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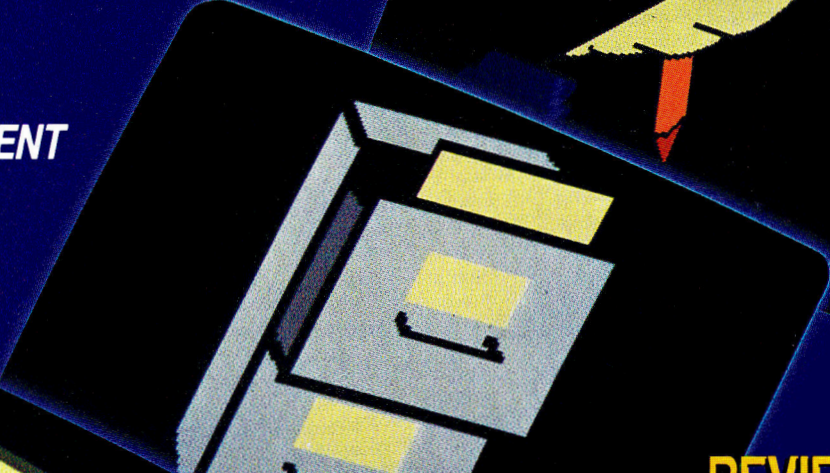
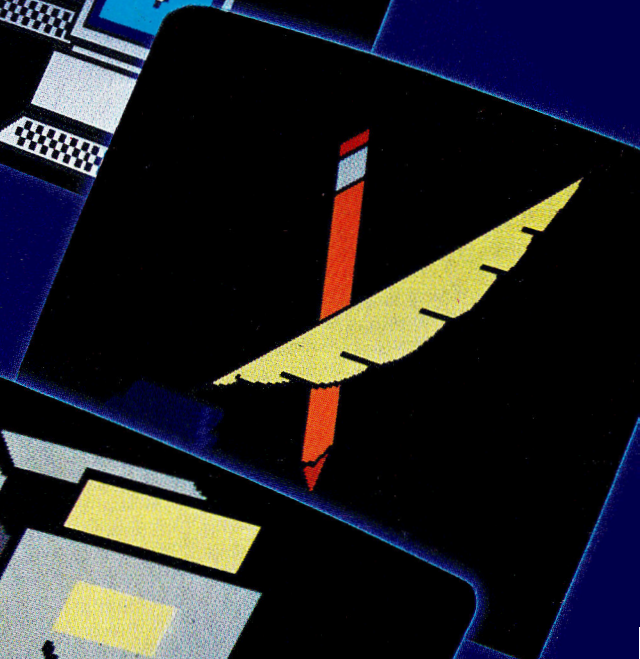
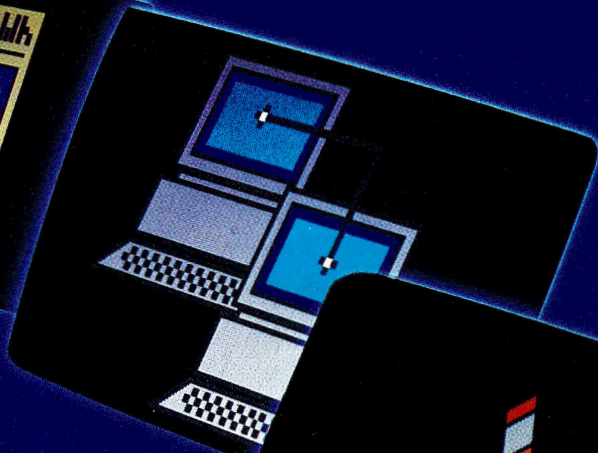
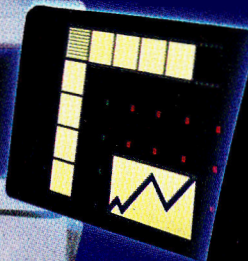
**Organize Your  
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P. 64**

THE APPLE II MAGAZINE

# incider

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July 1988  
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## GSWorks

- ▶ SPREADSHEET
- ▶ PAGE LAYOUT
- ▶ COMMUNICATIONS
- ▶ WORD PROCESSING
- ▶ DATABASE MANAGEMENT
- ▶ GRAPHICS

### REVIEWS:

Destroyer  
GS ComputerEyes  
Pharaoh's Revenge  
WordPerfect IIgs 2.0

**PLUS:**

**22 Other Products Rated!**





# WHAT'S A TAITO?

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*And that's just the beginning. Taito practically started the video game industry with our classic arcade hit, Space Invaders.™ And over the years, Taito has created more than 1,000 other great action games for arcade and home play.*

*Now Taito has something equally exciting for you to slip into your home computer. Taito is bringing the same pioneering spirit, technical quality and excitement that made us the arcade leader to your Commodore, Amiga, IBM, Apple and Atari computers. Home computers will never be the same.*

*Taito is the arcade leader for a very good reason. We consistently make great video games that bring more action and value to the people who play our games. And literally millions of people play our games in arcades and homes all over the world.*

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*That's why nobody but Taito can bring you more of what you're looking for in home computer video games. One thing's for sure. You don't get to be the biggest in the arcade business by making run of the mill video games.*

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ARKANOID: 33 screens of space-age excitement. Award winning coin-op hit. Over 1 million sold in Japan. "One of the best ever."—Electronic Game Player Magazine.

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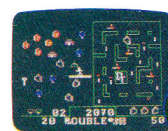
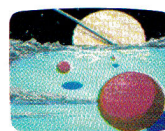
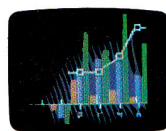
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*"■■■■" . . . . . INCIDER, APR 1987*



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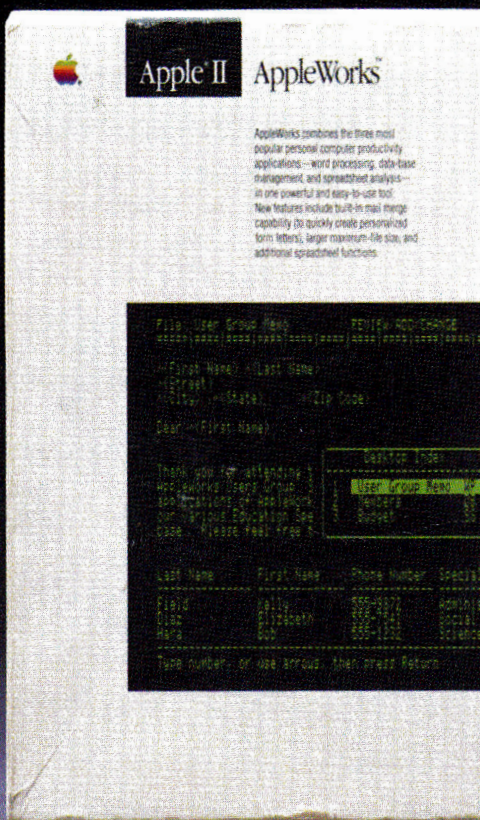
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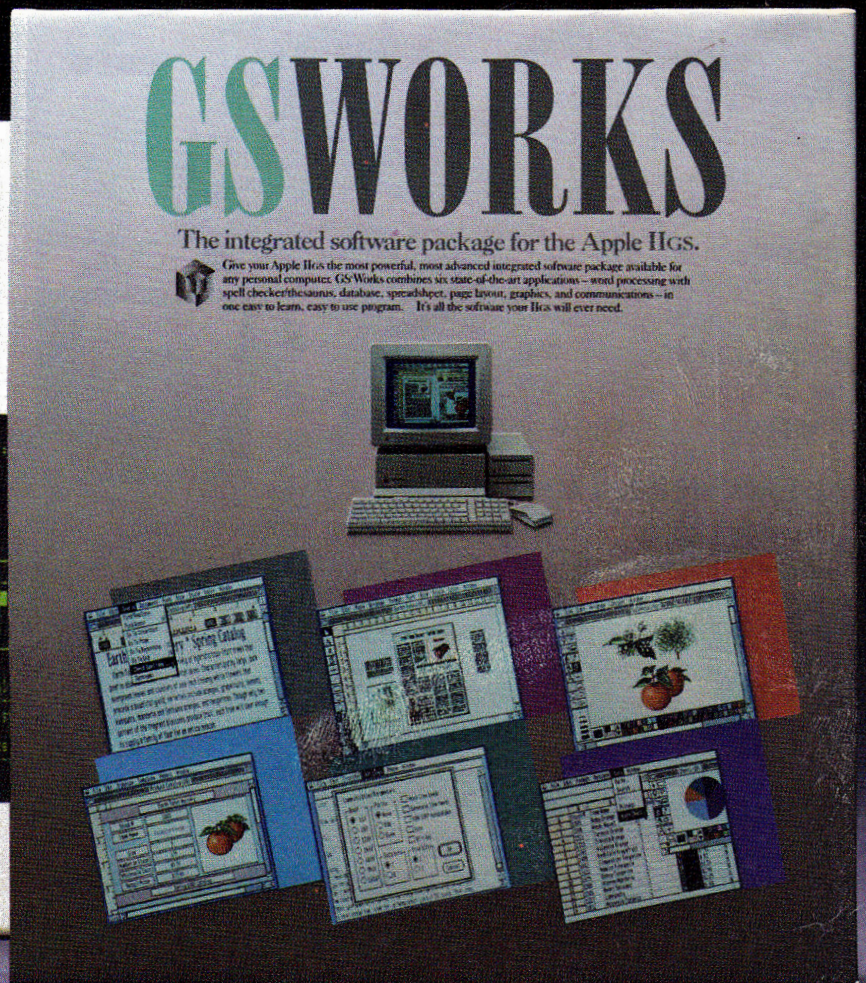
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Better because GSWorks is created especially for the IIgs. To take advantage of the speed, color graphics, and Mac-like interface of the IIgs.

Better because it improves on the three AppleWorks applications — word processing, database, and spreadsheet — with new features and dramatically increased power and sophistication. And adds the other three applications you need and use most — page layout, graphics, and communications.

Better because it combines these six productivity applications in a seamless, window-based environment. To give you an integrated package so advanced — yet so easy to use — that it has no equal on any personal computer. Not even Macintosh™ or IBM™.

Better because it's all the software you'll ever need for your Apple IIgs.

### Upgrading The Three AppleWorks Applications . . .

GSWorks reads AppleWorks files as easily as it reads its own. So you can move from AppleWorks to GSWorks without missing a byte.



But GSWorks improves on the three AppleWorks applications by giving them all the features of true IIgs software. All GSWorks applications work the same way, using pull-down menus and WYSIWYG ("what you see is what you get") document display. Making GSWorks easy to learn, easy to use.

And each GSWorks application is so powerful, so complete, it could stand alone with the best IIgs software in its field.

Our high-powered word processor lets you create stylish documents using different fonts, print styles, and character sizes. With special features like automatic mail merge and the most advanced on-line spell checker/thesaurus ever available for an Apple II computer.

The versatile database lets you create forms, search and sort data, and print reports by just pointing and clicking. So you can keep track of even your most complicated information without complicated commands.

And for number-crunching, there's our mouse-based spreadsheet, with fast, intelligent recalculation and a host of number formatting features. And automatic color charting, when you want to make a splash with your figures.

## . . . And Adding Three Of Our Own.

To give you *the* integrated software package for the Apple IIgs, we've added three new applications that fully exploit the advanced graphics, increased power, and enhanced communications connectivity of the IIgs.



Our state-of-the-art page layout application gives you the sort of desktop publishing power previously available only for Macintosh and IBM. To help you create professional-quality publications quickly and easily.

The GSWorks graphics application is revolutionary, combining the best features of draw and paint programs. With it, you'll have illustration capabilities never before available on a personal computer.

Finally, there's our communications application, connecting your IIgs to a whole world of on-line communications services. And letting you send and receive files from other computers.

### What Integration Is All About.

What really makes GSWorks special is that it's much more than the sum of its parts. It's not just six great applications in a single box. It's six great applications in a single program.

Because GSWorks offers a whole new level of sophistication in integrated software. You can have all six applications on-screen at once. And open as many application windows as you need.

Move from one application to another by simply clicking on a different window. And move information between applications with a single movement of your mouse. Bring spreadsheet figures into a database file. Edit communications files with the word processor. Use the page layout application to combine graphics and text in polished multi-column documents.

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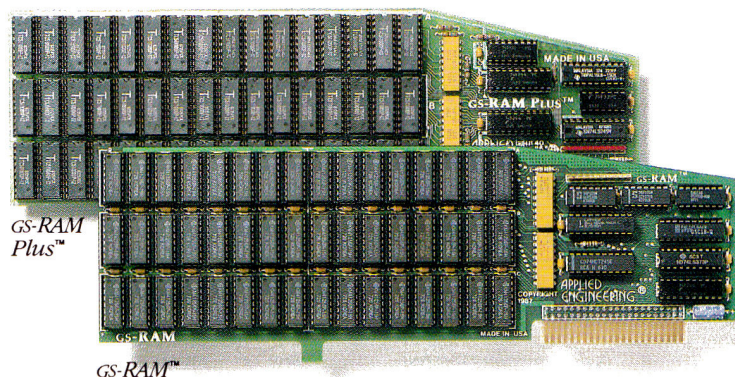
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## Making AppleWorks Even Better

Applied Engineering's Expander program eliminates AppleWorks internal memory limits allowing it to recognize up to 8 megabytes of desktop workspace. You can increase the limits from only 7,250 lines to 22,600 lines in the word processor and from 6,350 records to 22,600 records in the database. The Expander allows all of AppleWorks, including print functions, to automatically load into RAM. The clipboard size will increase from 255 to 2,042 lines maximum. GS-RAM will automatically segment larger files so you can save them onto multiple floppies. And

GS-RAM provides a built-in print buffer that allows you to continue working in AppleWorks while your printer is still processing text. You can even load Pinpoint or MacroWorks and your favorite spelling checker into RAM for instant response.

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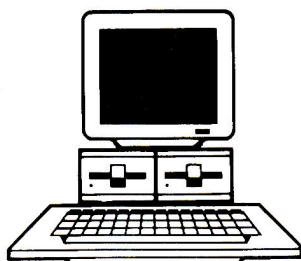
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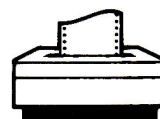
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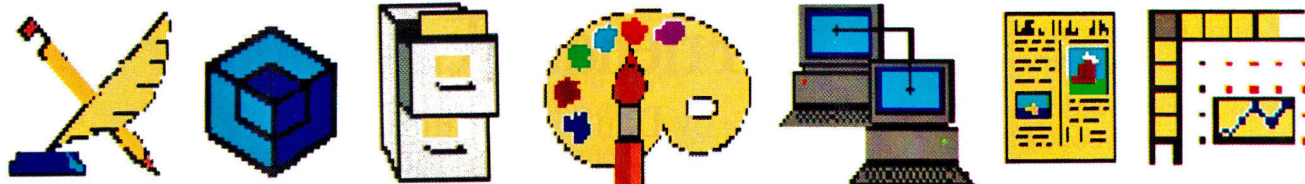
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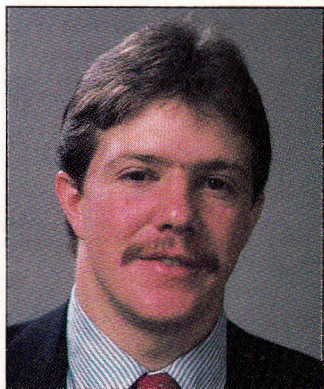
**Editors' Choice** 96

*Field Trip will return in August with a look at biology software for kids.*



## Friendly Persuasion?

by Dan Muse, Editor in Chief



*"Three-and-a-half-inch technology is superior, so Apple isn't really trying to create the future; it's simply trying to push it along."*

There's talk on the street of a new IIc.

There's no cause for commotion yet. Apple has made no official announcement or unofficial indication—at least not to *inCider*—that it will announce a new IIc before Christmas. But we spend more time on the street than we do talking to Apple, and we hear that this new IIc will feature an internal 3½-inch disk drive and a faster microprocessor, but that Apple doesn't plan to expand the IIc's 128K of memory. It's important, however, to remember that Apple was developing a new IIc last year, but put the project on hold.

Now, as an Apple II magazine, we're usually excited to hear about upgrades to existing Apple IIs. And we could be excited about the possibility of a new IIc, if someone could answer one question: Why?

The only reason we can think of is to push the 3½-inch disk format. We agree that the handwriting is on the wall—3½-inch disks are more civilized than 5¼-inch. The former holds 800K of information compared to the latter's 143K, and because of their plastic casing, they're sturdier than their less-protected cousins. Three-and-a-half-inch technology is superior, so Apple isn't really trying to create the future; it's simply trying to push it along.

It's our guess that the "new" IIc is actually the IIc Apple didn't release last year, with the addition of a faster microprocessor. By selling a IIc with an internal 3½-inch disk drive, it can now put more pressure on software developers to adopt the format.

Apple's "persuading" developers to put their software on 3½-inch disks, however, creates a problem for those developers, who must either include both disk formats in the package or sell separate 3½- and 5¼-inch packages. This situation may also force the consumer to pay higher prices for software. While some companies will absorb the extra cost of the

3½-inch disk, others will raise prices to cover their expenses. Publishers may also be forced to increase software prices because by offering both disk sizes in one package, they're in a sense pirating their own software.

If you have the traditional setup—two 5¼-inch disk drives—what should you do? The answer is simple, but won't be popular with many II users. Buy a 3½-inch disk drive. It's not cheap, and no one likes to be forced to buy something, but in this case, it may be inevitable. We recommend that you buy an Apple UniDisk 3.5 because it will make your computing life easier, not because Apple and some software companies want you to.

