATE: | 6/21/91 | | 6/22 | | 6/23 | | 6/24 | | 6/25 | | TOTAL | |
| 7 | | | MILEAGE: | 75 | | 122 | | 149 | | 189 | | 2500 | | MILES: | |
| 8 | | | | | | | | | | | | | | | |
| 9 | | | PEOPLE: 4 | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE | CASH | CHARGE |
| 10 | | | | | | | | | | | | | | | |
| 11 | T | | Airfare | | | | | | | | | | | 978 | |
| 12 | R | | Airport taxes | | | | | | | | | | | | |
| 13 | A | | Visa/Passport | | | | | | | | 176.5 | | | | |
| 14 | N | | Car rental | | | | 27.99 | | 27.99 | | 27.99 | | | 27.99 | |
| 15 | S | | Gas/Oil | | | 12.87 | | | | 18.9 | | 5.5 | | | |
| 16 | P | | Car Repair/Maint | | | | | | | | | | | | |
| 17 | O | | Parking/Tolls | 7.8 | | 1.5 | | 12.75 | | | | | | | |
| 18 | R | | Bus/Train | 9.6 | | | | | | | | | | | |
| 19 | T | | Taxi/Limo | | | | | | | 28.5 | | 9.85 | | | |
| 20 | | | Tips | 2 | | | | 5 | | 8 | | 4 | | | |
| 21 | | | Other | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | |
| 23 | | | Transportation | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | |
| 25 | L | | Room | | 224.56 | | 80.6 | | | | 230 | | | | |
| 26 | | | Breakfast | | | | 7.25 | 16.4 | | | | | | | |
| 27 | V | | Lunch | | 64.78 | | 37.14 | | | | 42 | | | | |
| 28 | | | Dinner | | 98 | | 87 | | | | 76.7 | | | | |
| 29 | N | | Phone | 12 | | | | | | | | | | | |
| 30 | G | | Laundry/Valet | | | | | | | | | | | | |
| 31 | | | Babysitter | | | | | | | | | | | | |
| 32 | | | Tips | 7 | | 3 | | | | 5 | | | | | |
| 33 | | | Other | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | |
| 35 | | | Living | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | | |
| 37 | E | | Admissions | 24 | 28 | 32 | 16 | | | 12 | | | | | |
| 38 | N | | Tours | | 16 | | | | | | 20 | | | | |
| 39 | T | | Memorabilia | | 57 | | 18 | | | | 54 | | | | |
| 40 | E | | Night Life | | 28 | | 44 | | | | | | | 36 | |
| 41 | R | | Photo Supplies | | | | | | | | 8 | | | | |
| 42 | T | | Shipping | | | | | | | | | | | | |
| 43 | A | | Currency Exch | | | | | | | | | | | | |
| 44 | I | | Other | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | | |
| 46 | | | Entertainment | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | | | | |
| 48 | | | TOTALS: | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | | | | |
| 58 | | | | | | | | | | | | | | | |

**Figure 2. Labels, lines, and practice entries for the vacation-travel spreadsheet.**

N35, N37 through N44, N46, and N48, pressing OA-K to recalculate after each copy.

Next, copy all formulas in column N to column O: Place the cursor on N11, press OA-C, hit Return once, move the cursor to N50, and hit Return again. Press Right Arrow to move the cursor to O11 and hit Return. Every cell reference in each formula is relative, so press OA-R. Press OA-K.

**FORMULA 6: Miles Traveled** adds the miles traveled daily and enters the amount in O7.

Cell location: O7

Formula: @SUM(L7,J7,H7,F7,D7)

**FORMULA 7: Grand Total** adds total cash spent (N48) and total charges (O48) to produce the grand total in O49.

Cell location: O49

Formula: +N48+O48

Chances are you'll need more than a one-page spreadsheet for most vacations. Simply change this formula to include the cash and charge totals from other pages, or enter a new formula somewhere on the spreadsheet to take all such page totals into account.

Vertical lines will divide your spreadsheet into days and make it look like the one in **Figure 1**: First, place the cursor on B2, type quotation marks and an equal sign, then press Return. Now do the vertical lines: Place the cursor on B3, type quotation marks again, type the vertical line (it shares the backslash key), and hit Return again. Leave the cursor on B3, press OA-C, and hit Return twice. Move the cursor to B4, type a period, move the cursor to B48, and press Return.

You can now insert this vertical line anywhere on the spreadsheet: Leave the cursor on B3 and copy the entire column to the clipboard: Press OA-C, type **T**, type **C**, and hit Return. Now copy the column containing the vertical line from the clipboard to the left of column D: Place the cursor on D2, press OA-C, and type **F**. Place the cursor on G2. Again, press OA-C and type **F**. Do the same in J2, M2, P2, S2, and V2. Now use the *Layout* command (OA-L), *Columns*, and *Column width* to reduce each vertical-line column by eight characters (to one character each). Press OA-S to save.

You're in the home stretch now, so refer to **Figure 1** and type the spreadsheet title in I1, leaving one space between characters and two spaces between words. Then type quotation marks in R49, press the spacebar six times, type **GRAND TOTAL:**, and hit Return. Enter a vertical line in B49 through B58 and V49 through V58, then eliminate the gaps in rows 50 and 58 by entering equal or minus signs. Edit (OA-U) another minus sign into O22, O34, and O45 to make the short lines one character longer. Lastly, type the notes in C51 through C54.

Leave the cursor where it is and press OA-O to bring up *Printer Options*. Type **TM** (to change the top margin) and press Return. Type **.2** and hit Return again. Type **CI** (for *Chars per Inch*), press Return, type **17,** and hit Return. All other print settings remain at AppleWorks standards. Press OA-S to save and return to the spreadsheet screen.

Now print your spreadsheet: Leave the cursor where it is and press OA-P. Hit Return to confirm *All*. Press Return to select the printer (or type a printer number, then press Return), type the date (if you have a computer clock, type @), and hit Return twice.

If you're taking more than a five-day trip, you'll need to add columns: Copy one day's worth of columns with their formats, formulas, and lines to the clipboard, then copy them back into the spreadsheet once for each extra day. To add a day, place the cursor on Q1 and copy columns Q, R, and S to the clipboard. Move the cursor back to column Q1 and copy from the clipboard, choosing *Formulas and values*. Reduce the width of column S and edit the formula in W11 to include the new cash cell, Q11. Copy the formula into other cells in column W, then as a group from column W to column X. Blank out *GRAN* in row 49 and make other touchups. Save this new version under another filename. Have a great vacation! ❑

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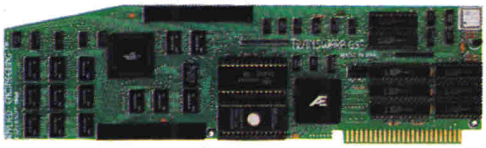

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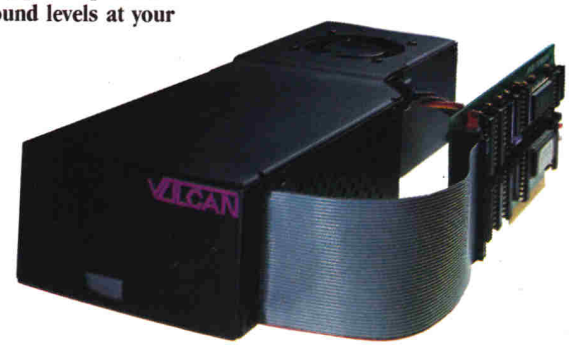


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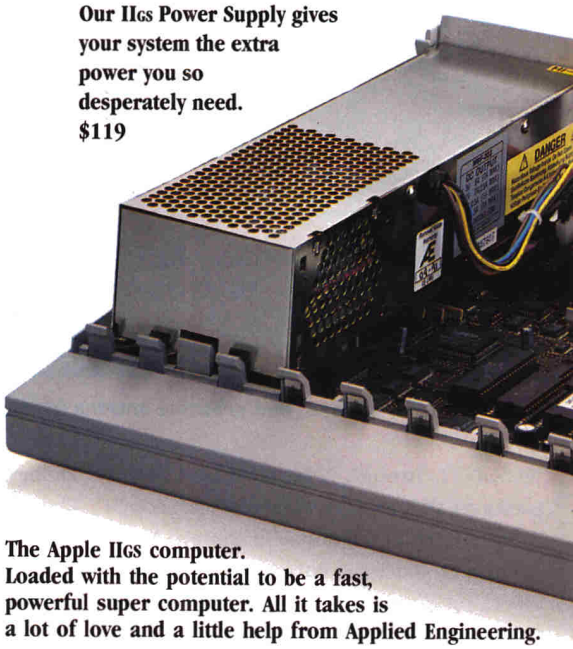

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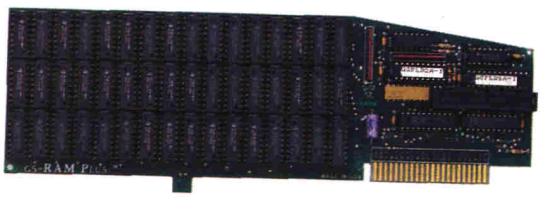