Perhaps we have Apple all wrong. Maybe there's more to this new IIc than a 3½-inch disk drive. The addition of a faster microprocessor is a welcome upgrade. But if this is more than a campaign to push the 3½-inch format, why not add an internal battery-backed power supply, a flat-panel screen, extra memory, an internal modem—in short, why not make it a portable Apple II? But unless Apple drops the price of the IIc, the new disk drive and faster speed aren't much to get excited about.

It's not that we don't like the IIc. It was a great computer when it was first produced about four years ago, and it's still doing the job for several hundred thousand people. However, the IIc and IIe aren't selling well compared to the IIGS. The price points of the IIGS and the 8-bit IIs aren't far enough apart to make purchasing a IIc a logical alternative.

We're happy to see Apple paying attention to the II line, but we can't commend it for announcing a new IIc just to push a disk format. Apple could do more for II users by lowering the price of the UniDisk 3.5 and letting nature take its course. As with most good ideas, 3½-inch disk drives will catch on by themselves. ■



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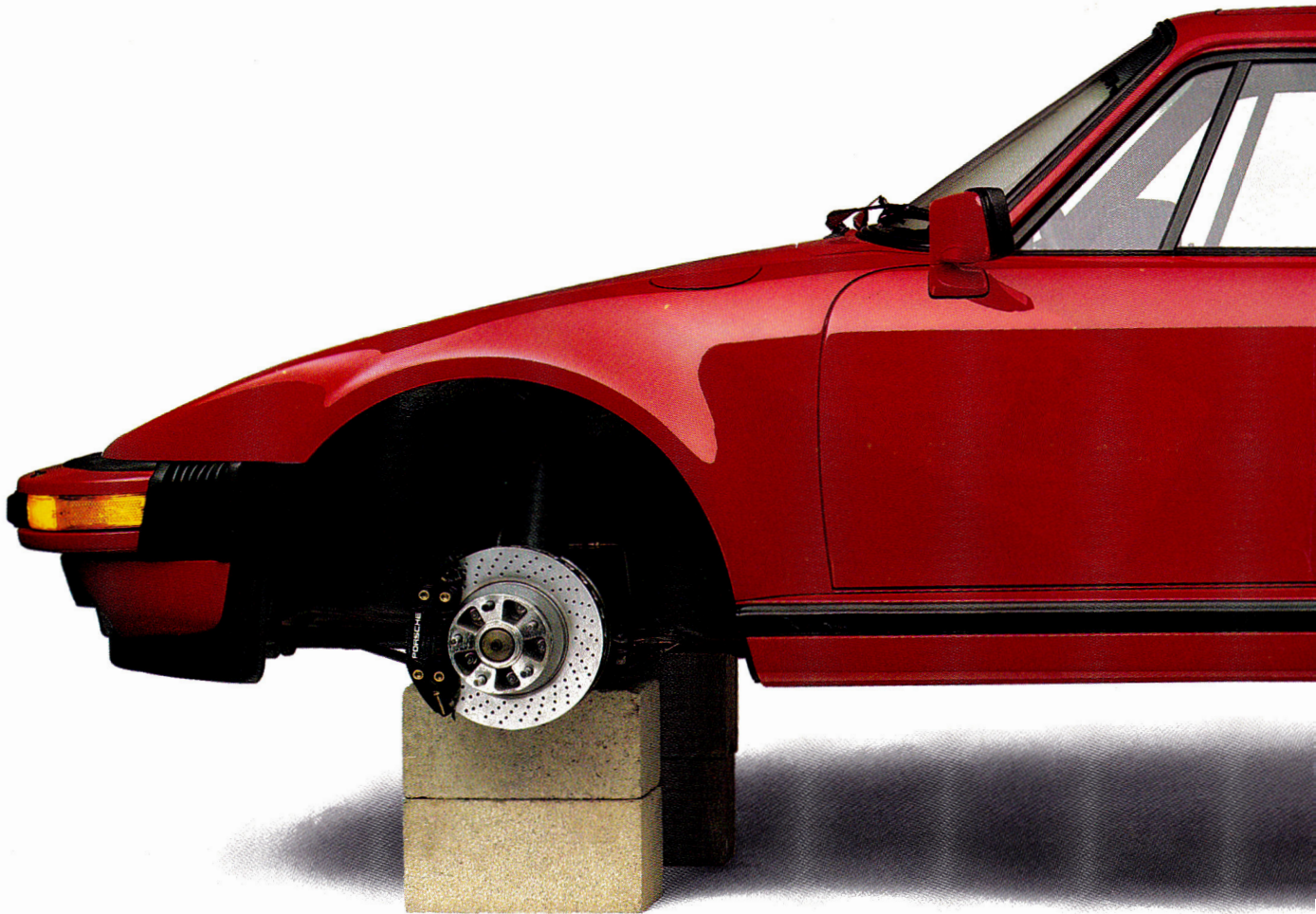
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# Some Apple II owners still



It's like listening to Beethoven's 9th on a transistor radio. Or watching the Super Bowl on a five-inch screen.

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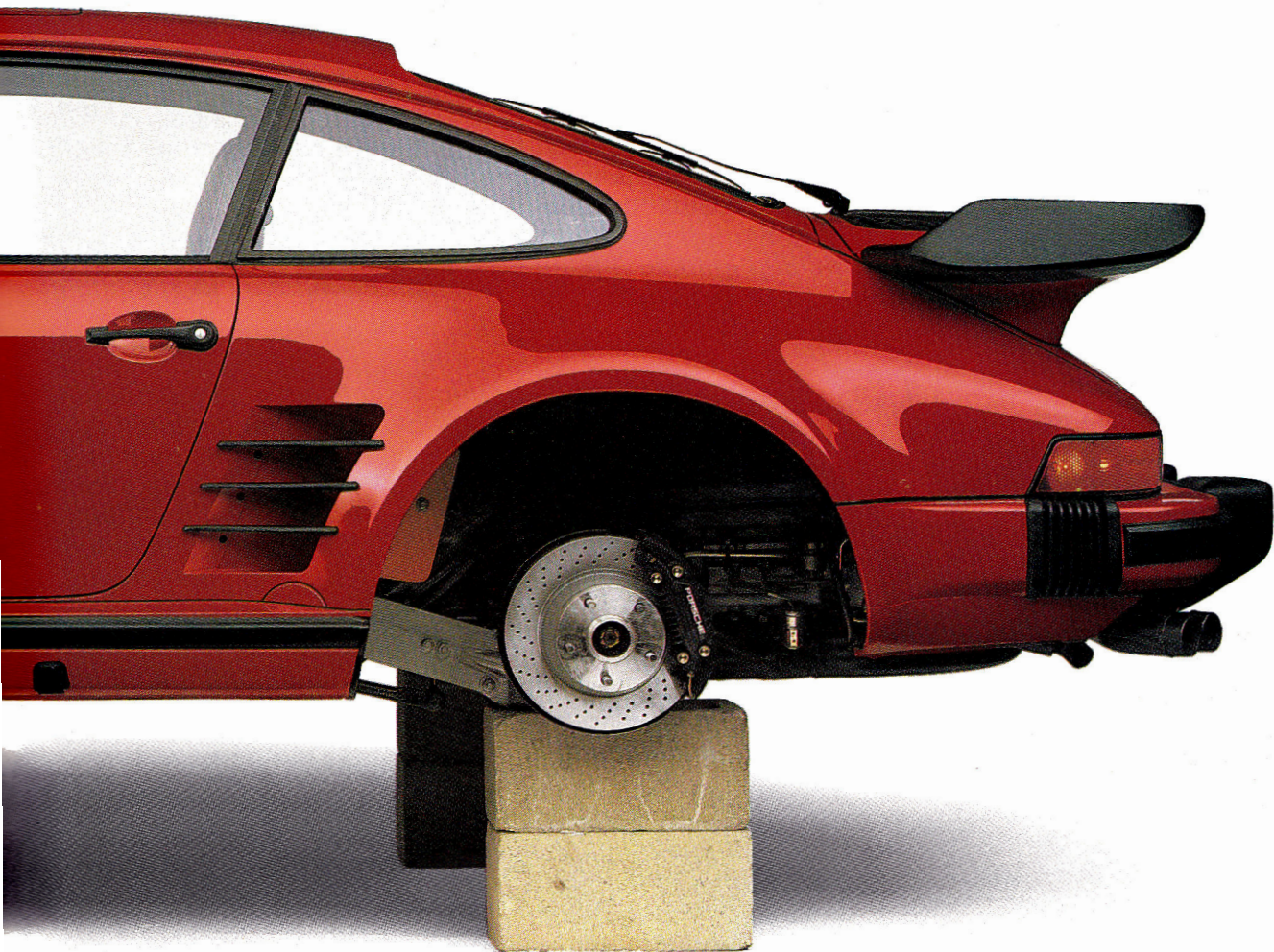
everything from next month's sales forecast to last month's household expenses—then changing the numbers in a flash as you ask questions like “what if I win the lottery tomorrow?” And finally, a database manager to store, sort and organize just about any kind of information you can think of.

Alone, each of these programs is a potent, practical tool.

But put them all together and your Apple II is suddenly traveling in a fast lane you didn't even know existed.



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Circle 282 on Reader Service Card.



## Preview vs. Review

Before endorsing a product, you should test it more thoroughly. Cynthia Field's sidebar "Publishing with 128K" (February 1988, p. 44) was a mini-review of Personal Newsletter in which she wrote, "Here's a real bargain for IIe and IIc users. . . ." A large glass window for \$1 might be a bargain, but what kind of bargain is it if it's broken into pieces?

The package states that the program works with the Apple RAM board. According to its documentation, Personal Newsletter works with a hard disk and you can use ProDOS pathnames to select your files. This isn't so. You must have your program disk in your drive at all times, and the program will access only a data disk in one of your drives.

The printout's quality is terrible. Additionally, I had to crop pictures—to print a whole face, I had to enter it in pieces.

**Don Prohaska**  
7711 Bay Avenue  
California City, CA 93505

*The sidebar's introductory paragraphs state that it's a preview. All versions were 1.0, indicating that they were available only recently. Cynthia Field also noted that Softsync had just started shipping when she wrote the article. Please recognize the difference between a review and a preview: When we preview a product, we don't grade it because it's still in the testing stage.*

*According to Rod Campbell, Softsync's Product Manager (162 Madison Avenue, New York, NY, 212-685-2080), when the article appeared in inCider, an upgrade, version 1.2, was available from the company at no charge to correct both the RAM-board and hard-disk problems you encountered.*

*Your printing difficulty was a documentation problem. You're right—the manual didn't explain this clearly. To print, you must double the size vertically. This lets you see more on your screen when inputting so that you can*

## Data-Strips Update

*inCider* will no longer be printing data strips to accompany the program listings in each issue. Data strips will be offered, however, on a subscription basis—just mail us your name and address and \$9.95 (check or money order) to cover our costs and we'll send you 12 monthly sets. All programs published in *inCider* are also offered on the *inCider* BBS (603-924-9801) and can be downloaded free of charge. *inCider's* editorial offices are located at 80 Elm Street, Peterborough, NH 03458.

*better judge what you're creating. Also, because of your Apple's limited memory, it's not unusual to have to crop digitized images.*

*Readers can contact Softsync for any available product upgrades. (The current version of Personal Newsletter is 1.4.)* —eds.

## Guard Your Manuals

I purchased Beagle Bros' MacroWorks last year and was very satisfied with the product. Unfortunately, during the Christmas confusion I threw the manual away. When I called the company, customer-support people informed me that because the program wasn't copy-protected, they couldn't sell me the manual only. I explained that I understood the company's position and that I wasn't purchasing documentation for a friend.

I then wrote a letter in which I again explained my position and asked whether the Beagle Bros support personnel could at least tell me how to use two functions I didn't understand. I offered to pay for their trouble and enclosed a self-addressed, stamped envelope.

The company responded by returning my letter in the self-addressed envelope—

not even a scrawled "Sorry, we can't help."

**Lafayette French**  
33 Knox Street  
Thomaston, ME 04861

*Beagle Bros' software is so easy to copy the company has to take steps to make illegal copies worthless. The moral of the story is take care of the manual. If you lose the manual, you lose the program.* —eds.

## CORRECTION

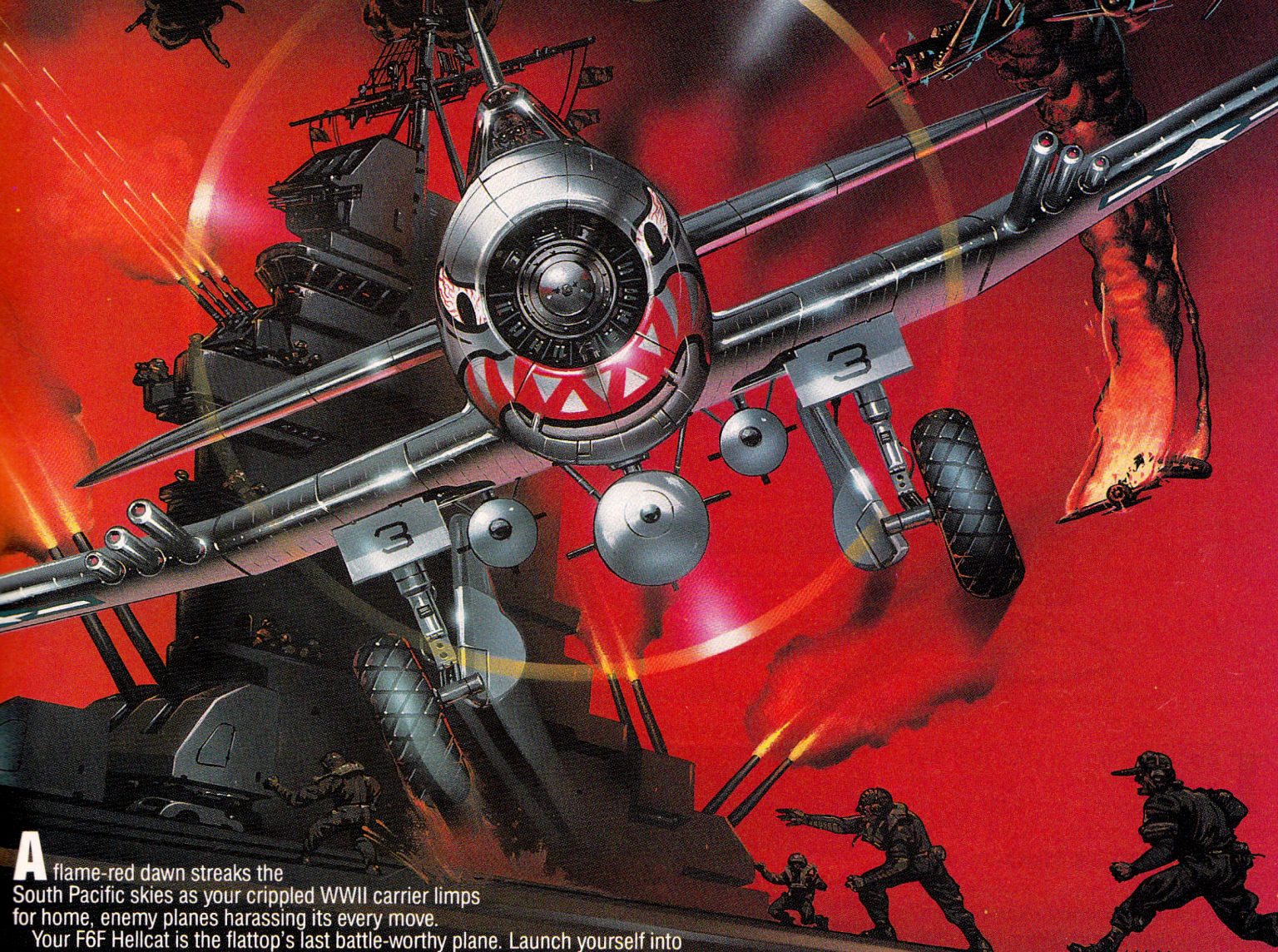
In our May 1988 issue, we inadvertently omitted mentioning Passport Designs in the article "Apple Serenade" (p. 70) and the sidebar "Making Music with MIDI" (p. 82). Passport Designs (625 Miramontes Street, Suite 103, Half Moon Bay, CA 94019, 415-726-0280) produces the MIDI sequencing software Master Tracks and Master Tracks Pro for \$249.95 and \$299.95, respectively. Music Tutor—MIDI, a three-part music-training series, sells for \$229.95, and Polywriter, a music-recording, -transcribing, and -printing program, sells for \$299.95. We also accidentally overlooked the GS MIDI program MusicShapes, from Music Systems for Learning (311 East 38th Street, Suite 20C, New York, NY 10016, 212-661-6096). According to company president Mary Jane De Genaro, MusicShapes provides sampled and synthesized sounds, composition features, and prerecorded music.

*inCider welcomes readers' comments regarding articles, letters, or other topics of interest. We reserve the right to edit letters for clarity, style, and space. Please address your correspondence to Letters, inCider, Elm Street, Peterborough, NH 03458.*



BLAZE YOUR WAY TO GLORY!

# WINGS OF FURY



M. MACKEN

**A** flame-red dawn streaks the South Pacific skies as your crippled WWII carrier limps for home, enemy planes harassing its every move.

Your F6F Hellcat is the flattop's last battle-worthy plane. Launch yourself into action, armed with bombs, torpedoes, rockets, and blazing machine guns.

Brave a storm of fire as you attack enemy warships and islands. Stay vigilant and ready to outmaneuver their planes in desperate dogfights.

Find out if you have what it takes to earn the most precious wings of all—Wings of Fury.



**HOW TO ORDER:** WINGS OF FURY Apple® 128K IIe, IIc, IIgs, joystick required. \$34.95 Visit your software dealer or call 1-800-527-6263, 8am-5pm PT, for direct credit card orders (VISA, MasterCard, Amex). To order by mail, send check, money order or credit card information to Brøderbund Software-Direct, P.O. Box 12947, San Rafael, CA 94913-2947. Californians add 6% sales tax. Add \$3.50 for delivery of one program and \$1.00 for each additional program. Direct orders carry a 10-day money-back guarantee. Allow 4 weeks for delivery.



**Brøderbund®**



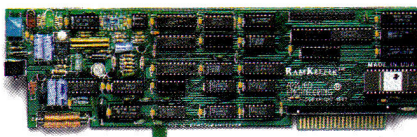
# In about the time it takes to read this headline, you can have the Finder up and



**I**magine. Turn on your IIgs and instantly the finder comes to life! All the speed and RAM power your IIgs was meant to have, packed into one, affordable “electronic hard disk.”

Applied Engineering's RamKeeper.™ A system that works like a hard disk, only better. It retains stored programs *and* data while your computer is turned off (like a hard disk), but gets up and running five times faster. RamKeeper is solid state, has no moving parts and, unlike a hard disk, has no heads to crash and no parts to wear out. And RamKeeper saves wear and tear on your disk drive, because you don't need it nearly as often.

RamKeeper even powers up to two



*RamKeeper lets you keep programs and data in permanent, “electronic hard disk” memory. Turn your Apple IIgs on and you're ready to work.*

memory cards *simultaneously* while your computer is off. And the battery backup we include keeps power to the boards, even during power failures.

Your programs and data remain stored in a permanently accessible state, always ready to run. Your computer waits for *you* . . . instead of you waiting for it.

## **Superior power backup.**

RamKeeper comes complete with sealed Gel/Cell batteries for emergency backup in the event of a power outage. Gel/Cell's are by far the most reliable backup power source in this application. Unlike the Ni-Cads others use, Gel/Cell batteries don't lose capacity if not discharged periodically.

Our Gel/Cell pack gives you up to six hours of total power failure backup. And the sealed battery pack stays *outside* your computer case, where an unlikely leak won't ruin your computer circuitry.

RamKeeper uses a Switching Power Supply — the same technology used by Apple for the IIgs power supply. This design uses energy much more



efficiently to keep your Apple running cooler.

### **Powers two memory cards in the same slot.**

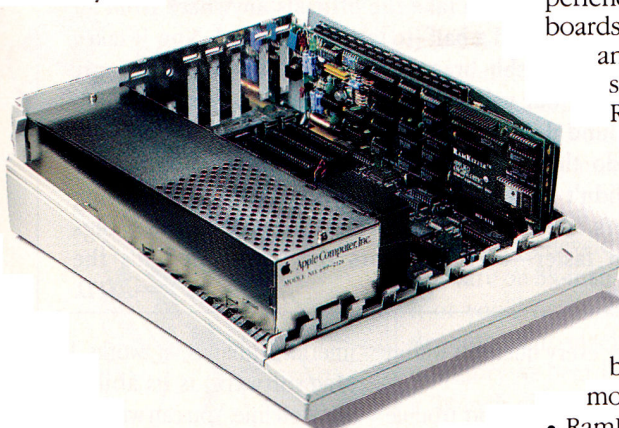
Have Apple's memory card, but now want the features of Applied's GS-RAM card? With RamKeeper, both cards act as one larger card. In one slot. Just attach one memory card to each side of RamKeeper and plug RamKeeper into the slot. And even with two cards, you can still keep slot 7 open with our optional Slot-Mover. All without changing the way either your memory card or your software now operate.

RamKeeper also works fine with only one memory card.

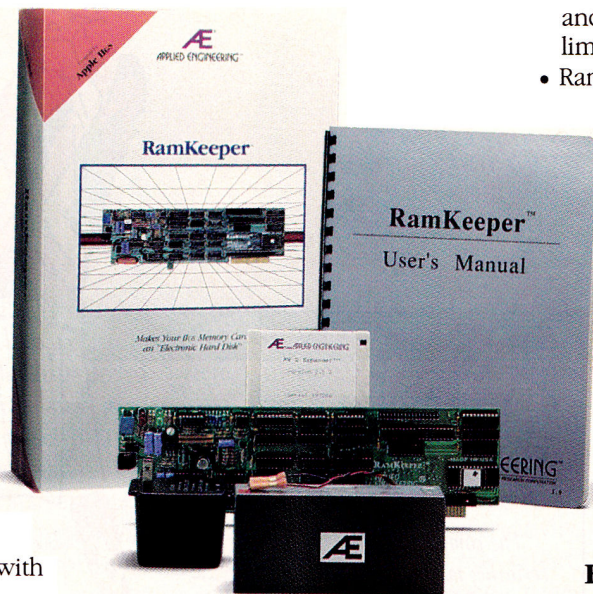
### **Makes all your memory usable memory.**

RamKeeper powers up to 16 Meg. of memory. You can also mix and match different types of memory cards. For example, an Apple card that uses 256K RAM chips and an Applied Engineering card using 1 Meg. RAM chips. RamKeeper firmware automatically configures for two cards when the second card is installed. No need to manually move jumpers.

RamKeeper configures memory linearly to avoid memory gaps that can cause crashes. And you decide how much memory to devote to ROM and to RAM from the IIGs Desk Accessories menu. You can configure Kilo-bytes or Megabytes of instant ROM storage for your favorite programs. And you can change ROM and RAM sizes at any time without affecting your stored files.



*RamKeeper is easy to install. Just plug it in. Even when you use two memory boards, you don't have jumpers. You can have two memory boards but use only one slot.*



*It all comes with RamKeeper ... board, Gel/Cell battery pack, easy-to-understand instructions, and Applied's powerful AppleWorks Expander software.*

### **Protect from program crashes.**

Reinstalling operating software is not fun. With RamKeeper you'll never have to. Since RamKeeper controlling firmware is in an EPROM, a program crash can't take out the operating software.

### **Verifies data security.**

RamKeeper firmware uses optional startup checksums to verify that no data was lost while the power was off. The firmware also runs ROM and RAM memory tests without disturbing data on the card.

### **Significant differences.**

Applied Engineering's longer experience with battery-backed memory boards shows in the way we designed and built RamKeeper. There are significant differences between RamKeeper and other systems:

- RamKeeper includes a Gel/-Cell battery for 6 hours of total power failure backup, others use the shorter-life Ni-Cads and charge extra for them
- RamKeeper has external battery storage, others have a more risky internal storage
- RamKeeper powers up to 16 Meg., others power only up to 8 Meg. maximum
- RamKeeper permits mixing and matching different memory cards

and chip sizes, others have more limited combinations

- RamKeeper automatically configures for two cards, others have manually-moved jumpers
- RamKeeper configures linearly to eliminate memory gaps, others don't
- RamKeeper includes EPROM-protected operating software, others use floppy installation
- RamKeeper's software expands AppleWorks internal limits, others don't
- RamKeeper includes disk-caching software, others don't

### **Free AppleWorks Enhancement software.**

Applied Engineering's powerful AppleWorks Enhancement software comes free with RamKeeper. It's well worth the purchase price alone. Our software makes AppleWorks faster and far more powerful by eliminating internal memory limits. Word processor limits increase from 7,250 to 22,600 lines. Database limits increase from 6,350 to 22,600 records. Clipboard limits increase from 255 to 2,042 lines. Our software even automatically segments large files so you can save them on multiple floppies.

In addition, RamKeeper comes with the most powerful disk-caching program available anywhere. The cache tremendously accelerates access time to the Apple 3.5 Drive. Creating, in effect, a speed booster on top of a speed booster . . . a potent combination that runs most applications up to *seven times faster*.

RamKeeper is proudly made in the U.S.A. and is backed with a five year parts and labor warranty. And a 15-day money-back guarantee.

### **Only \$189.**

To order or for more information, see your dealer or call (214) 241-6060, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering, MasterCard, VISA, C.O.D. welcome. Texas residents add 7% sales tax. Add \$10 outside U.S.A.

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**The Apple enhancement experts.**  
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by *inCider* staff

## A QUANTUM LEAP

Apple Computer (Cupertino, CA) and Quantum Computer Services (Vienna, VA) announced in May that "AppleLink Personal Edition" would become available to the Apple II public this summer.

AppleLink, Apple's in-house telecommunications network, previously available outside Apple only to dealers and computer magazines with Macintoshes, is now open to anybody with an Apple IIe, IIC, or IIGS and a modem. At press time, Apple and Quantum had not decided what AppleLink Personal Edition would cost, but they assured us the price would be reasonable and comparable to other on-line services.

AppleLink Personal Edition will have two parts, The Apple Community and General Services. General Services offers everything that made QuantumLink such a hit for Commodore 64/128 users: People Connection, Financial District, Recreation Center, Clubhouse, News Room, Mall, and Learning Center.

The Apple Community is specifically for Apple II owners. You can take a class in Applesoft BASIC programming or AppleWorks applications at Apple University, or test-drive some demo software from Apple developers such as Beagle Bros, Broderbund, and Davidson. Your Apple can automatically download all the technical notes that pertain to your machine every month. AppleLink also holds an extensive Apple reference library, with product

### SPOTLIGHT ON.....

## CADDYING FOR THE LPGA

*"The computer has certainly made all our lives a lot easier, and we can do more than we ever dreamed."*

Not so unusual, your might say—but you might be surprised to learn that statement comes from an official on the pro-golf circuit. Tracking down birdies and bogies is par for the course for a team of Apple IIs following the Ladies Professional Golf Association tour. Four Apple IICs and modems travel with the LPGA to its numerous tournaments across the country; the fifth computer, an Apple IIe with expanded memory, modem, and letter-quality printer, waits back at the LPGA's headquarters in Houston, Texas.

The modems mean that Jim Webb, director of operations for the LPGA, can send scores "instantly" back to Houston for compilation, and even to wire services and newspapers such as *USA Today* as soon as the tournament's over. Webb notes that newspapers like to get tour results by modem, because "they don't have to type it all in."

The LPGA's first Apple belonged to a tournament official. Webb hired a programmer to create the BASIC software that manages the statistics; it tracks each player's daily hole-by-hole scores, tournament-round scores, number of career wins, and average score.

"At night, it used to take the officials anywhere from an hour to an hour and a half [to tabulate results]. Now it takes six minutes," Webb brags. "Last year, we were the only professional tour using computers. Everyone else was fumbling around doing statistics by hand."

How do the golfers react to the creeping technology? "They didn't even know for two years that we were using computers," Webb recalls. "But now they know that things go much faster—over the years they've learned it's the computer."

—P.O'D.



information and reviews.

The Industry Connection lets you talk back to major software and hardware developers—and to all the publications, like *inCider*, on the Magazine Rack. An Ask Apple Forum promises

to answer every question within 48 hours.

You should have no trouble using AppleLink, especially if you have a mouse as well as a modem. More important to AppleLink's ease of use than the Apple

interface (that is, it works like Mac software) is its ability to work off line: You can write whatever messages, mail, or bulletins you want to send *before* you log on, and you can save the mail you receive to disk and read it later,



after you log off. You waste less money and less time, which is the promise of telecommunications.

Your local Apple dealer sells AppleLink Personal Edition, or call Apple for details at (408) 996-1010. —P.S.

## CREATIVE CONTEST

Okay, all you Paintworks Gold owners, get painting and create something!

First prize in the Paintworks Gold Contest is a complete library of Activision IIGS software. Second prize is your choice of two Activision games or productivity packages; third prize brings you one piece of software.

But you have to paint fast—

the deadline's July 1. If you're really in a hurry, call the Activision Bulletin Board System (BBS) with your modem and upload your picture. Leave your name and phone number with the system operator.

If you don't have a modem, print a copy of your work of genius, and rush your en-

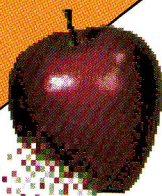
try—on disk and paper—to Paintworks Gold Contest, Activision, P.O. Box 7286, Mountain View, CA 94043.

An independent crew of critics from Activision and *inCider* will select the best artwork on the basis of creativity, originality, and raw talent. Your work will grace the pages

of *inCider*. Start painting, and good luck. —L.L.

*We're always looking for news of the Apple world. If you're making news, send your press releases and photographs to News Line, inCider, Elm Street, Peterborough, NH 03458.*

APPLE BITS



■ **Video Technology and Central Point Software**, the wizards of the Laser 128, are putting together a **GS clone**.

■ Apple will introduce a new operating system for the IIGS, called **GS OS**, in the fall. It will allow an Apple IIGS to read Macintosh and MS-DOS text files.

■ **HyperDyne Software**, the folks who brought you Command.Com, the MS-DOS look-alike interface for the Apple II, will release a **BASIC dialect** that will run under Command.Com. Next will be a C interpreter.

■ **Apple** applied all kinds of muscle to get developers to put software on **3½-inch disks**. "Do it or you'll never see another development machine" was one story we heard. "If it's not a 3½-inch disk you can't show it in an Apple booth at an Apple show," was another.

■ **Bad news**: our first report of a **ProDOS "virus"** on an on-line service. Let us know if you hear more.

■ **Steve Wozniak** thinks the choice of cheap, plentiful, **8K DRAM** chips for the original Apple II had a lot to do with its success. Where does that leave the IIGS with dear, scarce, 256K DRAMs, Woz?

■ The Federal Office for Examination of Harmful Publications in **West Germany** has changed its mind: MicroProse's popular submarine simulation, **Silent Service**, isn't a harmful publication after all. Maybe F-15 Strike Eagle, Gunship, and Airborne Ranger will get a fair shake now. But what will the censors make of CinemaWare's Rocket Ranger?

■ **Silicon Valley** is crowded with Mac programmers, MS-DOS programmers, Amiga programmers, and marketing assistants. But where are the **GS programmers**?

■ **Activision** has hit the road. Its new home is 3885 Bohannon Drive, Menlo Park, CA 94025. The number is (415) 329-0800 or 329-0500.

■ The educational folks at **Mindscape** have agreed to produce a series of multimedia mathematics materials for grades K-6 in conjunction with the state of California. **Adventures in Mathland** will be based on the California Mathematics Framework, and will include software, guided off-line activities, and an optional videodisc.

■ **Donald F. DeSorte**, of Acto, NJ, became the 100,000th user of the **GENie** consumer-information service (Rockville, MD) in March. DeSorte and his family took a three-day trip to the nation's capital, courtesy of GENie. The deal was especially sweet for DeSorte, who had a free trial subscription to GENie in the first place in conjunction with his subscription to *Open-Apple* (Overland Park, KS). (We assume he paid for that.)

■ The word among hardware makers (at press time, early May) is that the price of random-access-memory (RAM) chips is so high that development is crawling. Is using "bizarre" chips that nobody else needs or wants the solution?





# Break into Apple Corporate Headquarters.



Before you get overly excited, we're not giving you direct access to our CRAY mainframe.

But if you have an Apple® II personal computer\* and a modem, we do have a wonderful new information and communications tool for you.

It's called AppleLink® Personal Edition. And it lets you tap into a wide array of information sources provided by Apple Computer. And a whole lot more.

You can check out the latest products from Apple. Download hundreds of public domain software programs from business applications to educational games. Try out "demoware" programs so you can test

run software before you pay for the actual programs.

You can attend on-line Forums with software wizards, hardware gurus and other prominent personalities from the Apple community.

You'll be able to take classes at Apple University where you'll learn how to master the intricacies and the short-cuts of Apple software programs. You'll have access to special Apple reference libraries where you'll find technical and product information, software reviews and Apple user group news.

In addition to being able to commandeer all this information directly from your keyboard, you'll also

\*To be very specific, you need an Apple IIc, Apple IIGS or Apple IIe enhanced with 128K of ROM, an 80 column card and a Super Serial card. \*\*General Services is provided to you by Quantum Computer





be able to tap into a much richer source of what's new and now: Apple users just like yourself from all over the country. You can chat live on-line with other users, share tips, get insights into program quirks, find out about how other people have solved the problems you're facing now. And soon, you'll be joined on-line by thousands of Macintosh® personal computer users. Which will be even more fun and informative.

And that's just one side of the story.

The other side of the story is something called General Services\*\* where you can watch Wall Street, check out the news or join a group of people who love

the same things you do. Whatever they may be.

AppleLink is so easy to use, you can get on-line with a few clicks of a mouse or a couple of touches to the old cursor buttons. It's really that easy.

Just pick up the phone and call 800-538-9696 ext.450 for the name of the authorized Apple dealer nearest you. Then get ready to modem.

We're waiting for you with open arms.



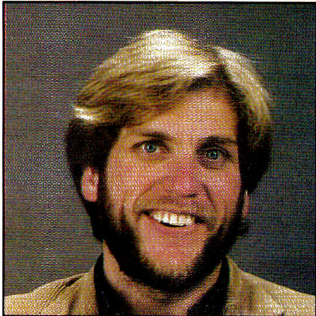
The power to be your best.™

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## Dear Claris

by Paul Statt, Senior Editor



*"You can make AppleWorks fans work smarter and still make millions of dollars. Start selling AppleWorks templates."*

**D**ear Claris Corporation: Let's declare a truce: I promise to stop complaining if you'll do just one little thing that will make you rich.

I won't let your statements in the press that "Claris is a Macintosh software company" upset me. I know you don't mean it; I know you want to "just say no" to MS-DOS. It's not AppleWorks you hate, it's Lotus 1-2-3.

You do like AppleWorks, don't you, Claris? AppleWorks—the most popular software ever, remember? I know you exhibited AppleWorks at AppleFest in Boston in May. The sponsors only had to twist an arm at Apple, call a senator, adopt a U.N. Security Council resolution, and convince the Pope to issue an encyclical to get you to come. But I know you wouldn't have missed AppleFest for the world—your mind was probably on Microsoft. Heck, I miss deadlines, too, Claris—but I'm hardly ever late when the party's for me.