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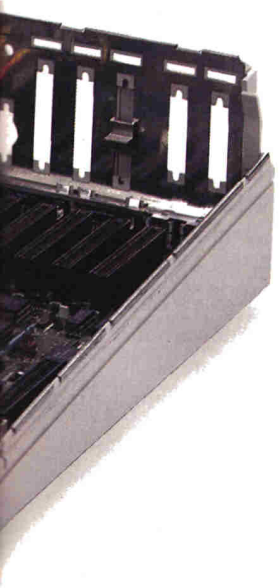

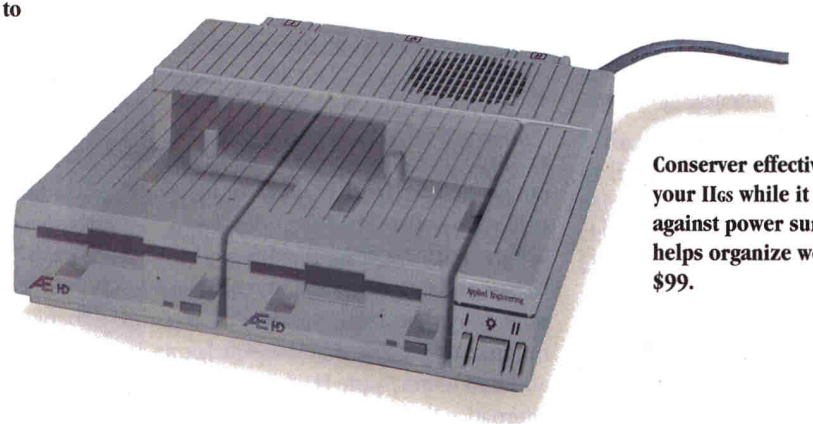

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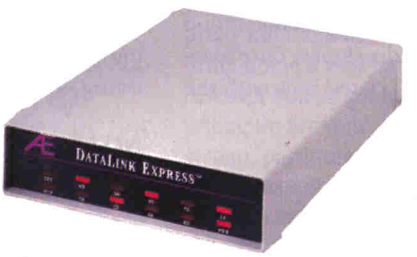


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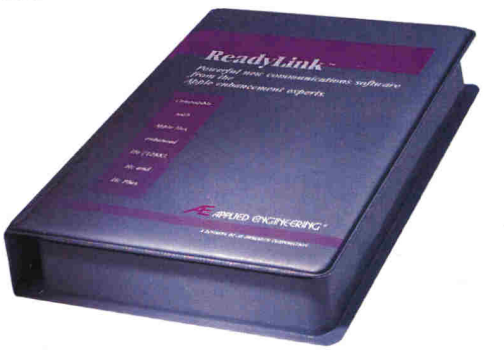


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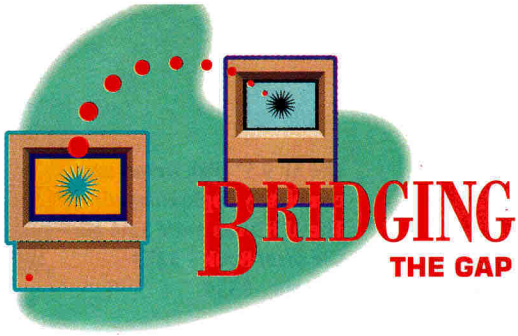



# THE DEVELOPERS' PLATFORM

**Five Apple II/Mac developers comment on their strategies for handling a mixed market — after all, no one computer has the lock on everyone's desk.**

**By GREGG KEIZER**

YOU'RE NOT THE ONLY ONE BRIDGING the gap. Not only are there thousands of other people out there, all of them, like you, trying to live in two computer worlds at once, there are dozens of software publishers and hardware manufacturers simultaneously struggling to meet the needs of established Apple II customers as they reach out for new Macintosh markets.

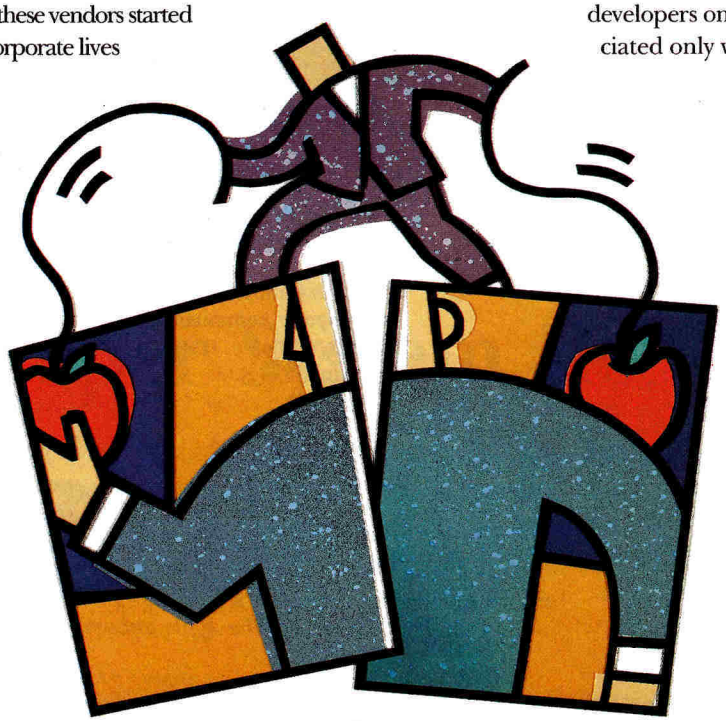
Most of these vendors started out their corporate lives as Apple II developers. They all continue to put out at least some products for the Apple II line (as well as MS-DOS titles, too).

Now, with combined sales of the Mac Classic and LC projected to breach the one-million mark in 1991, these publishers and manufacturers see the Mac market as an addition to the Apple II audience and as an alternative to the PC for home, home-office, education, and entertainment applications.

It's no surprise that name-brand developers once associated only with the Apple II — from Broderbund and The Learning Company to Applied Engineering and Timeworks — are rolling out Mac programs as they continue to sell and support their Apple II lines. You see, publishers and manufacturers must bridge the gap, too.

These connectors aren't always elegant and transparent, with versions that make switching systems a pleasure. Often the links are crude and simple, maybe only sharing a name with something Apple II owners have known and loved for years. Sometimes the bridges are more sophisticated, where function and form are nearly identical.

Several prominent developers comment here on how they're spanning the chasm between the Apple II and the Mac. Their remarks range from what they think of the low-cost Macs to how they'll continue to support and create for the Apple IIe/c and IIGS. They may not share state secrets (no one likes to give the competition advance warning), but their comments are always interesting, and sometimes even illuminating.



## NOT PUBLISH? PERISH THE THOUGHT!

"We're committed to the Apple II line," **Timeworks**' Bill Sickle says firmly. Sickle is product manager for Timeworks' desktop-publishing packages, and is responsible for *Publish It!*, one of the best-known Apple II programs. And he's not about to give up on a good thing: "We had an Apple II line long before the Macintosh, we're working hard on Publish It!, and someday soon you'll see *Publish It! 4* for the Apple II."

Bridging the gap, claims Sickle, is a phrase often used in the Timeworks' offices: "Like many other publishers we see this migration to the Mac. The Apple II is a shrinking market rather than a growing one, but we're trying to make the migration as easy as possible for the user, to ensure ⇨



Illustration ✻ Julia Talcott

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*October 30, 1990*

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that the years of data they've invested in the Apple II aren't lost. We're very concerned about that."

Timeworks demonstrated this concern last October when it released *Publish It! Easy*, an entry-level desktop-publishing package for the Mac. Publish It! Easy directly imports AppleWorks, AppleWorks GS, and Apple double-hi-res graphics files into its Mac documents. Although Sickle stops short of promising a future with complete and transparent Publish It!-to-Publish It! Easy file compatibility, he says instead, "We'd be fools not to take advantage of our market share. It's obvious that it's file sharing between Apple II and Mac versions." And he promises other interesting products to help users bridge the Apple II-to-Mac gap.

"I'm very happy to see a lot of Apple II users move over to the Mac. We're just trying to ease their transition," says Sickle. "People will find that the transition time is very short — they'll like the Mac. But we won't forget the Apple II users. We'll continue to publish Apple II software as long as people buy it. When you have an enormously successful product and very loyal users, it's like having a full house and quitting the poker table. For the foreseeable future we'll publish for the Apple II."

### LEARN ON THE LC

**The Learning Company** sees things a bit differently. "The school markets are particularly excited about the LC," says Sharyn Fitzpatrick, The Learning Company's corporate communications director. "The LC's features give Apple II users another outlet. Eventually the Mac part will become the primary part of the machine." As for the Apple II's future in The Learning Company's plans, Fitzpatrick will only say, "That's up for discussion. We've not made a decision yet."

Clearly, The Learning Company is looking hard at the LC. According to Fitzpatrick, its color, relative affordability, and other bells and whistles make it an attractive machine, particularly for schools. "We're trying to create a whole new product line," says Fitzpatrick. Software such as *The Writing Center*, an announced-but-not-yet-released word-processing and desktop-publishing program, will be joined by Mac versions from the *Super Solvers* series, the company's very successful PC line.

"Whether we take existing titles and move them to the Mac depends on what they are," says Fitzpatrick. "That's dictated by the market. But we're looking at taking successful titles from the Apple II and moving them to the Mac. We're announcing *Reader Rabbit* for the Mac, in color, and we should ship it [this spring]."

As for Apple II users, Fitzpatrick sympathizes with their anxieties about being left behind, but she doesn't have an easy answer. "The technology is what will leave them [Apple II users] behind. The technology is what's deserting them, not the publishers," she says. "We need to give kids animation, and we need 512K to do it. We're dealing with Nintendo kids. We can't get them excited on a 128K Apple II."

### ON THE MAC ALL ALONG

**Davidson & Associates** has been bridging the gap for years. Now the company's refining its future vision of Apple computers in the classroom and at home.

"I had no idea it would be five years before they [Apple] brought out a [Macintosh] product for homes and schools," says Jan Davidson, president of Davidson & Associates. "I loved the Macintosh interface. I thought it was great for education, even though Apple didn't know then if it was going to fit into education."

So Davidson pushed for Macintosh development, and pushed hard. Work on the company's first Mac package was begun only months after the machine's introduction in 1984; a year later *Math Blaster* was on the shelves. At the same time, Davidson's Apple II products took on a distinctive Mac look and feel. "The [Macintosh] interface was so perfect for learning that we tried to make the Apple II [products] look like the Mac," Davidson says. "We've already got our Apple II users comfortable with the Macintosh interface," she says, pointing out that running Davidson Apple II software on a Macintosh LC under the Apple IIe Emulation Card will be an especially easy transition. "They'll actually use the mouse and pull-down menus just as they do with Mac software."

At Davidson, as at most software publishing companies, the Apple II's future isn't crystal clear. Although there are several Apple II products under development, including a IIGS version of *English Express*, a comprehensive English-as-a-second-language program on laser disc, Davidson notes, "We're making development decisions based on the features of the machine and the objectives of the program. We try to meet the needs of the marketplace. People want more and more from a software product."

But what of Apple II owners? Davidson declined to comment directly, but gave this analogy instead: "I bought a refrigerator a couple of years ago. A few months later, a better one came along. Why is it that people feel that computers should be any different?

"I'd be buying Mac LCs," she advises, putting herself in an educator's shoes. "If I felt a real need to use [Apple II] software, I'd buy the Apple IIe Emulation Card and make use of it. We're really quite excited about the LC, because of the speech-input capabilities. I think that the Mac Classic and LC are going to be very successful."

### THANKS FOR THE MEMORY

**Applied Engineering** may be the preeminent maker of Apple II add-on cards, but like its software counterparts, it too is moving into the Macintosh market.

"We have a number of products we see as bridging the gap," says AE's Tom Milks. "We think that the majority of Apple II users looking for their next computer will stay with Apple, and will decide on the Classic and the LC. Those machines represent the kind of price range that most consumers can afford. So we've designed products for those computers."

### COMPANY ADDRESSES

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Some of these products, such as the external *Datalink* modem, which sports ports for the Mac, IIGS, and IIe, and an external 3.5-inch disk drive, which you can use with either Mac or IIGS computers, can flip-flop between worlds or make the transition when you do. Other products, such as a memory-expansion card for the bargain-basement priced Classic, and a multifunction board for the LC, are Mac specific.

"We're noticing an increase in the Macintosh product sales," says Milks. "A lot of the same loyal customers that knew us as an Apple II company are looking at and buying Macintoshes. They trust the Applied Engineering name." Playing off that name is a big part of AE's strategy.

But according to Milks, Applied Engineering will continue to be a major member of the Apple II universe. "We'll always support the Apple II and we'll continue to introduce products for the II. We'll present at least two products within the next 60 days. We'll offer an upgrade for the *TransWarp GS* to make it even faster, and we'll offer an upgrade to the *Vulcan* hard-disk drive to increase its performance."

AE admits that some Apple II users may take its entry into the Mac market as an abandonment of the faithful: "We have to grow with the market. We're moving into the Mac market so we can continue to support the Apple II market." That reasoning, though good business sense, may sound disingenuous to Apple II loyalists. "By the end of the year, our development should be more on the Mac side than the Apple II side," says Milks. "Let's face it, a company can't stay in business without a market."

## HOME AT SCHOOL, NOT AT HOME

Other than Apple itself, no company has sold more copies of its software to the Apple II community than **Broderbund**. And though the company is nowhere near calling it quits on the II, it sees the machine in a narrower, more focused light.

"We're continuing to publish in both Apple II and Macintosh formats," says Francesca Sterling, Broderbund's public-relations manager. "But for the Apple II we're only converting those products that fit in the educational market." At first glance that may sound warning bells in Apple II users' heads, but Broderbund's big sellers are aimed at the classroom, even if they sometimes end up in the home. Veterans such as the *Print Shop* and *Carmen Sandiego* lines are cases in point.

"We're constantly evaluating it [the Apple II market]," says Sterling. "We see the market weakening. But the schools still have a lot of Apple IIs, so anything new that they can use, we'll continue to convert to the Apple II." As proof, Sterling offers up *Treehouse*, a *Playroom* sequel for older kids. Although it will hit the Mac first, an Apple II version is in the works. Ditto with *Where in America's Past Is Carmen Sandiego?*, another episode in the seemingly endless tales of crime, geography, and history.

Still, Broderbund is noticing an Apple II-to-Mac transition: "We're seeing the impact of the new systems [the Classic and LC]. We've noticed a significant increase in Mac product sales during the last two months." Ascribing the jump in sales to the low-cost Macs, Sterling promises that all future Broderbund Mac software will be written for color.

As to what to say to diehard Apple II fans, Sterling is at a loss for words. "I'm not sure what to tell them," she says. "It's the evolution of the computer market. We all have to go in that direction."

## DIFFERENT ARCHITECTS . . .

One thread that runs through every conversation with old-line Apple II developers is that business is business. The market demands, or it doesn't demand. And then it decides. Companies that don't react to change and make the transition risk disappearing. And a company long gone doesn't do anyone any good, whether that's a user needing technical support, a developer needing work, or a stockholder needing dividends.

Businesses make tough choices on the basis of cold facts, not hot emotions. Sometimes that's the hardest thing for any computer user — no matter what machine he or she uses — to understand. ❑

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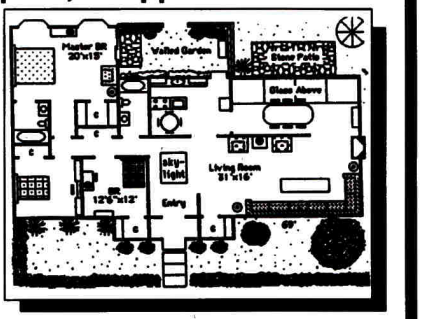

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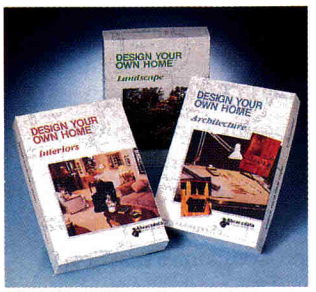


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Salvation: Wings *(GS)*.....47.

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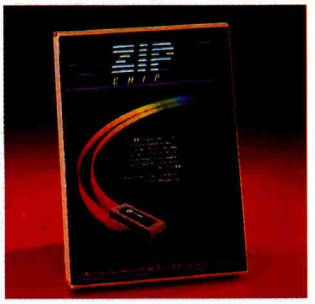

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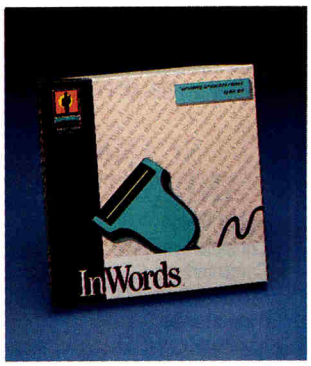


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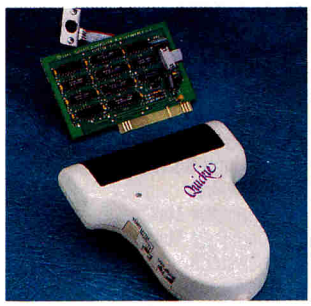


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# DESKTOP PUBLISHING GOES CAD

**There's no need to buy a dedicated program for many computer-aided-design projects — a DTP program will do fine.**

**By CYNTHIA E. FIELD, Ph.D.**

A RECESSION'S A GOOD TIME TO squeeze additional productivity out of every software dollar, and desktop-publishing (DTP) programs are a perfect place to start. Most DTP products can easily tackle everyday computer-assisted-design (CAD) projects that might otherwise require an outlay of $100 or more for special software. Certainly, DTP programs can't boast the wealth of design features that professional drafting software does, but for uncomplicated applications, try drafting with the layout rulers, shape tools, and fill patterns your DTP program provides. Getting started is easy — just take a few cues from this month's project, a boat-dock template designed by reader Alan Krause. (See the accompanying **Figure**.)

Krause belongs to the Easthampton Rod & Gun Club, a 250-member sporting club that's located on the Oxbow section of the Connecticut River in western Massachusetts. Among other services, the club provides boating facilities for its members.

"Because the Oxbow freezes in the winter," Krause explains, "we're forced to remove our docks or risk having them damaged severely by ice. Armed with photocopies of the template, committee members inspect each section of the dock as it's removed from the water and note the repairs (if any) that are required. The filled-in templates then tell us at a glance the materials we need to purchase in order to do the work."