I hear you're lavishing attention on AppleWorks. Is it true that you got the guys at Apple Computer to rewrite it for the IIGS? As Priscilla Mullins might have said, "Why don't you speak for yourself, Claris?" But it's hard to find good GS programmers these days, isn't it? They all run off to Houston—nine of 'em showed up at StyleWare. Guess your new million-dollar headquarters just can't compete with that industrial park.

But Claris, you can make me happy, make AppleWorks fans work smarter, and still make millions of dollars. Start selling AppleWorks *templates*—AppleWorks word-processor, spreadsheet, or database files that *do something*: balance the checkbook, compute grades, write a résumé, check a term paper's style, or run a small business.

People buy templates, Claris. They buy them from *inCider* (*Success with AppleWorks*) and they buy them from tiny companies with tinier ads in the back of *inCider*. I'll bet they'd buy more templates from you, Claris, because you're a big company close to the source—Apple.

You could establish standards for templates. Beagle Bros' UltraMacros might make a nice standard, for instance. UltraMacro programmers could write "task files" to automate a big AppleWorks job without requiring the end user to buy the macro program.

Robert Fowler and Johnny Roller (that's his real name, I think), a couple of landscapers in Ohio with a lot of employees, have written a great UltraMacros task file that automates the payroll for their small business. But they're just that, a small business; they don't have the time to hawk payroll templates nationwide. You do, Claris. You could put a template like PayCalc (that's its real name) into the hands of the small businesses that need it.

But you have to cut Mother Apple's apron strings to do this right, Claris. You have to admit that Mom and Pop sometimes have an Apple II and AppleWorks on the payroll of their small business. Some people who graduated from the eighth grade years ago still use Apple IIs. It hurts to learn that a parent lied; people do use Apple IIs for something besides education.

And make your templates affordable for Jane and John Doe. Mr. and Mrs. Doe have a computer, they have software, but they don't have any idea what to *do* with them.

Greg Hastings, vice president of Pinpoint, a company that makes AppleWorks add-ons but also milks a cash cow called Micro Cookbook, once confided to me the secret of that program's success. I had offered the opinion that a cookbook on disk wasn't versatile—it does only one job. Hastings admitted that you can make a computer do anything, "but people don't want to do everything with their computers, they want to do *one* thing."

That's true of the people who buy AppleWorks and your competitors' integrated software, Claris. I'd rather do it myself, but if your customer wants to pay somebody else to do it, Claris, shouldn't that somebody be you?

Your loyal opposition,  
Paul Statt



# "COPY II PLUS"®

WIPED, REFORMATTED AND DELETED ITS COMPETITION™

—inCider

*Disk Utilities • Backup Program for Copy-Protected Disks*

- **AWARD-WINNING UTILITIES.**

Over 20 built-in utilities, including the ability to delete and undelete files, map disk usage, copy disks and files, view and print files, format and verify disks, and alphabetize the catalog. Also contains drive diagnostics for checking and adjusting drive speed. Plus much more—all in an easy-to-use menu perfect for both novices and professionals.

- **VERSATILE PERFORMER.** Copy II Plus enables you to convert DOS 3.3 files to ProDOS files and vice versa—automatically.

- **SUPPORTS THE IIGs.** Runs great on the IIGs, and makes full use of Apple 1-Megabyte RAM boards.

- **PROTECT YOUR SOFTWARE INVESTMENT.** Make backup copies of protected and unprotected programs—even those with the most sophisticated protection schemes. Use Copy II and you'll always have a backup handy should anything happen to your original disk.

- **EASY TO USE.** Backup parameters for most programs are already on the disk. Simply select which program you want to backup, insert that program disk and you're off. Data and unprotected disks are copied in less than a minute and require only two passes on an Apple IIc, Laser 128 or IIGs.

Take a look at Copy II Plus today and see why *inCider* magazine says Copy II Plus deleted its competition.

**For the dealer nearest you, or to order direct, call (503) 690-8090, M–F, 8 a.m.–5 p.m. (West Coast time).**

**Hardware requirements.** Apple II or Laser computer with 128K memory and one disk drive.

3.5-inch bit copy requires Laser 128EX or IIGs (or Apple II computer with Central Point Universal Disk Controller) and a 3.5-inch IIGs, Chinon or Laser drive.

Copy II Plus is a trademark of Central Point Software. Apple II, IIG, IIc and IIGs are trademarks of Apple.



\$39.95

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Software**  
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(503) 690-8080 Tech Support



# APPLE CLINIC

by William Kennedy, Ph.D.,  
Technical Editor

*Apple Clinic is a forum for discussing and answering your questions and concerns about Apple II hardware and software. Address your correspondence to Apple Clinic, inCider, 80 Elm Street, Peterborough, NH 03458. Because of the volume of letters, most won't appear in print, but expect a response from Dr. Kennedy via postcard.*

## Transformations

I'd like to convert data I prepared with PFS:File to AppleWorks database files. How do you do it?

**Paul Gerlach**  
North Tonawanda, NY

*Not easily. PFS:File uses its own DOS and file structures, so you can't even use Apple DOS commands to load and examine your data.*

*Fortunately, file-translation services are currently available: Send them your disks and they'll convert the files for a reasonable fee. Check our Marketplace ad pages for leads. Burke Software, Data Transfer Division, P.O. Box 515, Dept. 1C, Park Ridge, IL 60068, (312) 823-1357, is one such service.*

*Most of these translation services are fledgling businesses that, I would assume, are eager to please. But I don't have personal experience with any of them, so I recommend you contact them before sending disks.*

## Speaking Up

I recently purchased Applied Engineering's (P.O. Box 798, Carrollton, TX 75006) Phasor card. It has excellent stereo sound, and I can enter text from a BASIC program and hear the Phasor card "speak" using its text-to-speech capabilities.

The system apparently uses a program called TTS, supplied on the Applied Engineering disk, for text-to-speech conversion. I read the documentation, but I don't understand how to write my own programs. Can you help?

**Bruce Painter**  
Rainier, WA

*The Phasor is an excellent sound-generation card for the otherwise tink-tonk beeper installed in the Apple IIe and IIc. Several other similar products are available as well, including some that don't require any additional hardware. And most provide "driver" software that interfaces easily with your programs for sound and/or text-to-speech production. (Cricket owners should read the September 1987 Apple Clinic, "Echo, Echo," p. 20, for programming tips. See also "Making Music," August 1987, p. 38; "The Power of Speech," December 1987, p. 97; and "Apple Serenade," May 1988, p. 70.)*

*Text-to-speech conversion with the Phasor card is also simple to program; all you need is a rudimentary knowledge of BASIC and DOS 3.3 or ProDOS text-file management.*

*The accompanying **Program listing** is a sample BASIC program that reads a text file from disk and sends the text to the Phasor card. You can use any of a variety of word processors to prepare the text file. Just remember to create a "TXT" file from your document: Using AppleWorks, for example, "print" (Open apple-P) the document to a "text file."*

*The demo program first uses the AE-supplied TTS program to load and initialize the Phasor software and hardware (line 10). Note that to work, your Phasor card must be set to "Phasor" mode (switches 1 and 2 closed).*

*The demo program then asks for the name of your text file (line 50). If you press Return alone, the program will disconnect the Phasor and stop. Otherwise, line 70 attempts to OPEN and READ your text file. If it doesn't find a text file, the error trap set in line 60 transfers program control to lines 200-220, where the program notifies you of the failure and lets you continue.*

*If it can OPEN the text file, line 90 INPUTs a sentence (T\$: a maximum of 256 characters before a Return) and calls the Phasor to convert it to speech (& T command). The following line (100) makes your program wait (& W) until the speech is finished, then re-initializes the card. Line 110 then repeats INPUT of your text-file sentences until an end-of-file error occurs and is trapped via line 60, and the file is properly CLOSED in line 120, before restarting the program.*

*That should get you talking.*

## Apple Writer to the GS

I've owned an Apple IIe and created more than 50 disks containing Apple Writer (DOS 3.3) documents. Now I own an Apple IIGS and Apple Writer won't work correctly. I can't load, but I can save documents. None of the Control-O disk

---

**Program listing.** Demonstration BASIC program reads a text file from disk and sends it to the Phasor speech-generation board.

```
10 REM Text File to PHASOR Speech Demo [2894]
20 D$ = CHR$(4): PRINT D$;"BRUN TTS": REM Load and
   initialize the AE PHASOR [4874]
30 TEXT : HOME [376]
40 VTAB 10: INPUT "Text file name ";N$ [2080]
50 IF N$ = "" THEN 250: REM Quit [1647]
60 ONERR GOTO 200 [542]
70 PRINT D$;"OPEN ";N$: PRINT D$;"READ ";N$ [1962]
80 ONERR GOTO 120: REM Trap end of file [2306]
90 INPUT T$: & T,A$: REM # Get sentence and speak it
   [3472]
100 & W: & I: REM Wait until done & reinit card [3610]
110 GOTO 90 [386]
120 PRINT D$;"CLOSE ";N$: GOTO 30 [1444]
200 PRINT : PRINT CHR$(7);"Text file not found!" [2967]
210 PRINT "Press any key to try again -->"; [3139]
220 GET A$: PRINT A$: POKE 216,0: GOTO 40 [1673]
250 & Q: END : REM Disconnect PHASOR and stop [3312]
```

---



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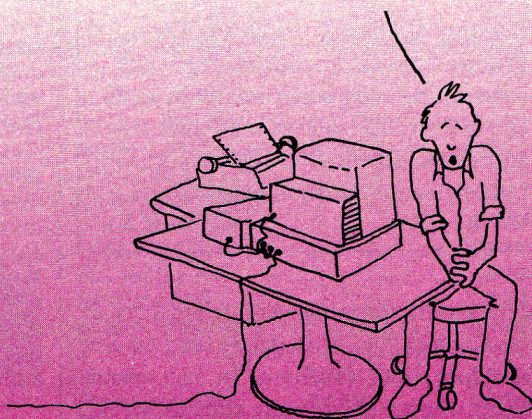
*. . . it could run programs, remove programs, back up, restore, index, copy, and other stuff, too, automatically. And it could be incredibly fast and easy to use.*

*And there could be another program just like it, for my RamCard. It could load my programs onto my RamCard and present them to me on a menu . . . and I could flip from program to program like turning a page . . . and would have great features like autoloading, back up, restore and statistical displays. And it could be incredibly fast and easy to use.*

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*. . . and be sold and serviced by friendly people . . . and be affordable . . .*



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## Quickies

When you're using the ProDOS Filer from Apple's USERS.DISK, take advantage of the "upper" 64K of memory on Applied Engineering's RamWorks card. Copy PRODRIVE from the AE Super Desktop Expander disk to a backup of your USERS.DISK. From BASIC with the modified USERS.DISK in drive 1, type the following:

```
UNLOCK STARTUP
LOAD STARTUP
2720 ? :HTAB 16: ? "MENU"
SAVE MENU
LOCK MENU
NEW
10 ? CHR$(4); "BRUN PRODRIVE"
20 ? CHR$(4); "RUN MENU"
SAVE STARTUP
LOCK STARTUP
```

When you reboot the disk, /RAM will be assigned in slot 3, drive 2.

—James Forsmark,  
Flint, MI

Oops! Messed up the MOD equation shown in April's Apple Clinic Quickie (p. 24). Use Remainder = Number - Mod factor \* INT(Number / Mod factor). Positive numbers only! Special thanks to Barry Schwarz of Norman, Oklahoma.

—W.K.

No, the Applesoft Program Typing Proofer hasn't been retired—we'll publish a listing every other month or so. If you need a copy sooner, send me a self-addressed, stamped envelope and I'll put one in the return mail.

—W.K.

or Control-P printer commands works. Is there some "patch" I can buy?

Julia Galusha  
Syracuse, NY

First, obtain a later version of Apple Writer (1.2 or 1.3). It'll work fine on your IIGS. Then use the utilities application found in the IIGS' System Disk's "system" subdirectory to transfer your files from DOS 3.3 to ProDOS, the operating system your new Apple Writer uses. That's all there is to it.

To convert Apple Writer files to AppleWorks documents, first convert your DOS 3.3 documents to ProDOS. Then, in AppleWorks, select "Add files to the Desktop," followed by "Make a new file for the word processor" and "From a text (ASCII) file." Remove any "embedded" Apple Writer control commands and replace them with equivalent AppleWorks commands.

## Drive Crazy

I'm the proud owner of an Apple IIGS, but I have a problem with my disk drives, an Apple 3½-inch and a Meiji 5¼-inch. When I boot from the 5¼-inch drive, my 3½-inch drive becomes inaccessible. If I boot the IIGS and turn the modem on while the drive is loading a program, both

drives start spinning. And when I try to use Copy II Plus, both drives turn on and just spin until I reboot. In fact, many times when I try to write files to my 5¼-inch disk, both drives start spinning.

I took my system to a dealer and left it for more than a week, only to have the serviceman tell me it's probably the Meiji drive. The dealer doesn't service Meiji drives, so I'm back to square one. Is there any way to figure this one out?

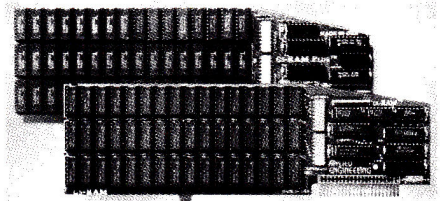
Greg Muscarella  
Santa Paula, CA

I've received a number of queries similar to yours about third-party disk drives, modems, printers—just about any device that'll plug into an Apple IIGS expansion slot.

I honestly can't recommend a fix for your problem: It appears that, although the drive is otherwise functioning properly, non-Apple devices are sometimes partially incompatible with the GS' SmartPort system or interface bus. You should contact the manufacturer in hopes that the company's technicians are aware of the problem and have upgraded versions of their systems that are compatible with the GS. ■

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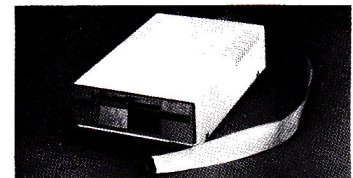
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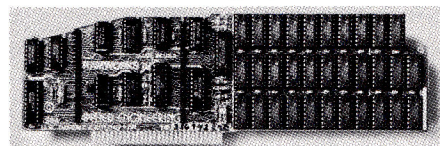
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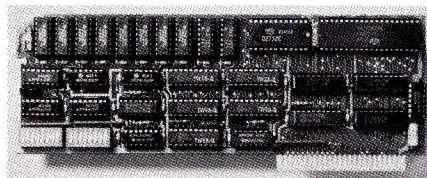
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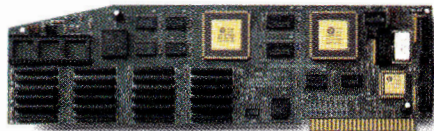
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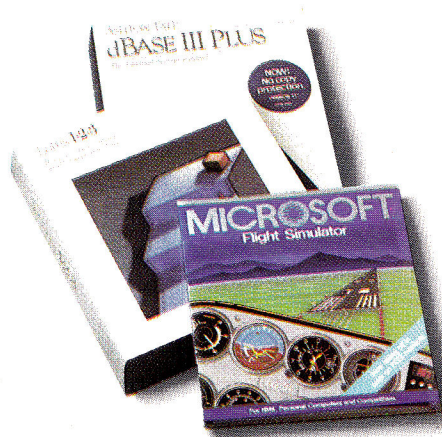
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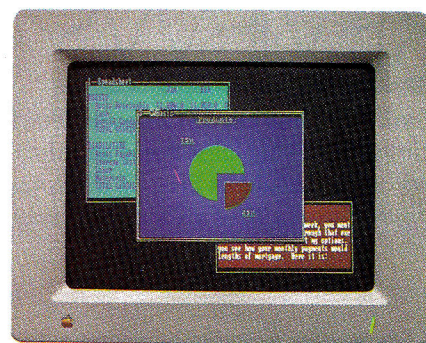
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# REVIEWS

WordPerfect IIgs 2.0; GS ComputerEyes; Playing with Science Part 1: Temperature; Science Toolkit Modules: Speed and Motion, Earthquake Lab, The Body Lab; At a Glance; Games Editors Play: GS Destroyer; Lane Mastodon vs. The Blubberman; Gamma Force in Pit of a Thousand Screams; Pharaoh's Revenge; Short Takes

## The Last Word

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**WordPerfect Corporation**, 288 West Center Street, Orem, UT 84057,  
(801) 225-5000  
Word-processing software;  
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\$179  
Rating: ■■■■

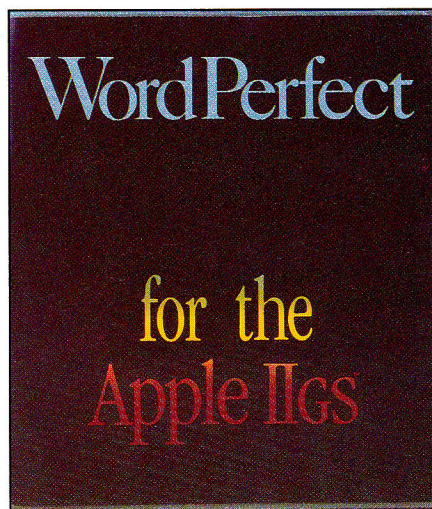
If you're a professional author or businessperson hoping to team up your 512K GS (ROM version 01) with some high-octane word-processing software, test drive WordPerfect for the latest Apple II. WordPerfect GS offers power users more than 100 word-processing features that as a collection are offered nowhere else.

#### FINDING THE RIGHT M.O.

By its nature, WordPerfect GS offers so many choices for creating and formatting documents—even book-length manuscripts—that learning it can be daunting. Gone is the “crib-sheet” keyboard template that graces Apple IIs and IIcs running their own version of this program. In place of the template with its open-apple and closed-apple commands, the GS version offers not one, not two, but three ways of interacting with this high-performance software.