Krause's template also lets members add to the dock or experiment with different arrangements. Because it's composed of design objects, Krause can select and drag part of it to another location, or copy and paste sections wherever he wants. Strategic placement of text frames lets him keep track of boat names and owners. As Krause points out, a marina owner could give handouts of a dock template to boat owners seeking a berth at the facility.

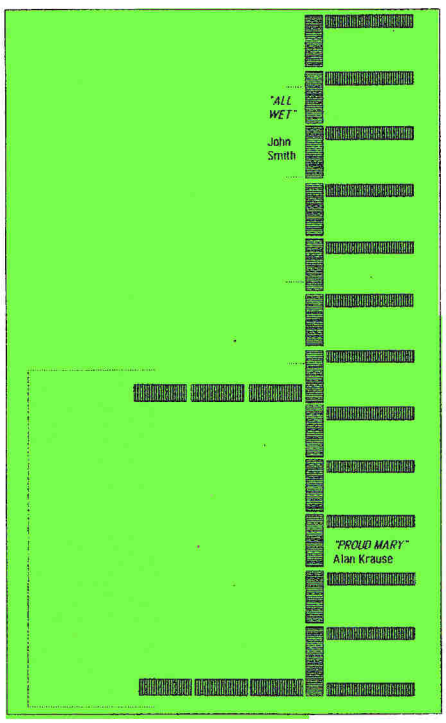


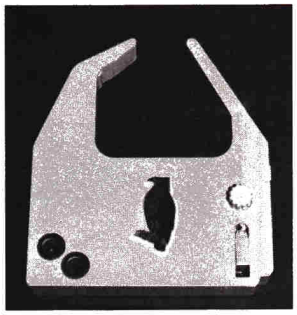

**Figure. Krause's boat-dock template.**

Krause's template sports more than three dozen objects, yet it's a snap to set up — particularly if you use **Publish It! 3** as we demonstrate here ($149.95; Timeworks, 625 Academy Drive, Northbrook, IL 60062, 708-559-1300). Although you'll want to switch viewing modes from time to time during the design process, start with *Size to Fit* mode by pressing Open apple-4 (OA-4) or *Show Half Size* mode by pressing OA-3. When it's time to type boat names, press OA-1 for *Show Full Size* mode.

The 12 "mains" in the club's dock are represented by vertically oriented, filled rectangles. Pull down the *Objects* menu, select *Set Line Weight*, and choose the narrowest one. Pull down the menu again, select *Set Fill Pattern*, and choose the fourth pattern in the top row of the pattern palette. Select the box tool and *rubber-band* a vertical rectangle that's about one-quarter of an inch wide by three-quarters of an inch high. To *rubber-band*, hold down the mouse button, drag the mouse diagonally, and release the button when the rectangle looks correct. Use the screen rulers as guides.

Now make sure the rectangle's selected. If it is, it displays four corner "handles." If it's not, click on it with the pointer. Press OA-M. Check the dimensions that appear in the pop-up dialog box and edit them as required to conform to the specifications for the first object under *Mains* in the accompanying **Table**.

Unlike a CAD program, Publish It! 3 can't scale components automatically for you. Depending on the precision your drawing requires, you may need to do a ⇨



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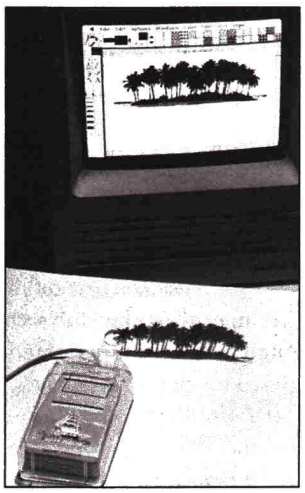

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little arithmetic ahead of time. For instance, Krause wanted his dock template to be drawn to scale, and chose one-sixteenth of an inch to one foot. That means each sixteenth of an inch on the page represents a foot of actual dock.

After selecting the scale, convert one-sixteenth to a decimal (0.0625) by dividing the numerator (1) by the denominator (16). Then multiply the decimal by the actual number of feet in the width of each dock component, and write down the result. Next, multiply the decimal by the number of feet in the actual length of each dock component, and write down that number. The two numbers you calculate constitute the size of the rectangle you need to create. Thus, Krause's 4-by-12-foot rectangular main scales to 0.250 by 0.750 inch (one-quarter by three-quarters of an inch) on Publish It!'s page, as shown in the accompanying **Table**. Depending on the orientation of the object you draw on screen, the DTP program will refer to one of the two calculated dimensions as the width and the other as the height.

| Object | Left Start | Top Start | Width | Height |
|---|---|---|---|---|
| **Mains** | | | | |
| 1 | 3.933 | 0.516 | 0.250 | 0.750 |
| 2 | 3.994 | 1.316 | 0.250 | 0.750 |
| 3 | 3.994 | 2.093 | 0.250 | 0.750 |
| 4 | 3.994 | 2.911 | 0.250 | 0.750 |
| 5 | 3.994 | 3.706 | 0.250 | 0.750 |
| 6 | 3.994 | 4.501 | 0.250 | 0.750 |
| 7 | 3.994 | 5.298 | 0.250 | 0.750 |
| 8 | 3.994 | 6.079 | 0.250 | 0.750 |
| 9 | 3.994 | 6.854 | 0.250 | 0.750 |
| 10 | 3.994 | 7.631 | 0.250 | 0.750 |
| 11 | 3.994 | 8.444 | 0.250 | 0.750 |
| 12 | 3.994 | 9.229 | 0.250 | 1.000 |
| **Fingers** | | | | |
| 1 | 4.283 | 0.518 | 1.250 | 0.186 |
| 2 | 4.283 | 1.338 | 1.250 | 0.186 |
| 3 | 4.283 | 2.115 | 1.250 | 0.186 |
| 4 | 4.281 | 2.926 | 1.250 | 0.186 |
| 5 | 4.283 | 3.745 | 1.250 | 0.186 |
| 6 | 4.275 | 4.504 | 1.250 | 0.186 |
| 7 | 4.291 | 5.301 | 1.250 | 0.186 |
| 8 | 4.291 | 6.116 | 1.250 | 0.186 |
| 9 | 4.291 | 6.875 | 1.250 | 0.186 |
| 10 | 4.291 | 7.652 | 1.250 | 0.186 |
| 11 | 4.301 | 8.468 | 1.250 | 0.186 |
| 12 | 4.291 | 9.245 | 1.250 | 0.186 |
| 13 | 4.291 | 10.043 | 1.250 | 0.186 |
| **Ramps** | | | | |
| 1 | 1.534 | 5.794 | 0.750 | 0.250 |
| 2 | 2.356 | 5.794 | 0.750 | 0.250 |
| 3 | 3.180 | 5.794 | 0.750 | 0.250 |
| 4 | 1.606 | 9.979 | 0.750 | 0.250 |
| 5 | 2.411 | 9.979 | 0.750 | 0.250 |
| 6 | 3.200 | 9.979 | 0.750 | 0.250 |
| **Docking Area for Small Boats** | | | | |
| 1 | 3.711 | 1.541 | 0.241 | n/a |
| 2 | 3.711 | 2.820 | 0.241 | n/a |
| 3 | 3.719 | 4.312 | 0.241 | n/a |
| 4 | 3.737 | 5.479 | 0.241 | n/a |
| **Patio** | 0.018 | 5.583 | 1.813 | 4.815 |
| **Text Frames** | | | | |
| "All Wet" | 3.451 | 1.656 | 0.480 | 1.073 |
| "Proud Mary" | 4.373 | 7.983 | 1.750 | 0.441 |

**Table. Template specifications (inches); n/a = not applicable.**

After creating and, if necessary, resizing and reorienting the first main, select it and press OA-C to make a copy. Paste the copy (OA-V) and drag it under the original. Check the copy's specifications in the accompanying **Table** and edit as required to align the two objects properly. Continue pasting and placing copies until you've superimposed a dozen mains. Note that the last (bottom) main is longer than the others; it has to accommodate two dock "fingers."

When you're creating designs composed of a series of objects such as mains, remember that you can line them up precisely with the *Align* function in the *Objects* menu. In his original design Krause lined up the dock's mains by selecting the objects with the lasso and activating the *Left Edges* and *No T/B Alignment* settings in the *Alignment* dialog box. Publish It!'s *lasso* is an invisible tool (it's not displayed in the program's toolbox) so its function is built into the pointer. To *lasso* objects, choose the pointer, hold down the mouse button, and drag the arrow cursor around any objects you want to capture. Lassoing is a fast way to select a group of objects, but it's also perfect for selecting single objects, such as thin lines, that are sometimes maddeningly hard to select by clicking.

The 13 fingers that jut out from the right

side of the mains are horizontal, filled rectangles, as are the six ramps leading to the dock. For these objects, use the eighth pattern in the top row of the pattern palette. Create the first finger or ramp, copy and place it, then create the next object, and the next, and so on.

The club's patio is represented by the large, filled rectangle in the layout's lower-left quadrant. Krause used the *10-percent* fill pattern to simulate concrete. Drawing the patio after creating the ramps means covering up part of the leftmost ramp sections. To handle this kind of situation, select each affected object and invoke the *Move to Front* command from the *Objects* menu. You can correctly relayer each of the two affected ramps separately, or you can coselect them (click the first and OA-click the second), then place both of them on top of the patio simultaneously.

The four docking areas for smaller boats (including the fictitious "All Wet") are indicated by short dotted lines. Use the line tool and the eighth pattern in the top row of the pattern palette.

Using the text tool, rubber-band appropriately sized text frames into the docking areas on the template. Insert the I-beam tool into a text area, select a suitably sized typeface from the *Font* menu (or press OA-W), and type the name of the boat and its owner. Krause chose the *Desplaines* font in *12 points*, then italicized the name of the boat (*Font* menu or OA-I), typed it in uppercase, and enclosed it in quotation marks. He entered the owner's name in plain upper/lowercase letters.

### BRANCHING OUT INTO CAD

Whatever desktop-design projects you have in mind, set sail with a desktop-publishing program such as Publish It! 3. Most of the tools you need are accessible and easy to use. Just imagine the time you'll save not having to learn new CAD-program commands! Perhaps best of all, you'll save money discovering new ways to use the software you already know. Recession or not, that's a wise investment. ❑

CONTRIBUTING EDITOR CYNTHIA E. FIELD IS A FREELANCE JOURNALIST SPECIALIZING IN COMPUTER-RELATED TOPICS. WRITE TO HER AT 60 BORDER DRIVE, WAKEFIELD, RI 02879. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.

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Continued from p. 21

"noise." Zip says that if you're handy with a soldering iron, there's a simple cure: Solder a small piece of wire between the two pads in the lower left-hand corner of the ZipGSX card. Even better, return the card to the company (call first for a returned-merchandise authorization number) and it'll perform the fix for you. At press time, the company says it has had no reports of similar problems in GSes with ROM 03 motherboards. In addition, Zip says that the problem is now being taken care of in production; current ZipGSX cards won't need the fix.

No question about it: We noticed immediate improvements in program performance with the ZipGSX installed. To quantify this subjective perception we selected four Apple II programs: AppleWorks 3.0, Publish It! 3, AppleWorks GS, and Platinum Paint. Then we grabbed a stopwatch.

We ran each program first with the 9MHz ZipGSX installed and again without the accelerator. We kept the GS Control Panel in *Fast* mode throughout. In each trial, we performed precisely the same steps: We recalculated a 9K spreadsheet, spell-checked a 13K word-processing document, sorted a 97K database, flood-filled a painting's background, brushified patterned shapes, and switched viewing modes in page-layout documents. We performed each test three times, calculated an average, and converted that value to a percentage speed increase.

With the 9MHz ZipGSX installed, speed improvements ranged from 101 percent to 321 percent with an average boost of 145 percent. Garnering the most benefit were 8-bit programs, but AppleWorks GS and Platinum Paint both worked twice as fast as usual. A Zip spokesperson later explained that programs such as Publish It! 3 tend to show the greatest speedup because "tight loops in their programming code are easy to cache." Operations involving copious disk access were hastened only 20 percent, because the 3.5-inch drive we were using during our tests incorporates 1MHz timing cycles.

### FATAL (NOT REALLY) DISTRACTIONS

Although we've nothing but praise for the ZipGSX card, we're not as enthused about the documentation that accompanies this otherwise outstanding product. We like the HyperStudio stack and we're aware that the company intends you to use the tutorial before you work with the card itself. But some liberties its author took with verb tense are a little disconcerting.

For example, when you finish the installation section of the tutorial, the screen reads "Congratulations! You have successfully installed a Zip GSX." Of course, you haven't actually installed the card — you've only simulated its installation. At another point the text reads, "Did the machine power up as usual?" If the GS hadn't, you wouldn't be able to read the message, right?

If you're installing ZipGSXes in a series of computers (in a classroom or computer lab, say), then the HyperStudio stack is perfect as is. You can run the tutorial on one machine while you upgrade the others. But for those of us with a lone GS, some of the phrasing seems incongruous.

Major criticism, however, must be leveled at the printed documentation. We have no misgivings about the manual's format: 8 stapled pages. For a product like this, spiral or comb binding would probably be overkill. What disappoints us is the fact that even the latest revision (version 1.04) continues to mention two socket-only products that aren't (and apparently were never) available. You may have seen the "ZipChip" models we're referring to featured in the company's earlier advertising. Moreover, while the latest version of the manual is a bit less technical than earlier versions, some information might still be largely inaccessible to inexperienced GS users. For example, the section explaining the classic desk accessory reads, "The CDA is very straightforward," but the paragraph that follows doesn't define a CDA or explain its installation and use.

Technical information about DIP switches is sometimes presented in daunting terms, too. For example, in describing one particular switch the manual says, "If a program flips a 65C816 bank between 'shadow' and 'non-shadow' in this address area, it is possible to confuse the cache memory." Relief comes a few lines later: "There is no known software requiring this switch change." Whew!

Another confusing point that's not addressed anywhere is that the DIP-switch parlance used in the documentation is exactly opposite to the syntax used in the CDA and cdev. For instance, a given DIP switch might be considered off in "DIP switchese" but on in a dialog box's English translation. The reason: The DIP switch that's off electronically is "enabled" or on as far as humans are concerned. This syntactical switcheroo certainly threw us at first.

There were a few other editorial fly specks that we hope the next revision cleans up, but we're more interested in seeing a manual that's written on a level the average consumer will understand.

### ZIPPING ALONG

The folks at Zip Technology will probably be glad to read that we didn't submit the ZipGSX to our customary free-fall test (just kidding). But we did use the card continuously during the two-week trial period for workdays typically extending ten hours or more. Although we usually power down our GS system at the end of each day, we left everything up and running for 36 hours on one occasion to see what would happen. Nothing did. We can't say that all ZipGSX cards will perform as reliably as the test unit did, but the company's generous 30-day money-back guarantee period should give you enough time to decide if the ZipGSX in one of its three basic configurations is right for you.

**Cynthia E. Field, Ph.D.**
**Wakefield, RI**

## GEOQUIZ

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★ ★ ★ ★ ½

Did you know that English is the official language of Kiribati and Vanuatu? Are you aware that Porto-Novo is the capital city of Benin? Can you tell us how to pay for goods and services in Lesotho? What's the population of Unified Germany? Can you locate Burkina Faso, Comoros, Nauru, or Tuvalu on a world map?

If these questions ring of nothing familiar, you're not alone. In fact, recent surveys have shown that our country's classrooms may be experiencing a geography crisis — many high-school students can't even locate foreign countries on a world map.

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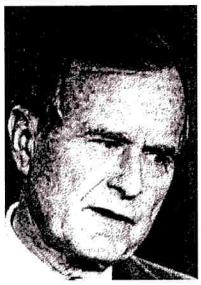

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**Circle 49 on Reader Service Card.**

How do we combat this lack of knowledge? By booting up GeoQuiz on our IIGSes at home and in the classroom, we can gain access to a world of information.

This educational program masquerades as a game to bring you facts and statistics from 170 countries around the globe. GeoQuiz includes detailed information from the U.S. Department of State, the World Bank, the United Nations, and the Central Intelligence Agency (from the CIA's *World Fact Book*). To ensure accuracy as of December, 1990, all data has been corroborated by the Encyclopedia Britannica's *World Data Annual*.

GeoQuiz is filled with colorful world and regional maps that help make geography come alive as you learn to identify countries and capital cities around the world. An on-line atlas contains a wealth of statistical data on each country — some information even takes form in graphs. Just click on an area of the world and one of 35 regional maps will appear. Click on a particular country and data will pop up in a window. You'll find colorful flags for each country, along with information on population, gross national product, area, date of independence, national holidays, currency, official languages, and religious background. Adjustable skill levels let you customize each session — as your knowledge of the world increases so will the challenge.

**GeoQuiz: Take the global challenge.**

### THE VALUE OF "EDUTAINMENT"

Although some of you may be content relying on the atlas to learn your geography lessons, the young (or young at heart) will want to head straight for the games. Get ready for a challenge, though, because each of the three games present questions randomly so that no two GeoQuiz sessions are ever the same. In *Name It*, you must identify a country that flashes on the regional map — your only clue is the name of the capital city. *Recognize It* is *Name It* with a twist — you must identify the country without knowing its capital city. In *Locate It*, you must find the area on the regional map where the country at the bottom of the screen is located.

Whichever game you choose, you determine the ground rules. For instance, you can choose a multiple-choice format or elect to type the countries' or capital cities' names. And depending on how much coaching you think you'll need, the program can give you up to three hints. (Every hint displays pertinent data from the atlas.)

Each time you answer correctly you'll earn points — and the fewer mistakes you make, the more points you accrue. Be careful about asking for hints; the game will take it out of your score. Although it's appealing to select your answer from a multiple-choice list, typing the answer will score higher. At any point during the game, you can see a score board that shows how many questions you've answered correctly, how much time you've used, and


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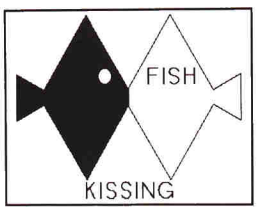


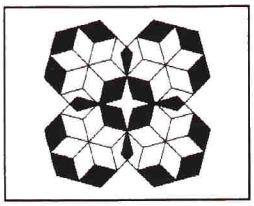

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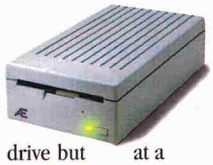

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the point value of the game. You can also suspend play temporarily to access the atlas. Sure, that's cheating, but after all, the object of GeoQuiz is to teach world geography.