WordPerfect GS includes built-in scroll bars, dialog boxes, option buttons, mouse support, and ten pull-down menus (Apple, File, Edit, Search, Print, Line, Page, Style, Footnote, and Special).

Now, word-processing purists have long complained about switching back and forth from mouse to keyboard. They argue, and justifiably so, that it slows them down. No doubt figuring on that response, WordPerfect's developers added a second interface—a scrolling command box dis-



guised under the Apple menu and unabashedly titled “Help.” This menu provides easy access to an alphabetized listing of WordPerfect's dozens of features.

Want to check the spelling in your document? Press the control-S key combination. The Help menu pulls down to highlight the word “save,” the first command listed beginning with the letter S. Continue to use the keyboard to fine-tune your “feature search.” Having pressed S, now press P, then E, and finally the return key to activate WordPerfect's spelling checker. Next time, just press Control-S P E Return.

Still not fast enough? Power users can memorize the program's keyboard-equivalent commands. Don't use the mouse to pull down that File menu and click on “Save as.” Don't type Control-Save A Return to go through the Help menu's feature search. Instead, just press an apple-S combination. Using keyboard equivalents keeps not only the mouse but the

Help menu and its feature search tucked away unobtrusively—most of the time.

Those who prefer a strictly keyboard-oriented interface may be disappointed to discover that certain features—such as sizing or moving the program's multiple document windows or working in File Management mode—seem to require the mouse.

To be frank, WordPerfect's generous number of features can make learning the program especially tough on keyboard users, even though the program comes with a Quick Reference folder listing the program's options and the commands for perhaps half of them. Some are apple-key-based, while others use the option key. Until you master these commands—or alter them, as WordPerfect GS allows—you'll be wasting some of the precious time you saved by not using the mouse.

What's your best bet? Spend a few days experimenting with WordPerfect GS. See what interface combination you use intuitively. The mouse definitely works best for some features (such as accessing the spelling checker), while the keyboard works best for others (such as flipping the underline toggle).

Change the keyboard equivalents to suit your past experience with other Apple II or GS-specific programs. Set up new page-format parameters if you want and save them as defaults. (For some strange reason, right justification was turned on as a default in the version I tested.) Once these steps are accomplished, you can settle in to use the rest of WordPerfect's features to your advantage.

#### WORD-PROCESSING EVOLUTION

This edition of WordPerfect offers features found in previous versions, as well as some new features. In fact, name any word-processing feature, and WordPerfect GS has probably perfected it. Take

#### inCider's Ratings

Excellent—remarkable, a must buy	■■■■■
Very good—impressive and recommended	■■■■
Good—average, solid performance	■■■
Fair—flawed but adequate	■■
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headers and footers—not only can you define two of each but you can place them (and page numbers, as well) virtually anywhere you want.

Users who complain that certain programs, such as MultiScribe GS, GraphicWriter, and others, support only the ImageWriter II will have a field day with WordPerfect GS. I'd wager that this program supports every printer model I've ever seen listed anywhere, including the LaserWriter and LaserWriter Plus. And, like the Apple IIe version, WordPerfect GS lets you define as many as three custom printers.

In the rare event that your printer isn't listed, the Utilities disk that accompanies WordPerfect GS includes programs for modifying printer and interface definitions, as well as system utilities, file-conversion, file-recovery, and dictionary-creation programs.

Writers and business professionals will appreciate having a 115,000-word spelling checker and a 10,000-headword thesaurus built into WordPerfect GS. The spelling checker, which finds not only spelling errors but assorted typos (including double words), also provides a word count. The speller is reasonably fast and gives you the opportunity to skip, change, or add to the dictionary each suspected error it discovers. The thesaurus is just as easy to use, and the program can automatically substitute in the text the synonyms or antonyms you select.

Advanced WordPerfect GS features include the ability to create, store, and respond to macros you've created—another time-saving feature. With the program's assorted merging capabilities, businesspeople can create personalized mass mailings and reports based on information integrated from two separate files. Just set up the second file as you might a database.

## At a Glance

**Picture Manager** (February 1988, p. 28), StyleWare, 5250 Gulfport, Suite 2E, Houston, TX 77081, (713) 668-1360, \$39.95

Rating: ■■■■

Picture Manager is an add-on to StyleWare's MultiScribe word processor that lets you merge Dazzle Draw and Mouse Paint graphics into your MultiScribe documents. The document you're working on remains in memory, so there's no need to leave the program.

Select a graphic and Picture Manager displays it in double-hi-res in a small box you can shrink, expand, or position anywhere on screen. Frame the drawing you want to merge, select the copy option from the Edit menu, then return to MultiScribe. When the text you were working on reappears, move your cursor to the point on the page where you want the picture. Select "paste" from the Edit menu and within seconds, your text and graphic are merged—just like that.

The MultiScribe editing window is narrower than the full screen, so it doesn't always let you display and merge an entire picture. That's not a problem as long as you don't need to import a large graphic. Picture Manager uses the same Mac-like interface as MultiScribe, and it's very easy to operate.

**Desk Accessories** (February 1988, p. 28), StyleWare, 5250 Gulfport, Suite 2E, Houston, TX 77081, (713) 668-1360, \$39.95

Rating: ■■■■

Also an add-on for the word processor MultiScribe, Desk Accessories adds a calendar with notepad, scientific calculator, control panel, clock, and puzzle. These are on-line accessories, so there's no need to exit from MultiScribe; you return to your current document after using them.

The calendar lets you enter notes for any date between January 1, 1901, and December 31, 2156. You flip through months with a scroll-bar elevator or the arrow keys. The left-right arrow keys move through months; the up-down arrow keys move through years.

The calculator is a full-featured scientific tool, including addition, subtraction, multiplication, and division, plus trigonometric, logarithmic, and square functions. You can define eight separate macros from the control panel. Each macro can contain up to 31 keystrokes. Macros can contain text only, a series of commands, or both.

The clock displays the system time and date from a ProDOS-compatible clock card. The puzzle is the standard 16-square array of 15 numbers you have to rearrange in order—a nice diversion. Overall this collection of Desk Accessories is a useful addition to MultiScribe.

**Bank Street School Filer** (February 1988, p. 31), Sunburst Communications, 39 Washington Avenue, Pleasantville, NY 10570, (800) 431-1934, \$99

Rating: ■■■■

Bank Street School Filer is designed for wide-ranging classroom instruction. Ten sequential lessons cover everything from how to boot the program disk and retrieve a file to creating and revising your own database.

The core of the database activities is a group of 27 "canned" files ranging in subject matter from whales, dinosaurs, and eats to finance, inventory, and overdue items (for keeping track of library books). These prepared databases save students and teachers the frustration of

*Continued*

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#### Continued

creating their own, and are helpful in teaching database terminology and concepts.

**The Print Shop IIGS** (March 1988, p. 28), Broderbund Software, 17 Paul Drive, San Rafael, CA 94903, (415) 492-3200, \$59.95

Rating: ■■■■■■

The Print Shop is back. The IIGS version has retained the familiar listed-menu setup, but now the colors are striking. Print Shop IIGS features 24 built-in single- or multicolor borders, 64 color graphics, and 12 fonts. Choose designs by number to speed up selection. Print text in black, purple, blue, green, yellow, orange, red, and "rainbow."

Creating signs, letterheads, banners, and cards is as easy as ever. Use the predrawn letterhead and banner images, or use the Graphic Editor to modify and create your own. Printing is easier than ever. Instead of the blinking "Thinking" and "Printing" messages of the previous Print Shop, the GS version has a moving square cursor that shows you how far it has to go—and printouts are among the best available.

**GraphicWriter 2.0** (March 1988, p. 34), DataPak Software, 14011 Ventura Boulevard #507, Sherman Oaks, CA 91423, (818) 905-6419, \$149.95

Rating: ■■■■

The 2.0 in GraphicWriter 2.0 is very important. DataPak has made quite a few improvements on the original. The new GraphicWriter features automatic multicolumn formatting, more than 1100 type-style variations, define-your-own point sizing, graphics and text integration with automatic word wrap, and a number of other "desktop publishing" features.

The word-processing portion includes advanced formatting commands such as justification, tab setting, variable lines per inch, headers and footers, and free-form page numbering. The most powerful feature is the ability to create regions. Each region is independent of the others, can take on different sizes and shapes, and can be moved without disturbing the other regions. Object regions can include text and graphics; canvas regions can only contain graphics images. GraphicWriter 2.0 is a powerful, easy way to produce sophisticated page layouts.

**ThunderScan** (January 1988, p. 26), Thunderware, 21 Orinda Way, Orinda, CA 94563, (415) 254-6581, \$219

Rating: ■■■■■■

ThunderScan is an Apple II image-acquisition system, letting you transfer real-world images to your computer's graphics screen. Its optical sensor attaches to an Apple ImageWriter or ImageWriter II; it replaces your ribbon cartridge and "reads" pictures and documents you insert into the printer's paper feed.

ThunderScan differs from ComputerEyes, VisionPlus, and other similar devices that transfer images from a video camera or videotape machine. ThunderScan's digitized images are of better quality than ComputerEyes' and are comparable to those produced with VisionPlus on the GS. Palette control is on a par with VisionPlus, but it's not as simple. Unlike a video digitizer, ThunderScan can capture only images you feed through your ImageWriter. It's an economical way to digitize if you already own an ImageWriter.

**Postcards (GS version)** (January 1988, p. 29), Activision, Inc., P.O. Box 7286, Mountain View, CA 94039, (415) 960-0410, \$29.95; blank Postcards \$4.50 (50), \$7 (100), \$9 (150)

Rating: ■■■■

Continued

## SPECIAL GS FEATURES

Besides its mouse-based graphics interface, WordPerfect offers some other singularly GS features. You can use the program's RGB (red, green, and blue) sliders to alter screen appearance by "mixing" colors for background, text, boldface, and inverse boldface.

WordPerfect GS is nearly perfectly WY-SIWYG (what you see is what you get) in still other respects: Underlined text shows up underlined on screen, for instance, though in actual printing you have a choice of underline styles—continuous or broken, single or double, depending on your printer's capabilities.

Nevertheless, your printer may have some acumen WordPerfect GS can't exploit. While the program supports various type-style features (bold, underline, superscript, subscript, and pitch), it doesn't support fancy fonts and color printing. If you prefer a graphics word processor, you may be better off with MultiScribe GS or the AppleWorks/TimeOut SuperFonts combination—that is, unless you require WordPerfect's word-processing features, many of which these other programs lack.

WordPerfect doesn't suffer from some practical limitation on file size; your file can be as large as the medium on which it's stored. A single document on a 3½-inch disk can be about 800K long. The maximum file size the program can handle is 16 megabytes.

You can hasten operations by setting up a RAM disk, as long as your GS has at least 1 megabyte of memory. Regardless of disk size or type (RAM, floppy, or fixed), the program manual recommends that you limit documents to between 20 and 70 pages each to maximize scrolling and editing speed.

## FINISHING TOUCHES

Like AppleWorks, WordPerfect hides formatting codes until you want to see them. When you're ready to edit your document, press Option-S or use the mouse to select "Show Codes" from the Edit menu. WordPerfect splits the screen horizontally to display codeless text in the top half and code-riddled text at the bottom.

During text creation, you can select

WordPerfect's "Clean Screen" feature to remove extraneous entities, such as the menu bar and other graphics features. Only your text and the status line appear.

While you may take many of WordPerfect GS' basic features for granted, you'll fully appreciate options like Insert Date. Define any date/time format you want and the program enters it for you wherever and whenever you like. WordPerfect reads the GS' built-in clock automatically.

Other convenient features include Center Page (for creating neatly printed title pages) and Binding Width (for shifting margins on even and odd pages to accommodate staples, punched holes, or other binding methods).

Improved documentation and error handling could help flatten and smooth WordPerfect's learning curve. Although the tutorial is clear and well written, it seems to have been prepared almost exclusively for the mouse user. Virtually all instructions tell you to pull down this and click on that. As mentioned before, keyboard users actually need more assistance in learning WordPerfect GS.

The manual includes what appears to be a complete listing of error messages and explanations. The program itself is careful to ask questions such as "Replace existing file?" Still, there are times when more dialog would help. For instance, displaying the message "Pathname too long" would have clearer meaning for ProDOS initiates than the vague "Invalid Pathname" retort.

WordPerfect Corporation offers exemplary support. WordPerfect GS comes with a 90-day warranty that covers more than just the disks. Unlike many companies that guarantee the medium only, "WordPerfect Corporation warrants that the program will perform in substantial compliance with the enclosed documentation." The company assures users that if it can't fix defects you find and report in writing within 90 days of purchase, it will refund your money.

While you're learning the program, remember that technical assistance is just a toll-free phone call away, though you shouldn't be surprised if the number is often busy.



## Continued

The GS version of Postcards is an enhancement product for Activision's Paintworks Plus. It works like a single-function clip-art disk, and features the same colorful screens, pull-down menus, and mouse power. You begin with a postcard template resembling a blank picture frame. After selecting a background scene from the ten pictures offered or creating your own, you choose from nearly 200 graphics, ranging from realistic to bizarre. If this selection falls short, you can also import pictures from Activision's Clip Art Gallery.

Select an appropriate postcard message in a variety of fancy fonts and print your card. (Paintworks Plus supports the ImageWriter II for both black-and-white and

color printing.) Although the program's noncopy-protected, it's good form to use the Paintworks Plus "save as" command as you create. The final stage is cutting and pasting (literally) your creation from ordinary printer paper to postcard stock—the glue stick is included. Postcards gives you a chance to show off your talent, your sense of humor, and your Apple IIcs.

**First Letters and Words** (March 1988, p. 44), First Byte, 3333 East Spring Street, Suite 302, Long Beach, CA 90806, (213) 595-7006, \$49.95

Rating: ■■■

First Letters and Words includes four separate activities. With varied success, three attempt to expand read-

ing-readiness skills. The most elementary module introduces upper- and lowercase letters, related sounds and objects, and a sentence using digitized words. Video and audio combine to reinforce these concepts in module 2, followed by Who Am I, a riddle game.

Although voice reproduction is reasonably good, children at reading-readiness level will have difficulty understanding the words and solving the riddles. The fourth module attempts to teach children color and body parts, but kids can play it without benefiting from its instruction. The program's educational goals are hazy and the results tough to tell. Although the program needs 768K of memory and does some interesting things, it doesn't really take full advantage of the GS' capabilities.

End

WordPerfect GS isn't copy protected, but you can use the program on only one Apple at a time. If you have more than one GS in your office, you should purchase a complete WordPerfect package for each one.

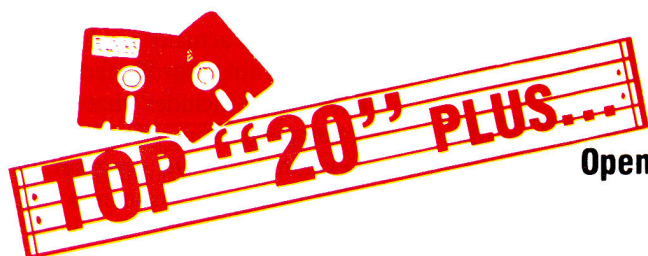
Earlier versions of WordPerfect for the IIe and IIc have helped earn the program

its widespread reputation as perhaps the only truly full-featured word processor for the Apple II family. With the GS version, WordPerfect maintains and enhances that well-deserved reputation.

But for all its many wonderful features, WordPerfect may challenge you to ne-

gotiate a very steep learning curve. As with most GS programs, mouse users have a clear advantage in learning and using WordPerfect GS. ■

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Rating: ■■■■

The G in GS stands for *graphics*, of course, reminding you that the Apple IIGS can display brilliant, multicolor images. You can buy any number of tools, particularly paint programs like Deluxe-Paint II and Paintworks Plus, to create images with the GS, but to be useful they require at least a modicum of talent on your part. ComputerEyes for the Apple IIGS is also a tool for creating high-quality graphics—but to demonstrate your graphics ability with ComputerEyes, G doesn't have to be your middle name.

### CAPTURING COLORS

ComputerEyes for the IIGS is a color video digitizer with two major components: a GS expansion card that converts analog video signals to the digital data your computer can manipulate, and software to perform that manipulation. The result is a system that lets you capture a video picture and display it as an Apple IIGS picture.

ComputerEyes for the IIGS requires 512K; it won't run on a bare-bones 256K machine. (Remember when 256K was considered a lot of memory for an Apple II?) The digitizing board is a compact unit you can plug into any GS expansion slot. To avoid conflicts with the machine's ports,

however, the manual recommends you use slot 3, 4, or 7. I installed ComputerEyes in slot 4 without any difficulty; the board didn't interfere with the operation of any other GS peripherals.

The ComputerEyes board carries 13 chips and a couple dozen discrete components—resistors and capacitors and such. The presence of two jumpers on the back indicated last-minute modifications, but my concern proved ill-founded, as the board never failed to do its job.

Three RCA cables are connected to the board; the most important connects the ComputerEyes board to a video source—a VCR, videodisc player, video camera, or camcorder. To test the board, I hooked it up to an 8mm Kodak camcorder.

The other two cables are useful only if you use a composite monitor with your GS: One cable connects to the composite-video slot of your computer, while the

other connects to your composite monitor. You can switch your viewing between signals from the computer and the video source to preview the video signal on a composite monitor before you digitize it. Note that ComputerEyes doesn't put out an RGB signal, so you can't preview the video source on the standard GS monitor.

Once the board was in place, I booted the system with a backup copy of ComputerEyes' software. The first time you boot it you must specify the slot in which you've installed the ComputerEyes board and the type of monitor you're using—composite or RGB. Once you've configured it, the system's ready to go.

### DIGITAL CONTROL

The ComputerEyes software uses an AppleWorks-style interface. The main menu includes seven items you can select with either the keyboard or a mouse: View Video Image, Capture Image, Ad-

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Expanded RAM cards supported	<b>Y</b>	N	N
Capture buffer	<b>2.5 Mb</b>	N	4 pages
Copy buffer	<b>45K</b>	17K	36K
Dial lists	<b>unlimited</b>	16	—
File transfer protocols	<b>7</b>	4	3
Copy files, Format disk	<b>Y</b>	N	N
Load/Save AppleWorks™ files	<b>Y</b>	N	N
Editor commands	<b>42</b>	12	14
Set page margins	<b>Y</b>	N	N
Print formatting commands	<b>Y</b>	N	N
Automatic learn keyboard macros	<b>Y</b>	N	N
Procedure macros	<b>unlimited</b>	N	N
Commands available	<b>20</b>	N	N
<b>PRICE</b>	<b>\$129.95</b>	\$129.95	\$99.95

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just, Options, View Current Image, Modify Image, and Disk Access/Printing.

Not bothering to read the manual (as usual), I pointed the camcorder at my dog and selected Capture Image from the menu. After indicating I wanted a Color 320 Super image, the software began scanning the video signal coming in from the camcorder. After six seconds, it began assembling a palette. Four seconds after that, it displayed a slightly blurred but recognizable picture of puppy Mae.

The blurring occurred because Mae can't sit still for six seconds, the time required by ComputerEyes to complete its scan. That's one of the limitations of this system—it's useful only for digitizing still objects. It's not practical to digitize moving objects with a camera or to digitize from a VCR that doesn't have a high-quality pause or stop-action feature. Blurring aside, ComputerEyes had passed the first test: It's straightforward enough to use without reading the documentation.

Of course, using it and using it well are two different things. Shortly thereafter, I referred to the manual for help in capturing high-quality images. The first and most important adjustment I made was to do a *white balance*, which fine-tuned the color of the subsequent images I captured.

ComputerEyes lets you set other parameters, as well, such as brightness and contrast, before you digitize an image. I found it best, however, to make these adjustments (with the exception of changing capture speed) after capturing an image. It saves a lot of time, because the software can recalculate an image in four seconds as opposed to the ten seconds it takes to capture and calculate a new image. Also, any changes you make in a captured image are reversible.

The Adjust menu lets you change the brightness and contrast of a captured picture. You can change the color balance manually here also, although I found I got the best results by leaving the color balance alone after setting it from the Capture menu.

The ComputerEyes software lets you make many other changes in images

you've captured or those you've loaded from disk. Routines selected from the Options menu let you convert any Apple II image to any other Apple II graphics mode. Conversions the system supports directly, such as Color 320 Super to Double-Hi-Res, produce the best results, but even conversions that require multiple steps generally yield good results.

Other changes you can make from the Options menu include setting the number of colors or grey levels (below the maximum number available in a particular display mode), setting the separation (or minimum difference between any two colors in the palette), and changing the capture speed from six to 12 seconds (in 320 mode), which may result in a sharper image. The last item on the Options menu lets you choose between displaying double-hi-res images in color or black-and-white.

You can make further changes from the Modify Image menu. Here you can adjust the threshold levels of an image, mirror it, invert (negate) it, scroll (with or without wrap), and resize it. If you don't like any of the modifications you've made, you can always restore the original.

From the main menu, View Current Image displays the image you have in memory, while Disk Access/Printing lets you load and save images and print them with an Apple ImageWriter.

## A HELPFUL TOOL

Within limits, ComputerEyes for the Apple IIGS is a very good image-acquisition system. It lets you capture beautiful shots you can use with your GS software or modify with a paint program. ComputerEyes also provides powerful tools for manipulation you can use with any picture file, not simply those you capture with the system.

Remember, though, that GS ComputerEyes is limited by its slow scan rate and by the computer itself. The slow scan rate restricts the types of images you can capture to still shots and the type of video device you can use for input to a camera or a multihead VCR. The GS limits the result to 16 colors or 16 shades of grey. You'll get the

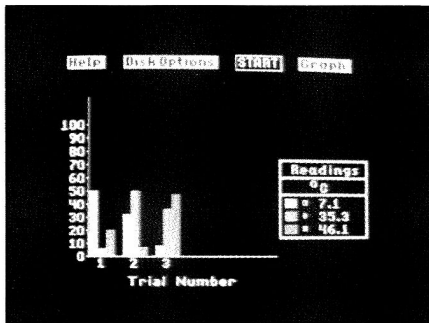


best effects if you restrict your digitizing to simple scenes that don't have a lot of subtle shading.

ComputerEyes is a powerful, affordable image-acquisition system. If you want to capture and display beautiful images on your GS or if you want raw material for your paint program, ComputerEyes is a good tool at a good price. ■

**Robert M. Ryan**  
**Hancock, NH**

*Editor's note: Since this review was written, Digital Vision has updated the ComputerEyes IIGS software. Version 2.0 now offers nine additional or updated features—refined color calibration, compatibility with Print Shop GS, optional color and black-and-white image dithering, restoration of the previous version of an image, a freeze-palette option, a new keyboard interface, an option to save and load “raw image data,” and standard hi-res display.*



## Hot Stuff

### PLAYING WITH SCIENCE PART 1: TEMPERATURE

**Sunburst Communications Inc.,** 39  
Washington Avenue, Pleasantville, NY  
10570, (800) 431-1934, (914) 769-5030  
Experiments to measure temperature;  
any 64K Apple II (Apple II Plus  
requires 16-pin I/O game-port adapter  
cable), printer optional  
\$85  
Rating: ■■■■

Why does the liquid in a thermometer rise when the temperature increases? Can

you boil water in a paper bag? How come it takes so long for a large block of ice to melt? Can water be hot and cold at the same time?

If you'd like scientific answers to these real-life questions, take a look at *Playing with Science, Part 1: Temperature*. This exciting package lets you turn your Apple II into an interactive science lab. Kids in kindergarten through seventh grade can perform as many as 33 different temperature experiments with the help of their Apples and some common objects.

### GETTING WARMER

As they “play” with science, students will learn how a thermometer measures temperature (in Celsius as well as Fahrenheit). The program challenges them to perceive differences between hot and cold. They can examine the effects of sunshine and discover how human skin detects temperature. Some experiments focus on why things get warmer. Others look at why we feel cold when the wind blows, what color clothing retains the most heat, and why gloves are warm on the inside.

*Playing with Science* is easy to use. Even young children can explore and record a variety of temperature changes. In the process, they gather valuable insights while practicing the scientific method.

Teachers don't need any science background to perform the experiments in their classrooms. The accompanying 259-page *Teacher's Guide* contains all the instructions necessary to explain activities and carry them out, as well as lesson plans for each of the experiments and suggestions for using them in single-computer or multicomputer classrooms. There are student activity sheets, topics for post-experiment discussion, ideas for additional follow-up exercises, and teacher-oriented essays.

*Playing with Science* comes with all the hardware necessary to perform the suggested experiments. Attach thermistors directly to the central connector to perform the experiments. Daring, electrically minded souls can construct their own inexpensive extension cables and

thermistor probes by following the detailed technical instructions at the back of the *Teacher's Guide*.

### TEMPERATURE ZONES

Before beginning any experiments, you'll need to calibrate the thermistors to give accurate temperature readings. Load the program and press Control-T from the main menu to access the utilities. Select “Calibration” and follow the on-screen instructions.

You'll have to place the thermistor probes in very hot water along with a standard thermometer. Wait about three minutes for the temperature of the water to stabilize. Then take the temperature reading from the standard thermometer and type it into the computer. Repeat the procedure with ice water. Calibrate the thermistors a number of times for greater accuracy.

The utilities also include a number of valuable options—Disk Commands, Program Control, Printer Selection, and Calibration Utility—to modify the program setup for your specific hardware configuration. Disk Commands lets you format a data disk, catalog the files on your disk, copy data files from one disk to another, and erase data disk files. Program Control lets you select a temperature scale, designate your second drive as the data disk drive, and set the highest and lowest temperature values to be displayed during data collection. The range is 0 to 100 degrees Celsius or 32 to 212 degrees Fahrenheit.

Program Control also lets you specify the data-display format. You can have the program present your data as a line or bar graph, or you can read the data from an on-screen thermometer complete with simulated mercury movement. For classrooms with only one computer, there's an optional digital display with large, easy-to-read numbers.

To print the data you collect during an experiment, choose Printer Selection from the Utilities menu, then the appropriate printer, interface card, and printer slot.



Playing with Science can take temperature readings for as long as 23 hours 59 minutes. Students can leave an experiment going overnight and analyze the results of their data during class the following day. Most experiments should work quite well with a designated data-collection period of about 5-7 minutes.

Temperature range, type of display, time of experiment, and number of active thermistors are variables determined by each experiment. Refer to the *Teacher's Guide* for particular setup details. You can designate the number of active thermistors with the Program Control utility.

## EXPERIMENT AWAY

Once you've worked your way through the Utilities to familiarize yourself with the program features, you're ready to conduct an experiment. Pick one from the *Teacher's Guide* and follow the setup

instructions. Then select "Do an Experiment" from the main menu and "Start" to begin gathering data.

You can preset the setup defaults to let students begin collecting data right after loading the program. At the bottom of the experiment screen is a memory indicator. When the bar is full, the program stops collecting data and lets you know it's time to save the information you've already gathered. Once you've saved your data, you can clear memory and begin a new experiment or continue the one in progress. A load/link option makes it easy to add new information to previously saved data.

When you've collected all the data, it's time to look at the results. Doing the analysis is probably the most difficult part of the entire program. It would have been helpful if Sunburst had included a sample data file on disk. Students could

then practice a variety of analyses and print options before actually dealing with the results from an ongoing experiment.

You can display and print data in several formats. There's a zoom feature for taking a closer look at small data segments; you can also isolate particular data points for special display. Students can graph one or all of their thermistor readings. If they prefer, they can even eliminate the graph and look at just the numerical values of the data.

## SILENT HELPER

Playing with Science demonstrates that your Apple II can indeed serve as a sophisticated lab aide. It challenges students to conduct real-life experiments, rather than mere on-screen simulations. The program gathers and records data, then assists with the analysis.



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This month we fly to Paris, city of lights. Few sights can compare with the Eiffel Tower at dawn.

Now off to our left you can see Notre Dame cathedral, situated on an island in the Seine. Other Paris highlights include the Arc de Triomphe, Sacre Coeur, Concorde Obelisk, and the Louvre.

Next month we'll finish our tour of Paris and continue on to Germany.



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The emphasis for the student is on interpreting the results, rather than recording data. Youngsters are encouraged to design their own experiments and think critically about the results. For these reasons, *Playing with Science* is a welcome addition to the interactive science packages currently available for the Apple II line. ■

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

## Exploring Your World

### SCIENCE TOOLKIT MODULES: SPEED AND MOTION EARTHQUAKE LAB THE BODY LAB

**Broderbund Software Inc.**, 17 Paul Drive, San Rafael, CA 94903-2101, (415) 492-3500

Expansion modules for Broderbund's Science Toolkit; any 64K Apple II  
\$39.95 per module

Rating: ■■■■

When Broderbund first released its Science Toolkit Master Module, it looked as if it might become another shelf decoration. By creating a series of expansion modules, though, Broderbund has ensured that this super program will be active for many years. Like magic boxes, Science Toolkit expansion modules transform the Master Module into a set of new instruments with which you can conduct new experiments. The first three modules cover motion, earthquakes, and the human body.

### SHAKE, RATTLE, AND ROLL

Speed and Motion provides two on-screen instruments, a speedometer and a tachometer. In one experiment, you set up a little car, powered by air escaping from an inflated balloon, to race past a pair of photocells set a precise distance apart. One of the photocells starts a timer and the second one stops it. The software computes the speed of the car in miles per hour or in kilometers per hour.

Using the tachometer, you can measure the rate at which a fan blade rotates or measure the flicker of fluorescent lamps. You can also study the way a pendulum swings—and you'll learn the similarities between a grandfather clock and a playground swing. Variations of the basic experiment demonstrate how moving objects accelerate and decelerate while in motion.

### GRAPHING EARTH TREMORS

In Earthquake Lab you'll assemble a real seismoscope, an instrument that detects movements of the earth, from parts supplied with the module. This simple kit is actually more sensitive than many of the earliest instruments constructed by professional geologists at the turn of the century.

The seismoscope is designed around a photocell. A hanging weight makes the amount of light reaching the cell vary as the earth, or your table, vibrates, while an on-screen seismograph measures and displays the changes. The graphic shows a continuous "strip of paper" passing under a pen that moves left and right in response to the movement of the seismoscope. One really nice feature of this module is that you can print any trace of an earthquake you've recorded.

Because timing is critical in the study of earthquakes, a series of accurate timing marks along the display margin would have been a useful option for measuring the arrival and interval of any earthquake waves.

### INSIDE THE HUMAN BODY

Few things on earth have been investigated and measured more than the human body. Still, most people know relatively little about the way it works. With The Body Lab, you can learn about two critical organs—your heart and your lungs.

The Body Lab shows you three instruments on screen—a heart-rate meter, a response timer, and lung-volume meter. The first two are basically clocks. The heart-rate meter displays a pattern in response to timed counts you enter. Over a period of time, you can measure how

someone's pulse changes while he or she is resting or exercising. You can also print the results of your experiments.

The response timer measures how long it takes you to react to either a light flashing on screen or a beep from your computer. You can also make your own mechanical switches and attach them to the interface box to time other physical responses, such as the reaction time of your leg jumping to hit a simulated automobile brake.

The Body Lab module comes with components you put together into a spirometer. Along with the lung-volume meter on your screen, the spirometer measures the volume of air you exhale. Blowing into the palm-sized device makes a turbine spin, thus interrupting a beam of light. The software converts the rate of spin into a display that shows how much air your lungs hold.

Like the seismoscope, proper use of the spirometer is critical. For one thing, you have to hold it steady in relation to the light source while in use. Even small, erratic movements can affect your results radically. It may be difficult at first, but repeated trials should yield reasonably accurate results.

### PUTTING IT ALL TOGETHER

If you have Broderbund's Science Toolkit Master Module, check out these programs. They provide more than enough activity to keep the fires of interest alive in the minds of young scientists. While the Science Toolkit can do many things, it's not intended to be an all-purpose lab assistant. Use the Toolkit and the accompanying modules with that in mind, and you won't be disappointed.

According to Broderbund spokespeople, the company plans to offer more science modules—a working weather station and another program described as an open toolkit your students can use for a wide variety of measurements. The Science Toolkit series looks as though it will be around for a long time to come. ■

*Jerry D. Greer*  
*Park City, UT*



# GAMES

## EDITORS PLAY



### Lafe Low plays . . .

**Destroyer (GS version)**, Epyx, P.O. Box 8020, 600 Galveston Drive, Redwood City, CA 94063, (415) 366-0606. \$39.95.

As the first wave of Zeroes swoops in low over your decks, brace yourself for the thunderous explosions that are sure to follow. Destroyer is back.

You're still at the helm (or the anti-aircraft guns, the depth-charge racks, or any of eight other battle stations) of a Fletcher-class destroyer sweeping up the Pacific sea lanes in World War II. It's the same Destroyer that came charging out of your screen awhile back, but on the GS it looks and sounds even more authentic.

Deep in the ship's sonar room, you hear the muffled ping of sound waves bouncing off potential targets. Out on deck your anti-aircraft guns chatter away. The incoming planes crash and splash as you hit them. When you're aft at the depth-charge racks, you'll hear those canisters splash when they hit the water.

I haven't become any better a sea captain in the months since my last war patrol. Oh sure, I've sent my share of Zeroes spinning into the ocean and kept a couple of submarines from returning to port, but as soon as they come at me from all sides, I'm in deep trouble (no pun intended). To quote my review of the original version of this game (October 1987, p. 123), "If I'd been a real destroyer captain, we'd be speaking Japanese right now."



### Eric Grevstad plays . . .

**Lane Mastodon vs. The Blubermen**, Infocom Inc., 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000. \$12.

Mighty Meteors of Mercury! It's handsome space lummox Lane Mastodon, teamed up with whiz kid Lambert Edison and his big sister Ivory (who makes red-blooded men wish for better graphics) against the vile Jovian Blubermen and their plan to enslave Earth! Can Lane stop the tubby ones, avoid being killed by Earth's counter-attack, and figure out who's a friend and who's a Jovian clone?

Infocom's newest adventure has nothing to do with interactive fiction. It's an Infocomic, an animated comic book with no puzzles to solve and, unlike Accolade's comics, no arcade games to play. You simply sit and watch the story as if it were a video movie, using pause, fast-forward, and rewind controls.

To make any sense of the action, you'll need to loop back and follow many forks in the road—leaving the main story for a flashback, or abandoning Lane to follow Lambert, Ivory, the villains, or the Earth's defenders. If you sit and watch one story line to the end, it'll make even less sense to you than most things do to Lane.

The concept and the page-turning controls are neat, as you'd expect from a Tom Snyder Productions venture. (The company collaborated with Infocom on the whole Infocomics series.) The pictures are minimal cartoon sketches—not very impressive compared to other graphics adventures, but much quicker to load from disk—with some very nice animated scenes of ships flying through tunnels and so on.

This first Infocomic may not be the best of the series—we'll have to wait and see. The story veers from comedy to duller stretches of playing it straight. Author Steve Meretzky proved his chauvinist credentials with *Leather Goddesses of Phobos*—and Ivory is just a bimbo who gets her clothes torn off by monsters.

But it's fun to watch Lane Mastodon fall heroically off a cliff or pout,

"Gosh, I just hate it when the bad guys have the upper hand." Infocomics give you a lot of fun for 12 bucks.