If you want to resume playing another day, you can save to disk both the game in progress and the ground rules you've set up. You also can save any regional or country maps (or any GeoQuiz screen) as a standard Apple IIGS graphic file that you can then load into a IIGS paint program, incorporate into an AppleWorks GS graphics-based database, or use as the foundation for a HyperStudio or HyperCard IIGS interactive stack.

### SYSTEM QUIRKS

As for technical details, the operating system supplied with GeoQuiz is ProDOS-16, so when you first run the product the ProDOS-16 program launcher dialog box appears and you need to double-click on the GeoQuiz program file. (PC Globe elected to use ProDOS-16 so that the operating system and program could reside on a single 3.5-inch disk.) Had the GeoQuiz disk booted directly into the program, young children could've used the program with less teacher or parent supervision. GeoQuiz is 100 percent compatible with the current version of GS/OS and is hard-drive installable. Using GeoQuiz from the Finder is by far the fastest and easiest method.

Our only other complaint is that the resolution of some regional maps, such as those of the Caribbean, Oceania, and Micronesia makes lining up the mouse cursor with their small island groups difficult. If the cursor comes to rest on the water instead of the island itself, a somewhat misleading error message that says "information on this country can't be seen in this map" appears. Future revisions would benefit from a feature that lets you zoom to an island group and display an island as larger than a dot. (PC Globe hopes to release updates to the program once a year; it also wants to supply registered owners with a single file that contains any changes to the countries.)

GeoQuiz provides a wonderful learning experience that will hopefully find its way into all classrooms. It just might make the geography crisis a thing of the past.

**Joe Kohn**
**San Rafael, CA**

## INSIDE INFORMATION

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## THE RANDOM HOUSE ENCYCLOPEDIA

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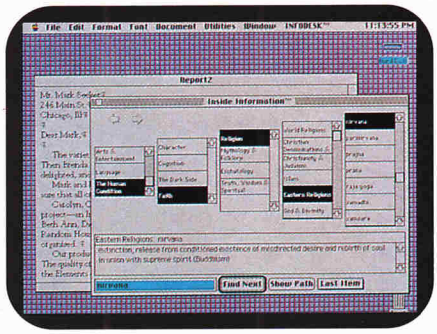
How many times have you been working at your computer and wished you had your reference volumes at your fingertips instead of across the room or downstairs in the den? Well, with two applications from Microlytics' INFODESK series — Inside Information and The Random House Encyclopedia — accessing information is as easy as pulling down the *Apple* menu.

Each INFODESK reference set delivers a wealth of information at the point and click of a mouse. After you've loaded the programs (see the installation section below), select *Switch Reference Sets* from the *INFODESK* menu and choose either Inside Information, a hierarchical dictionary (one that organizes words categorically instead of alphabetically), or The Random House Encyclopedia, which has more than 20,000 entries on a variety of topics. (All INFODESK reference sets have the same interface, so moving from one environment to the other doesn't involve learning any new commands.)

### INSIDE INFORMATION

Unlike conventional dictionaries, Inside Information organizes data by word classes such as *Nature*, *Science & Technology*, *Domestic Life*, *Institutions*, *Art & Entertainment*, *Language*, and *The Human Condition*. These classes, in turn, are divided into 20 subclasses, subclasses are divided into 125 categories, categories are partitioned into 700 subcategories, and each subcategory consists of 50–200 definitions.

You can browse the Inside Information database in four different ways: *Outline View* provides access to the seven word classes. If you select a specific word class such as *Nature*, you'll make its three subclasses (*Human Body*, *Living Things*, and *Earth*) appear. Double-clicking on *Human Body* calls up its categories (*Anatomy*, *Medical Problems*, *Physical Appearance*, and so on). Selecting one of these categories brings even more information into view.




**Inside Information makes data handy.**

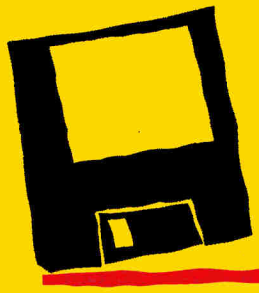
As you delve deeper and deeper into the database you'll eventually get to the word list. If you're searching for information on AIDS, you'll travel from *Nature* to *Human Body* to *Medical Problems* to *Diseases & Infestations* and finally to *AIDS*.

You can also search the database by *Graphic View*, and scroll through columns that display each level (word class, subclass, category, and so on). Double-clicking on a highlighted item causes it to expand and reveal more information; eventually you get to a definition.

By selecting *Reverse Dictionary* from the *INFODESK* menu, you can hunt for a definition by entering a word or word phrase. Inside Information accepts partial words and the Boolean logical connectors "and" and "or" to narrow the search criteria.

*Tree View*, the fourth way to look at data, is available only if you use Inside Information as a stand-alone desk accessory, not as an application in the INFODESK reference set. Updating the dictionary so that you can access it from the *INFODESK* menu via the *Switch Reference Sets* dialog deletes this option. Losing this format (it displays data similarly to a family tree) isn't important, though, because it's just another way of looking at the same information.

Whichever view you choose, keep track of your research trail by placing a bookmark at any point in a search. Once you've marked the spot, you'll be able to return to it later simply by accessing *Open to Bookmark* ➪



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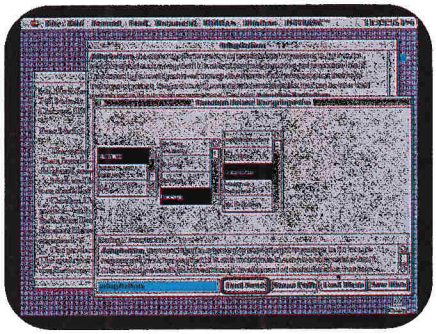
from the *INFODESK* menu. You can copy definitions to the *Clipboard* and paste them into other applications, or print them from *Graphic* and *Outline Views*. On-line help is always available from the *INFODESK* menu.

### RANDOM HOUSE ENCYCLOPEDIA

The Random House Encyclopedia organizes information by subject areas, such as *Geography*, *History*, *Social Science*, *The Arts*, *Sports and Leisure*, *Law*, and *Government*. Similarly to expanding Inside Information classes, you can double-click the mouse to turn these categories into subcategories. Select *Arts*, for example, and you can choose from nine subcategories that include *Literature*, *Visual Arts*, *Music and Instruments*, *Art History*, *Photography*, and *Architecture*. Expand *Music and Instruments* and you can choose from several articles related to this topic.

Once you access an article, you can print it, copy it to the *Clipboard* for pasting in another application, or earmark it for future retrieval by saving it as a *Bookmark*. If this article contains cross-references to other documents, you can proceed directly to the cross-reference by clicking on the *See Also* button at the bottom of the screen.



**The Random House Encyclopedia**

The Random House Encyclopedia lets you find an article by clicking on a vertical list of categories in the *Outline View*; scrolling through columns of categories and subcategories in the *Graphic View*; searching by word or phrase with the *Reverse Dictionary*; and clicking the Find command for its *Title*.

If these options aren't enough, TIMECHART lets you hunt for important events by time range, from the first civilizations to the modern world. For example, enter "violin" in the *Reverse Dictionary* window, and the program will show 33 occurrences of that word in the *Matches* window. Four of the 33 matches are time periods: 730–760, 1612–1618, 1654–1660, and 1796–1800. Double-clicking on 1796–1800 directs the desk accessory to call up a brief two-line article on the violin in India during British rule.

### INSTALLATION

INFODESK makes information instantly available from the Macintosh desktop. The Random House Encyclopedia package consists of seven floppies, a manual, and a special program that installs the application on a hard disk in a folder you specify. You decide which package modules to install — Basic Encyclopedia Data (categories and article titles), Definitions (article text), or Reverse Dictionary (a utility that searches for an article by its contents). All three modules take up more than 5 megabytes of hard-disk space, but all are necessary to obtain the full benefits of the program.

The installation sequence is easy to follow, takes about five minutes from start to finish, and is the same for both programs. Inside Information, however, ships on only five 800K floppies and gobbles up a mere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3.5 megabytes of free hard-disk space if you install all four of its modules — Basic Information Data, Definitions, Reverse Dictionary, and Explicit Material ("sexually explicit language and insulting terms"). These install as individual files in the System folder, rather than in a special folder that you've specified. Once installation is complete, you can transfer Inside Information files manually to their own folder outside the System.

To use Inside information as an INFODESK desk accessory you must update it with the special conversion utility included with The Random House Encyclopedia package. After updating, remove the Inside Information desk accessory from your System folder. The process may sound a bit tedious, but it's worth the effort to access both The Random House Encyclopedia and Inside Information data directly from the INFODESK DA.

Although you don't need to update Inside Information into the INFODESK.DA, if you do, you'll appreciate how painless it is to retrieve data and switch from one reference set to another. You can copy entries to the Clipboard for use with other applications and print definitions or articles.

You pay a heavy price in hard-disk space for relatively brief INFODESK definitions and articles, though. If you want in-depth information available immediately at the point and click of a mouse, investing in a Mac compatible CD-ROM (compact-disc read-only memory) drive may be wiser. CD-ROM technology offers more megabyte for the buck!

**Carol S. Holzberg, PH.D.**
**Shutesbury, MA**

## MERCURY

**MECC**
**3490 Lexington Avenue North, St. Paul, MN 55126, (800) 782-0032**

Word-processing program with graphics capabilities; 1-megabyte Apple IIgs with ROM 01 or greater; two 3.5-inch 800K disk drives; mouse; color monitor recommended; ImageWriter II, LaserWriter, or compatible Epson printer recommended; $89

★ ★ ★ ★ ☆

Sometimes the best way to judge a product is to examine its shortcomings rather than its attributes. This advice seems to hold true especially with word-processing programs. After all, much of this software is so technologically sophisticated it puts typewriters to shame. Let's take a look at Mercury from MECC and see how its features stack (or don't stack) up to the program you're using currently.

Mercury contains 90 percent of the features the best high-end word processors include. With many document-formatting and page-layout options, this program can handle formidable tasks such as creating high-school term papers or office newsletters, but its interface is simple and elegant enough that it won't intimidate children or novice word-processing students. Simply by pointing and clicking the mouse you can create and format documents.

This product is a graphics-based word processor that employs a WYSIWYG (what you see is what you get) environment. You can see the results of using a variety of fonts on screen, rather than waiting until you print. Unlike other graphics-based word


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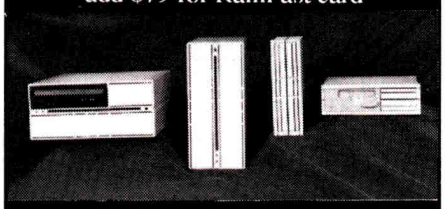

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processors, though, Mercury is fast — only the speediest typists will notice any lag.

Mercury comes complete with standard word-processing and editing tools, too. It contains a powerful, rapid search-and-replace function; a header and footer feature; a toolbox of basic drawing tools; document-layout options that include customized rulers, spacing specifications, and tabs; and the capability to import graphics images and text from other sources. Numerous kinds of type styles, and sizes also add versatility and usefulness to the Mercury package, as do the included style sheets and clip-art pieces.

None of these features necessarily sets Mercury above other word processors. Most of Mercury's competitors could highlight the same options in one form or another. What makes Mercury special is the program's ease of use. You can access every selection and option via the mouse, and pop-up windows, pull-down menus, and dialog boxes are fully implemented throughout the program. Some word processors make only partial use of the point-and-click interface inherent in the IIGS — Mercury almost overdoes it.

The obvious benefit of this menu-driven interface is that it eliminates the need for memorizing keystroke combinations or consulting reference material to perform tasks. (All newcomers to the world of computerized word processors should appreciate this shortcut.) But if you don't use a mouse don't worry; Mercury also recognizes touch-typist's preferences and fully supports keyboard-command equivalents.

Mercury's options also set the program apart from others. Each feature lets you determine its specifications exactly. For example, not only does Mercury's spacing option let you select from standards such as single, one-and-a-half, and double spacing, you can also choose custom spacing and make your format precise. This option lets you use a point system that sets the exact spacing between successive lines of text.

When you select the *Custom Spacing* option from the menu, a dialog box appears, telling you the number of points that make up a single space for the font you're using currently. To change the spacing, simply type the number of points you want between your lines of text. Spacing can, of course, vary from page to page, paragraph to paragraph, or even line to line.

**Mercury's options help you be creative.**

The product's selling points, ease of use and thoroughness of its options, also manifest themselves when you employ headers and footers. Selecting the *View Header* option, for example, opens a screen-size window, complete with an independent ruler for positioning text and information within the header. Four large buttons labeled *Insert Date*, *Insert Time*, *Insert Page#*, and *Insert Total Pages* let you insert information automatically anywhere within the header. All you need to do is position the cursor at the location you want the data to appear and click on the appropriate button.

Eleven smaller buttons let you select the format for the date, time, and page numbering. Once again illustrating the versatility of the Mercury program, you can number pages numerically, alphabetically (upper- or lowercase), or in Roman numerals.

The *Sort* option lets you sort a group of words, numbers, or phrases into a column. This command can organize lists alphabetically or numerically in either ascending or descending order. This feature sounds more impressive and functional than it really is, because it won't work on words within a paragraph; you must separate each word, number, or phrase by a carriage return.

Mercury handles graphics images with the same aplomb as it manages text. Whether you use the drawing tools to "frame" headlines or sections of text, or import clip art from the included pieces or outside sources, Mercury's performance is superior. If you're trying to maintain a straight row or column of images, you can use the program's grids to force the images to align along invisible lines. Once you've placed your graphics image, Mercury lets you manipulate it. You can turn off the grid if you want to position your object somewhere else on the page. A

single Mercury document can include up to 100 objects or imported graphics.

### CAVEATS

Although Mercury is a good program, it's not without problems. First, it can't deal with what it terms "collisions." In other words, the program makes no allowance for wrapping text around a newly placed graphics image. More powerful word processors that venture into the desktop-publishing domain (something that Mercury doesn't claim to do) feature automatic word wrap. This shortcoming means that if you intend to use graphics images, you must plan the appearance of the page and leave adequate room for importing your pictures. Because you can't see your graphics images in the text mode, but you can see text in the graphics mode, the manual suggests you type your text first, then place your pictures later.

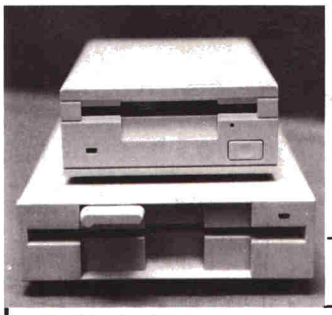
Other drawbacks that might make power users pause include the program's lack of footnoting, spell checker, and thesaurus capabilities, its inability to create "bullets" that set off items (although you can use the drawing tool to get around this one), and its document size limitations.

Mercury can create documents up to 50 pages in length, but that number is subject to the types of fonts you use and the number of graphics images you employ. Multiple fonts, drawn objects, and imported clip art require quite a bit more memory than standard text. You'll find no in-program method for chaining documents either.

Overall, though, Mercury is a strong program. Its deficiencies simply help define its niche. If you're working on a master's thesis or a professional presentation, you'll probably want something a little more powerful. If you're new to word processing or have simpler needs, Mercury's ease of use and speed make it an excellent choice. Classroom teachers and perhaps small-business owners might be surprised and pleased to know that a special version of Mercury even supports GS/OS System 5, allowing it to run on networks.

MECC has long been associated with useful, well-designed, and reasonably priced programs. Mercury certainly fits that description. ❑

**James V. Trunzo**
**Leechburg, PA**

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# EDUCATION'S NEW ORDER

By DAVID D. THORNBURG, Ph.D.

**Does television's power to shape kids' opinions and feelings rob them of independent thought?**

SOME YEARS BACK WHEN I WAS WADING in the ocean on the coast of California, a length of seaweed wrapped around my legs and I was pulled down by the undertow. I felt completely helpless. Fortunately, I didn't fight it, and I soon bobbed to the surface and swam to shore.

That feeling of helplessness came back to me this past January as I watched the Persian Gulf situation explode. As teachers, how do we explain war to our students, and how do we deal with their pain and uncertainty? An incessant barrage of information — televised accounts broadcast around the clock — sweeps us along and only adds to kids' confusion. There's no doubt that TV's an *easy* way to get information — it asks for nothing from its audience but attention. You needn't move, think, discuss, or even form an opinion. All you have to do is sit still, be quiet, watch, and listen. But does the power of this passive medium to shape its viewers' opinions and feelings rob them of independent thought?

In some ways, lecture-based classroom instruction isn't much better. The expert shares information with the novice on a one-way path, asking nothing in return until exam time rolls around. Lectures stand in contrast to interactive methods of instruction, which require the learner's active engagement. Once you interact with the world, you're empowered — you weigh evidence, develop opinions, and decide what stand to take.

Taking the Iraqi conflict as an example, I suggested to the teachers in a workshop I was conducting at the time that they involve children in projects that would give voice to feelings and provide some control over their access to information. Instead of passively watching events unfold on TV, students could actively study the region's geography, economy, and history, thereby learning a great deal about Mideast cultures.

I demonstrated one such application of interactive technology by using Software Toolworks' **World Atlas** on CD-ROM ($109.95; 60 Leveroni Court, Novato, CA 94949, 415-883-3000). Within a few mouse clicks we'd zoomed from a view of the world to a detailed map of Kuwait. Another click and we landed in a State Department summary of the politics of the country. Another few mouse clicks and we focused on Iraq, Saudi Arabia, Israel, and other countries connected in some way with the Mideast conflict. At any time, I could have stored text and pictures on disk to incorporate into a detailed report.

This excursion through the conceptual space of geopolitics was conducted in the span of a few minutes. Teachers asked the kinds of questions students would ask: Between Iraq and Kuwait, who has more oil (Iraq), who has the higher per-capita income (Kuwait), and so on. The ability to ask questions and get answers with the aid of the computer suddenly gave the teachers a sense of control, and provided some form of comfort.