### Paul Statt plays . . .

**Gamma Force in Pit of a Thousand Screams**, Infocom, 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000. \$12.

Pit of a Thousand Screams is a game for the future. Ignore the comic-book name and the comic-book cover—there's nothing Mickey Mouse about the graphics or the story.

The plot's simple. In fact, when I first played Pit of a Thousand Screams, I watched the straight-line story—the shortest distance between beginning and end. The plot was dull: Gamma Force saves planet from evil ogre and reunites princess with deposed father, the king.

But, like interactive fiction, an Infocomic is a dynamic story. I played Pit of a Thousand Screams again and again, poking up and down different paths through the history of Zuron, and the story began to resonate. It's as deep as a folktale: Because you know the ending anyway, you concentrate on the details. And Pit of a Thousand Screams is filled with detail.

The program is worth watching just for the animation. Moving pictures are commonplace in computer games; cinematic quality is rare. Pit of a Thousand Screams looks like a movie. I'm not talking about photographic realism—this is a comic book, not a photo-novel—but style. You've never before seen a computer use close-ups, pans, fading, and tracking the way Pit of a Thousand Screams does.

Watch the shifting angles, too. The "camera" moves with the story. Pit of a Thousand Screams matches form with content as a poem does in words.



Buy every Infocomic as soon as you can. They're priced at only \$12 each and will entertain you as no book, no movie, and certainly no computer game ever has before. ■

### *...and plays...*

**Pharaoh's Revenge**, *Publishing International*, 333 West El Camino Real, Suite 222, Sunnyvale, CA 94087, (408) 738-4311. \$29.95 (5¼-inch disk), \$32.95 (3½-inch disk).

Imagine you're an archaeologist, poking around a dark Egyptian pyramid. In the course of attempting to escape from one of a countless number of deep tunnels, you're trying to rest a ladder against some ancient bricks—

when the ghostly remains of a pharaoh's mummy rise to block the way.

That's the story of *Pharaoh's Revenge*, an old-fashioned arcade game that surprised me—it's fun to play. *Pharaoh's Revenge* combines strategy, tactics, and manual dexterity.

You expect to have to coordinate your hand on the joystick with your eyes on the screen in an arcade game. *Pharaoh's Revenge* meets your expectations: Split-second timing and precise placement of your archaeologist are the tricks that will beat the mummy.

There's no best strategy. I like to explore as many of the 200 levels as I can, ignoring my point total, but I guess you're supposed to play for points. I'll probably play for points later, after

about three hours of raising ladders for the sake of climbing them. But here's a hint: The best tactic is to put ladders up in more than one place; that way you have somewhere to hide from the evil mummy.

Fact: *Pharaoh's Revenge* works on the Apple IIc, IIe, and IIGs. Opinion: It looks okay in black-and-white, better in color, needs a joystick, and is more fun on a GS or a IIe/c with accelerator card.

I'd forgotten how much fun an arcade game can be. *Pharaoh's Revenge* looks easy, but it gets impossible fast. There's still something compelling about a game "I know I can win, if I play just once more," despite overwhelming evidence that I'll never come out on top. ■

## *Short Takes...*

**Nord and Bert Couldn't Make Head or Tail of It**, *Infocom*, 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000. \$39.95.

■■■

Definitely designed for the quick-witted, Nord and Bert is a series of short interactive puzzles. Full of puns and other forms of word play. (See Games Editors Play, March 1988, p. 48.)

**Xevious**, *Mindscape*, 3444 Dundee Road, Northbrook, IL 60062, (800) 221-9884. \$29.95.

■■■

A fairly basic arcade game—shoot 'em up faster than they can shoot you—but lots of fun. Uncomplicated and mildly addictive. Joystick required. (See Games Editors Play, February 1988, p. 36.)

**Silent Service (GS version)**, *Microprose*, 180 Lakefront Drive, Hunt Valley, MD 21030, (301) 771-1151. \$39.95.

■■■■■

Reality factors (such as limited visibility, dud torpedoes, or convoy zig-zags), excellent graphics, and authentic sound effects are the highlights of this realistic simulation of submarine warfare in World War II. Apple IIGs and mouse required. (See Games Editors Play, December 1987, p. 58.)

**Ski Crazy**, *Baudville*, 5380 52nd St. SE, Grand Rapids, MI 49508, (616) 698-0888. \$29.95.

■■■■■

Ski down the 15 daredevil slopes of Mount Kilimanjaro, or create your own challenging trails. Conquer moguls, jumps, ice, and slalom gates—good clean fun. Joystick required. (See Games Editors Play, January 1988, p. 37.)

**California Games**, *Epyx*, P.O. Box 8020, 600 Galveston Drive, Redwood City, CA 94063, (415) 366-0606. \$39.95.

■■■■■

Surf, skateboard, frisbee, roller-skate, bicycle, and hacky-sack your way through the Golden State in this wild collection of games. Joystick required. (See Games Editors Play, February 1988, p. 37.)

**Pirates**, *Microprose*, 180 Lakefront Drive, Hunt Valley, MD 21030, (301) 771-1151. \$39.95.

■■■■■

If ye be searching for a taste of the pirating life, this is it. It's back to the Caribbean Sea in the 1600s for pillage and plunder as the captain of your own vessel. You won't want to miss this one. (See Games Editors Play, April 1988, p. 43.)

**GBA Championship Basketball**, *Gamestar/Activision*, 3885 Bohannon Drive, Menlo Park, CA 94025, (415) 329-0500. \$39.95 IIe/IIc, \$44.95 GS.

■■■■■

Takes great advantage of the GS' sound and graphics. The two-on-two approach, versatile practice sessions, and the ability to play an entire league schedule are particularly nice features. (See Games Editors Play, August 1987, p. 90.)

**Championship Baseball**, *Gamestar/Activision*, 3885 Bohannon Drive, Menlo Park, CA 94025, (415) 329-0500. \$39.95.

■■■■■

Not as slick as *Hardball*!, but the ability to create your own team and compete in a 24-team league adds to the game's fun factor. (See Games Editors Play, June 1987, p. 91.)

**Infiltrator II**, *Mindscape, Inc.*, 3444 Dundee Road, Northbrook, IL 60062, (800) 221-9884. \$29.95.

■■■■■

Like most helicopter simulations, this one is complicated. Graphics screens are nice, especially because they require only 64K. In addition to flying, you get to run around on special "ground missions." Joystick required. (See Mace on Games, May 1987, p. 98.) □



# IMPROVE YOURSELF WITH A BRAIN

## Stocks Plummet In Record Time!!! Could This Be The End of Silverware?

In what appears to be a major setback for the electronic tool industry, the market closed down over one thousand points in combined issues of *Consolidated Fork*, *SpoonTech*, and *Knives International* yesterday. The adjustment was not entirely unexpected. Analysts, however, were taken aback by the severity of the downturn.

All three major utensil companies had been seeking to diversify in recent years, and all three had experienced major setbacks.

**Fork's Folly**  
*Consolidated Fork* had invested heavily in their Electric Fork, a battery powered device which stabbed steaks repeatedly until it actually hooked into the meat. It failed in market testing, when tests revealed that clumsy people who dropped the fork risk serious injury.

**Spoons Go South**  
*SpoonTech* also belied up after its heavy loss incurred after its diversification into the ladle field. Tim Galusha, Chief Operating Officer, commented, "We took our lumps for trying to deviate from our specialty. We built this company on teaspoons and tablespoons. It'll be a long time until we try this sort of trick again."

**Blades Bottom Out**  
*Knives International* was the third victim of yesterday's session, closing at an all-time low of one eighth cent per share, down from \$154 earlier in the day. Analysts attribute their failure to the consumer rejection of their new toy, Switchblade Silverware, designed to give people any utensil they desire at the flick of a switch.

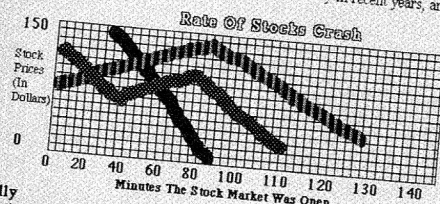
"It sure beats me," says Ross Boone, president and CEO of *Knives International*. "I thought we had a great product at a great price. I bet it was the computer traders that did us in. It certainly couldn't have been my fault."

**Experts Ponder Future**  
Experts began to wonder if this would lead to an end of utensils for the mass public. Said expert Max Gontz, "With these three companies probably out of business, I can't conceive of anyone else being able to pick up the slack. I had to guess, I'd say we will all soon be going back eating with our hands."

## Stocks Plummet In Record Time!!! Could This Be The End of Silverware?

In what appears to be a major setback for the electronic tool industry, the market closed down over one thousand points in combined issues of *Consolidated Fork*, *SpoonTech*, and *Knives International* yesterday. The adjustment was not entirely unexpected. Analysts, however, were taken aback by the severity of the downturn.

All three major utensil companies had been seeking to diversify in recent years, and all three had experienced major setbacks.



**Fork's Folly**  
*Consolidated Fork* had invested heavily in their Electric Fork, a battery powered device which stabbed steaks repeatedly until it actually hooked into the meat. It failed in market testing, when tests revealed that clumsy people who dropped the fork risk serious injury.

**Spoons Go South**  
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**Blades Bottom Out**  
*Knives International* was the third victim of yesterday's session, closing at an all-time low of one eighth cent per share, down from \$154.00 earlier in the day. Analysts attribute their failure to the consumer rejection of their new toy, Switchblade Silverware, designed to give people any utensil they desire at the flick of a switch.

"It sure beats me," said Ross Boone, president and CEO of *Knives International*. "I thought we had a great product at a great price. I bet it was the computer traders that did us in. It certainly couldn't have been my fault."

**Experts Ponder Future**  
Experts began to wonder if this would lead to an end of utensils for the mass public. Said expert Max Gontz, "If I had to guess, I'd say we will all soon be going back to eating with our hands."

## It's easy when you have the brains.

GEOS is a completely integrated environment that runs circles around every other operating system, mostly because it starts out a lot smarter. For example, it comes with a desktop file manager, three utility programs, four applications, five desk accessories, eleven fonts and, well, you get the idea. All of which opens your Apple II to all kinds of graphically-oriented applications, like writing, painting,

merging, desktop publishing, calculating and all that other fun stuff the more expensive Apples do.

There's even a set of pop-up desk accessories, like an alarm clock, a notepad and a calculator.

Now, you'd think it would take a rocket scientist to operate a system this smart, but with GEOS, all it takes is a point and a click of your mouse. Or touch of a joystick. Or a tap of a keyboard.

If your documents aren't winning any beauty contests, maybe your Apple IIe or IIc's problem isn't just cosmetic. Maybe what it really needs is a new brain. Like GEOS.

GEOS is the new graphic operating system that takes everything you do—including AppleWorks files—and makes them even better. Better looking. Better working. Better everything.



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Well, GEOS is easier on your eyes, too. Because the clear, sharp hi-res stuff you see on the screen is exactly what you get when it's all printed out.

## Turn your ugly ducklings into prints charming.

Of course, the real beauty of GEOS is how it turns any word processing document into a work of art—in seconds. And you can do it because GEOS comes with a TextGrabber™ that's ProDOS compatible. You just pour in your AppleWorks, WordPerfect or MultiScribe text, and in less time than it takes to say, "Yikes! What a great looking document!", your text is converted into geoWrite™ 2.1, the What-You-See-Is-What-You-Get word processor that lets you center, justify, search and replace text, move blocks of copy, cut, paste graphics and select fonts of different styles and sizes right on the screen.

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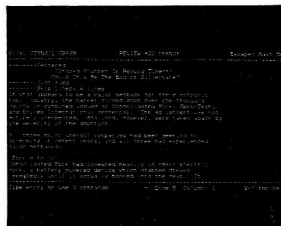
shade, fill, and pattern with incredible detail. There are all kinds of textures and brushes and graphic devices that ingeniously turn ordinary work into works of genius.

Manage this. Merge with that. Proof the spelling with

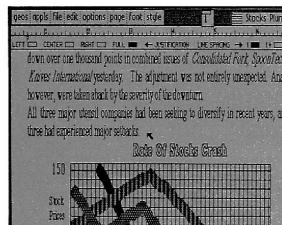
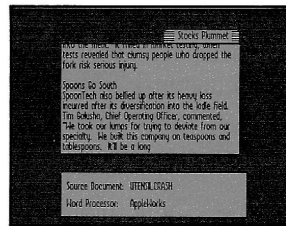
top publishers—you name it. All of them importing and exporting to and from each other, so that you can manage everything with one integrated system.

So if you think your document could do with a facelift,

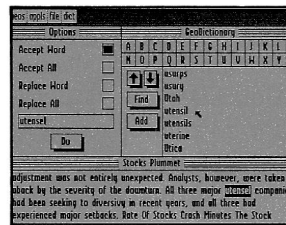
Take an ordinary AppleWorks file...



let Text Grabber import the text...

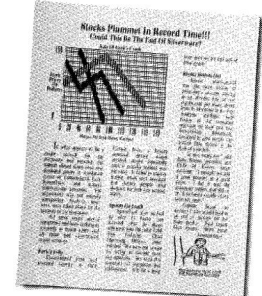
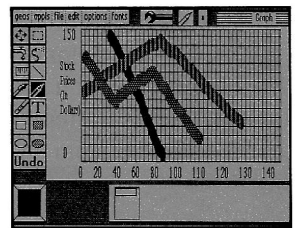


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geoPaint creates eye-catching graphics...



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# THE SIX-IN-ONE SOLUTION

*It's a new breed of 16-bit software: With six powerful integrated applications—including telecommunications and page layout—StyleWare's unique GSWorks challenges the productivity marketplace.*

by Dan Muse, Editor in Chief, and Paul Statt, Senior Editor

**T**he six programs that combine to make up GSWorks are solid stand-alone performers; however, it's the software's focus on integration that makes StyleWare's ambitious GSWorks different from anything else on the GS market—different from any other program on any market, for that matter.

GSWorks gives you up to 14 active “application windows” at a time. That is, you can have two word-processor files, two database files, four spreadsheet files, four graphics files, a page-layout file, and the telecommunications module all open at one time. It's similar to the AppleWorks Desktop, but goes a step beyond: You can use the mouse and control key to drag text from file to file—or window to window—or you can use the more traditional cut-and-paste to and from the clipboard, as you would in AppleWorks.

The following evaluation is a product *preview*, not a review. *inCider* spent several days in April experimenting with a pre-release version of GSWorks. We couldn't perform any quantitative tests with the incomplete program. Look for a full review, with benchmark tests, in the fall.

## WORD PROCESSING—MOUSE VS. KEYBOARD



The word processor is the heart of any integrated package. StyleWare apparently agrees, so it made the GSWorks word processor similar to MultiScribe GS—the company's best-selling GS word processor—but made it a little faster and smoother. It's also paragraph-based. That is, any changes in the ruler, which sets margins, justification, and

spacing, affect the paragraph where the cursor is located. You can copy ruler specifications anywhere in the document. StyleWare also offers an 80,000-word on-line spelling checker and thesaurus for GSWorks on a separate disk.

All GSWorks programs support multiple fonts and point sizes, as well as italic, underlining, boldface, and so on. If you'd like to add color to your text, you're covered there, as well.

One of the biggest obstacles GSWorks faces is making people give up AppleWorks and adapt to graphics-based word processing, which is generally slower and clumsier than text-based word processing with a program such as AppleWorks. If you're not a fan of mouse-based word processors, StyleWare provides keyboard alternatives to many file commands in pull-down menus. For example, you can open a new or existing file, as well as close, save, print, or quit a file from the GS keyboard.

Perhaps more importantly, most of the program's editing commands have keyboard equivalents. You can undo mistakes, cut, copy, paste, copy ruler, paste ruler, select all, or select paragraph. You can also access various style commands from the keyboard—plain, bold, italic, or underlined text, for instance. Playing with mouse-based commands is fun at first, but when you get into serious writing you'll appreciate the ability to let the mouse sleep while you work.

In testing GSWorks in mid-April StyleWare had yet to implement several features; however, the word processor did import AppleWorks word-processor files. By release, StyleWare assures us the program will also import database and spreadsheet files from AppleWorks.

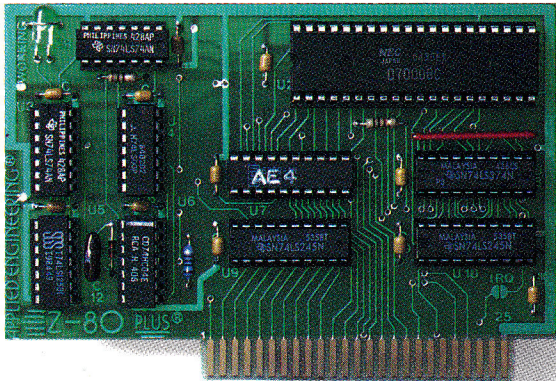




*Clockwise from top: With intelligent recalculation, color graphing, and a number of unique commands geared to easy programming, GSWorks' spreadsheet module sets a new standard; the efficient telecommunications program also sports a text editor; graphics-based word processing includes plenty of equivalent keyboard commands, plus multiple fonts, spelling checker, and thesaurus; GSWorks' database manager includes spreadsheet functions, flexible field definition, and the ability to incorporate graphics images; the graphics module offers both drawing and painting functions; versatile page layout, with seamless integration and a comprehensive toolset, means high-quality desktop publishing on your GS. Center: An array of palettes, tools, windows, formats, and functions make GSWorks the star of the productivity-software show.*



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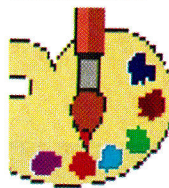
To get your Z-80 Plus or for more information see your dealer, or call 214-241-6060 9 a.m. to 11 p.m. seven days, or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add \$10.00 outside U.S.A.