Teachers and students can also press word processors into service for recording feelings, writing letters to servicepeople or politicians, and publishing a school newspaper. They can use CD-ROM-based encyclopedias to facilitate research on the geography and history of the area.

The active study of the Mideast situation serves as a model for learner-centered instruction in other subjects. But for that to work, the teacher must be willing to relinquish control as content expert. With the Mideast that's easy; few of us know enough about the area to be considered expert, so we're willing to learn alongside our students.

With the attitudes and support systems to encourage "proactive" learning, student engagement with the content is ensured. In pursuing a project, students will develop skills and attitudes needed to learn new subjects. The "drawing out" that defines education (from the Latin *educere*, "to lead out") involves more than just drawing ideas out of the student's mind — it entails drawing the student's mind out of the confines of the classroom and into the larger world around us. ❑

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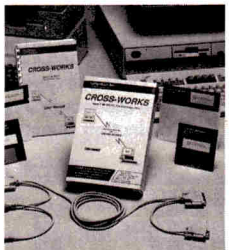

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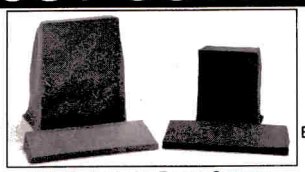

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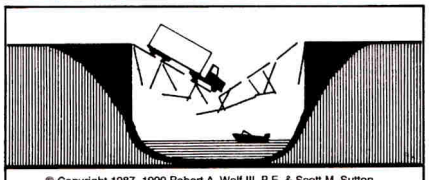

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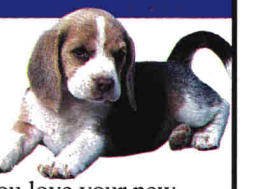

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EDITORS' CHOICE

# KID PIX !

**By THE STAFF OF INCIDER/A+**

Work, according to Tom Sawyer, "consists of whatever a body is obliged to do. Play consists of what a body is not obliged to do."

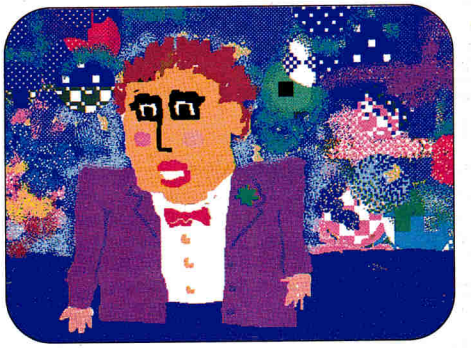
Keep that nice distinction in mind as you play with **Kid Pix**, Broderbund Software's Macintosh painting program for children (1 megabyte of RAM required for 9-inch monochrome monitors, 2 megabytes for color). Was Kid Pix obliged to feature an exploding eraser? Does a paint program need to splash random blobs all over the screen? Is it necessary to shatter a painting like broken glass? Does the undo command have to say, "Oh no!"?

No, none of Kid Pix's craziness is necessary. It's just plain fun. Kid Pix is crazy because it's based on a crazy idea: All kids are artists. Do you believe that? Does every child have the gift of drawing? If you think not, forget Kid Pix. But if you want to give your youngsters a chance to find out how much fun it is to be creative, give them Kid Pix.

Do you remember the first time you sat down to use a painting program? Maybe it was MousePaint on the Apple IIc, maybe it was the original Dazzle Draw. Remember how you felt? It was liberating — it felt like dipping your fingers into the paint, except that your fingers stayed clean.

Kid Pix sets you free again. It's designed to be fun, not to create color separations or mimic photographs. Instead of clip art, Kid Pix uses stickers. Instead of 10,000 TrueType fonts, Kid Pix has a talking alphabet. And instead of a screenful of menus — pull-down, tear-down, tear-off, rip-off, and clutter-up — Kid Pix lets you turn off the menus altogther. That way kids can't make any major mistakes. "Of course I had a lot of fun with Kid Pix," says Senior Editor Paul Statt. "But, more importantly, my daughter loved it. She's 2, and a tough critic."

Kid Pix talks to kids in English or Spanish, and even lets them record their own voices. It's not recommended for high-level artistic work, but it does take advantage of 16 colors, and some of its crazier features, such as the ability to outline figures in color, have some potential for serious exploration.



**No one's too young or too old to get a kick out of Kid Pix. Crazy visual effects mean wacky fun for kids of all ages.**

Kid Pix is so much fun that you may just talk your kids into doing some actual work with it. It doesn't paint picket fences, but it does pack a lot of power — and it also has an exploding eraser. Kid Pix is available for $49.95 from Broderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101, (415) 492-3200.

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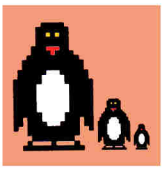
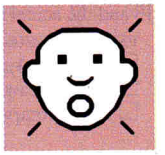
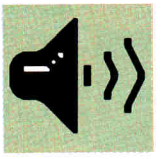


**The Kid Pix rubber stamp lets you create pictures even if you can't draw a line — 112 different color "sticker" images you can paste in three sizes. If that's not enough, you can even create your own.**



**"Oh no!" Among Kid Pix's extras is a talking "undo" command that takes the sting out of inadvertent errors by flashing a cartoon face on screen. Just click and the last thing you did will disappear.**



**A dazzling array of Kid Pix sound effects — from gurgling paint and exploding firecrackers, to talking letters (in English or Spanish) and recorded music and messages — keep kids entertained.**

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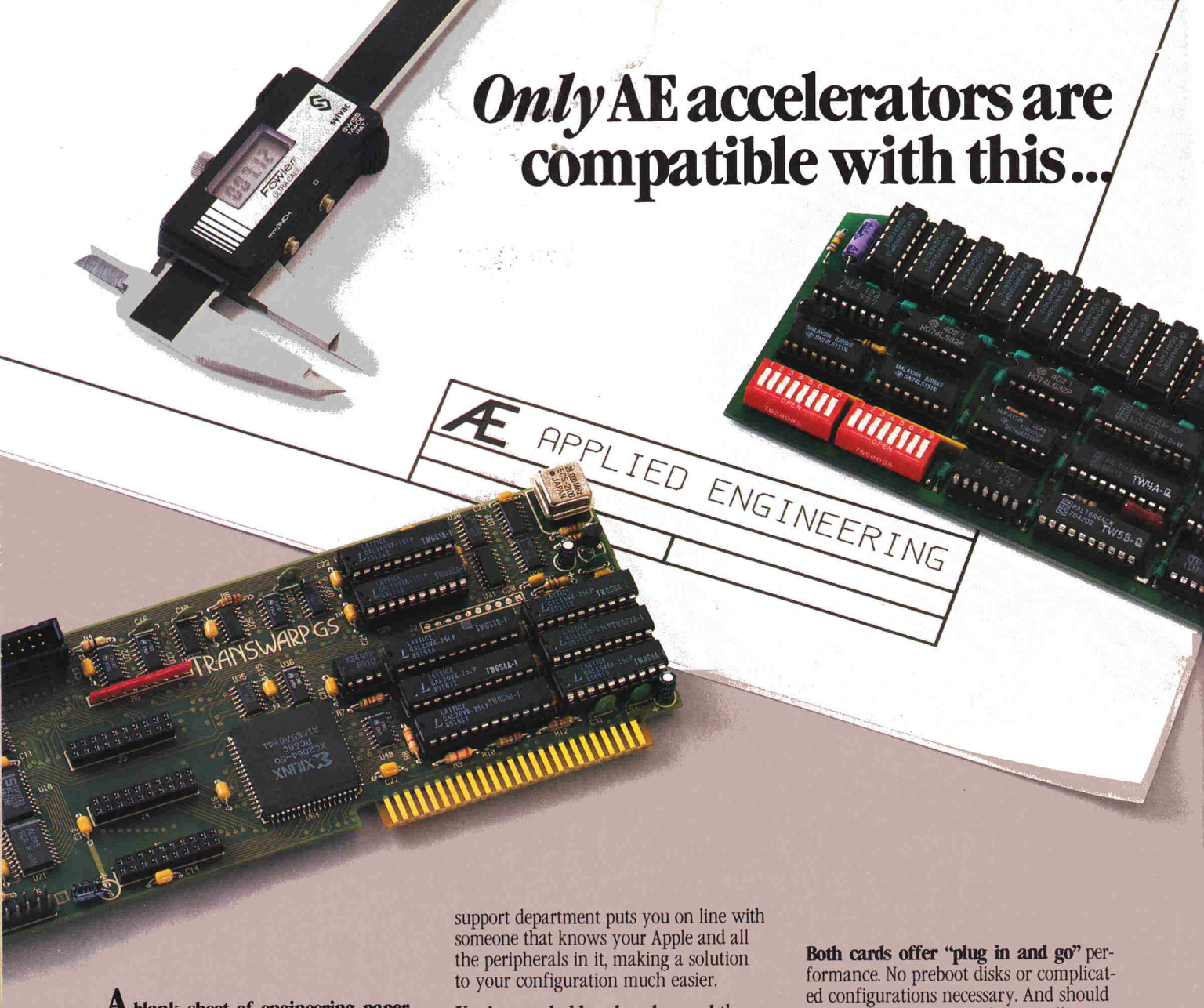


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