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## GRAPHICS—THE RIGHT COMBINATION



GSWorks' graphics module features an interface that's similar to that of many drawing and painting programs on the market. Painting and drawing tools are on the left-hand side of the screen, and the color palette lies horizontally at the bottom. The program combines many of the capabilities of a drawing program with those of a painting program, offering the ease of use and freedom of painting programs such as Activision's Paintworks Plus and Electronic Arts' Deluxe Paint combined with the object-oriented precision of a drawing program such as StyleWare's own Top Draw or Activision's Draw Plus.

You can paint with a paintbrush, pencil, or spray can, or draw geometric objects such as squares, rectangles, circles, ovals, and so on. Click on any image to make it an object, then move it to the front or back under the main menu's Arrange heading. Or you can move an object anywhere on screen by selecting it and dragging it with the mouse.

## PAGE-LAYOUT PARTICULARS



The matinee idol of GSWorks is its page-layout program, one of the first GS-specific publishing programs available. This is where the images and text you've created with the graphics program and word processor come together, and where the benefit of GSWorks' integration is most obvious. After writing a document in the word processor, creating artwork in the graphics program, and making a pie or bar chart in the spreadsheet, you can bring them together in the desktop-publishing program by either dragging text from window to window or cutting and pasting from the clipboard.

You can set columns manually by clicking on the vertical ruler on the left side of the screen and dragging the vertical line to the location you want. Or use the Set Guide choice under the Options heading to establish a grid with two or three columns.

You can also set standard page formats. For example, you can have the top of every page show the document title and date and the bottom show the page number. Or you can set it up so that left-hand pages (odd-numbered) show the document title and right-hand pages (even-numbered) show the date and page number. You can also thread text through pages. That is, you can import different files or text objects into the page-layout program and "thread" them together so that the different text objects become one complete line of text. If you have four text objects on a page, for example, and edit or move the first one, it affects the other objects on the thread.

The page-layout application also has some drawing tools, so you don't need to rely on the graphics program completely for your artwork.

## INTEGRATION AT WORK

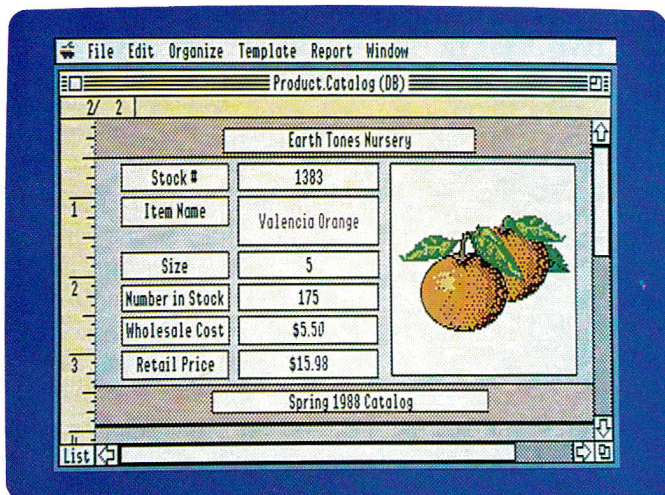
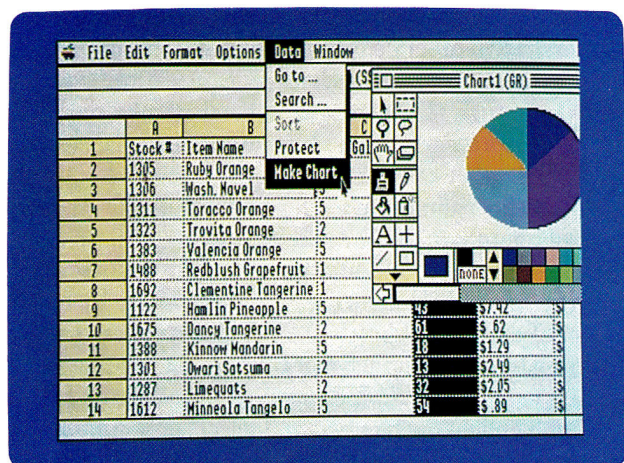


The GSWorks spreadsheet and database-management programs are so tightly integrated you may have trouble telling them apart. In fact, head programmers Tom Hoke and Mike Hibbetts admitted to us that they



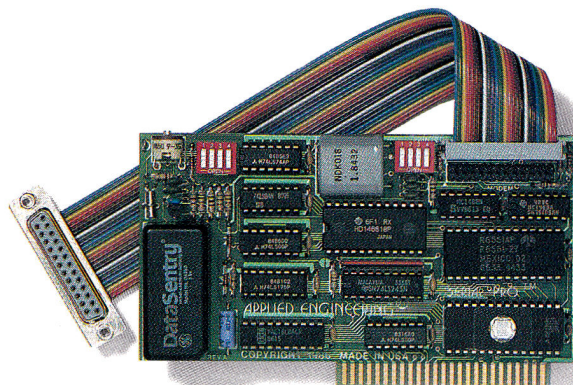
considered making the two applications a single module, much as Lotus 1-2-3 on IBM machines combines the computational power of a spreadsheet with the recordkeeping ability of a database manager. But StyleWare decided that Apple II owners (read AppleWorks users) were accustomed to a distinct database manager and spreadsheet.

The GSWorks compromise is a database manager that uses many spreadsheet functions, and a spreadsheet that uses database commands. The database manager can display either single records or multiple records; multiple-record format is indistinguishable from the spreadsheet, except for the menu bar. Turning a database file in multiple-record format into a spreadsheet file is as simple as highlighting a block of data and dragging it into a spreadsheet file.



Top, GSWorks lets you turn spreadsheet data into a pie chart, then access the graphics module to modify and enhance it. Bottom, create a "visual database" by importing pictures from the GSWorks graphics module or another GS paint program.

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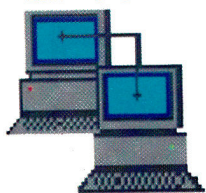






stamp collections, little black books (in color!), and insurance inventories, for instance. Imagine what you could do with the GSWorks database manager and a video digitizer.

## TALES OF TELECOMMUNICATION



StyleWare was frank with us about the status of GSWorks' telecommunications module: It works. That is, it dials and answers the telephone, works with the IIGS modem port, and sends GSWorks files effortlessly. It supports 300-, 1200-, and 2400-baud communication.

There's not really much need for a text editor in a seamlessly integrated package like GSWorks, but the telecommunications module offers one.

If telecommunications is your GS' primary use, you may want to wait for GSWorks. It supports most protocols, even the new Binary II file transfers, and most common modems. But telecommunications is a growing, changing business, with new software standards and hardware all the time. StyleWare will support more modems and protocols as that becomes necessary in the future, depending on what GSWorks owners ask for. The company has earned a reputation for listening to its customers, so we're sure it will keep users informed and send updated disks as they become available.

## A BREED APART

GSWorks is a big, ambitious project. Like most GS software, its Achilles' heel is speed. But Apple's rumored accelerated ProDOS 16 operating system should speed up GSWorks, if, as we hope, the programmers at StyleWare have planned for it. StyleWare suggests 768K in your GS; we lean toward a megabyte, and at least two 3½-inch disk drives or a hard drive.

Although StyleWare hopes to spare itself the promiscuous copying that made AppleWorks "the most popular program never sold," you can copy GSWorks to your hard disk, RAM disk, ROM disk, or any other kind of disk. StyleWare hadn't completed the protection scheme at press time, but it will probably involve use of a "key disk." We tested GSWorks with a ROM disk (Checkmate's Memory Saver) and found that an elegant solution for handling this mammoth program.

While we won't be certain until production copies become available, the integration of six applications and the inclusion of a quality page-layout program appear to set GSWorks apart from the rest of the GS productivity-software field. StyleWare has covered the bases by making provisions for incorporating text and graphics from other programs, but we're betting you may never want to leave GSWorks. ■

## Product Information

GSWorks

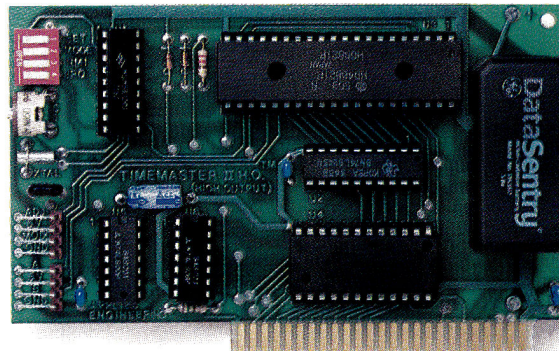
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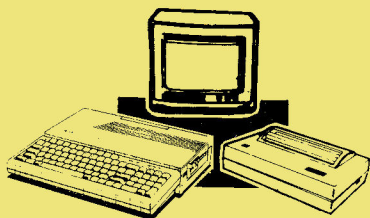
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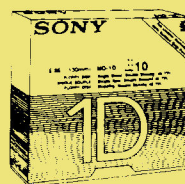
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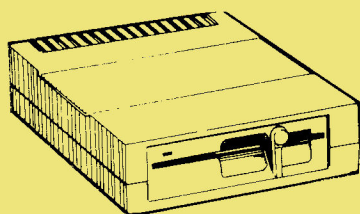
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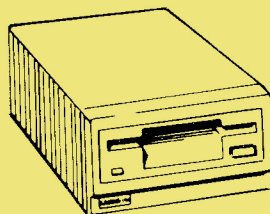
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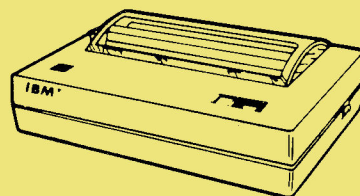
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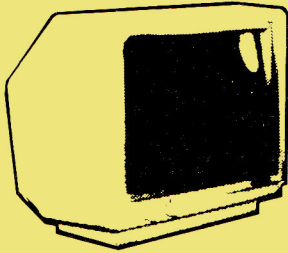
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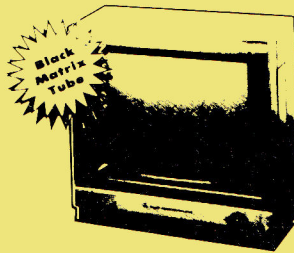
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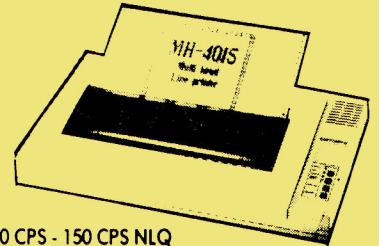
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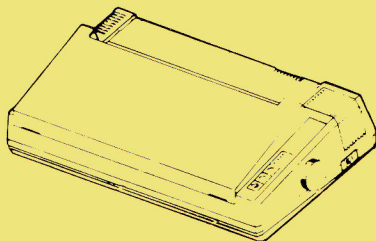
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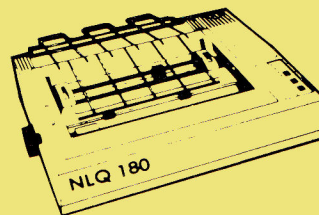
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# THE EASY SOLUTION

*What can mice, menus, and matrices do for your filing? With a graphics-oriented GS database manager in hand, getting organized has never been so simple.*

by Cynthia E. Field, Ph.D.,  
Contributing Editor

**T**ell the truth, now. Your file cabinet's bulging at the seams and you've got that beautiful, brand-new Apple IIGS sitting there—but somehow you just can't find the time to haul out all those folders and set up a database. It's a pain in the neck, it's boring, it's difficult, right?

You can stop procrastinating: Three graphics-oriented database-management programs for the Apple IIGS—**List Plus** (Activision), **Softwood GS File** (Brown-Wagh Publishing), and **Notes 'n' Files** (DataPak)—prove that information organization and management *can* be enjoyable, even entertaining.

How come? The IIGS makes it easy. Like other GS programs that espouse Apple's "human interface" standards, List Plus, Softwood GS File, and Notes 'n' Files feature pull-down menus, for one thing. That's where you'll find customary GS program functions like File and Edit as well as special database-management functions such as Sort and Calculate. Mouse control makes



these GS database programs simple to use, though mnemonic keyboard equivalents offer more direct access to some features. Keyboard equivalents can speed up certain database-specific processes—defining fields, for instance.

In fact, Softwood GS File's "Define Data" setup makes this process a snap. Press Open apple-D, then type the new category's name in its designated box. Next, using the mouse, click on "radio buttons" to select the category's closest attribute: Text, Amount, Date, Time, Yes/No, Phone, Alphabetic, or Alphanumeric.

List Plus and Notes 'n' Files include their share of radio buttons, too. In List Plus they can help you set up single- or multiple-record reports with centered, right-, or left-justified headers. In Notes 'n' Files, click on the designated radio button to print one-across, two-across, or three-across mailing labels.

While these three programs share many ease-of-use and productivity functions (see the accompanying **Table** for a feature-





by-feature comparison), GS database managers differ strikingly from each other and probably from any database programs you've seen before. Depending on your GS' memory, your computing budget, and your visual preference, any one of these programs can help you *enjoy* keeping track of life's otherwise-boring details.

### LIST PLUS—THE HYBRID

Activision's program requires 768K, a RAM expenditure that results in some extraordinary database features.

If you're one of those people who, to the dismay of purists, use a spreadsheet program habitually for "database" functions, take a close look at List Plus. Just boot it up and the main data-entry screen appears as a grid with columns and rows. Remind you of something you've seen before?

Just like a spreadsheet, List Plus lets you enter, edit, and manip-

ulate data within this graphics-based, on-screen matrix. Columns are fields; rows are records. You can toggle to the program's "index card" screen—a second appealing graphics display—and fill in individual records. If you've used AppleWorks, you're already adept at zooming in and out like this.

Unlike most database programs, GS or not, List Plus offers more than 30 mathematical operations and functions, affording you the option of building complex formulas containing not just numbers and functions, but constants, dates, column names, alphanumeric characters, and conditional if/then/else expressions, as well.

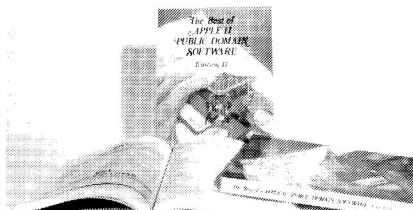
Commonly used analytical functions (Total, Count, Minimum, Maximum, and Average) are listed in the program's easily accessed, pull-down menu Calculate. Built-in functions that support advanced "spreadsheet" math, including trigonometric calculations, are not available, however.

List Plus stands apart from Softwood GS File and Notes 'n'



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Files in yet another way. You can work with four "lists" at a time, corralling each in its own movable, resizable window. Want to transfer a customer name from one list to another? It's as easy as using the program's Copy and Paste commands.

## SOFTWOOD GS FILE—

### GRID LINES KEEP YOU ORGANIZED

When Softwood GS File loads, you immediately notice its sedately colored screen display—the worksheet area may remind you of a sheet of ruled paper. Enter a field name, and the screen draws a vertical line, creating the first database category or "column." More fields yield more columns, until Softwood GS File, like List Plus, almost looks like a spreadsheet. (You can turn "grid" lines off if you want.) Softwood GS File supports basic mathematical operations only.

Like List Plus, Softwood GS File lets you use the mouse to expand column widths (field sizes) or to drag and position fields when you're laying out report formats. And this database program, like Activision's, lets you toggle between "list" and "index card" views. You can enter, edit, and manipulate database information in either mode. Fill in spreadsheet-like cells or fill in forms—it's all the same to Softwood GS File.

To speed up data entry, the program capitalizes the first character automatically. If you don't want this feature, disable it via the program's Open apple-U toggle.

Softwood GS File, like other database programs, searches through listings and sorts information in a variety of ways. Search criteria include the usual—equals, greater than, less than, contains, and so on. Instead of typing arcane codes, "press" radio buttons for the criteria you want. Sort selected records (or the whole database) by clicking on a single column or by clicking on sequential columns for multiple sorts.

Both List Plus and Softwood GS File let you create, format, and print free-form, table-, or label-style reports with an ImageWriter II. According to Terry Wright, developer of the program, Softwood GS File can theoretically support nearly any serial printer because of the way the program sends characters. There's no printer-configuration setup.

Softwood GS File appears "non-GS" in other, mostly trivial, ways. No ellipses trail the "save as" option, for example; and you don't "close" a file, you "abandon" it.

For 512K GSs, Softwood GS File is an attractive database option. Best of all, version 2.0, which should be available by the time you read this, promises to include graphics and sound capabilities at an upgrade cost of \$30 to registered owners of previous editions.

Wright says Softwood GS File 2.0 will include "a sound field and a picture field." He explains that the sound field can access digitized music on disk, for instance, while the picture field can integrate graphics from most popular GS paint programs. With these two field types, you'd be able to run slide shows, sound shows, or movies (combinations of slides and sounds). Wright suggests one particularly appealing application: "Say you have a music database of LP records. You could digitize music from a record (Brown-Wagh uses Applied Visions' FutureSound dig-



## Product Information

### List Plus 1.0

Activision, Inc.  
3885 Bohannon Drive  
Menlo Park, CA 94025  
(415) 329-0500  
(415) 329-7699,  
product support  
\$99.95

Reader Service No. 300

### Notes 'n' Files 1.3

DataPak Software, Inc.  
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### Softwood GS File 1.00.7

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itizer) and a picture of the album's cover."

These enhanced features will likely require additional memory—probably about 1 megabyte, Wright indicates.

## NOTES 'N' FILES—ICONS GALORE

If you like graphics features in database management, you'll take a shine to Notes 'n' Files.

To DataPak's program, databases filled with records are double-drawer file cabinets stuffed with manila folders. The program's graphics screen expands the metaphor further. A large file-cabinet icon representing the Master List (the main database) and smaller index-card icons representing two subsets of the Master List decorate the screen. There's even an icon of a copy machine (darned if it doesn't look like one) and the Macintosh-style trash can.

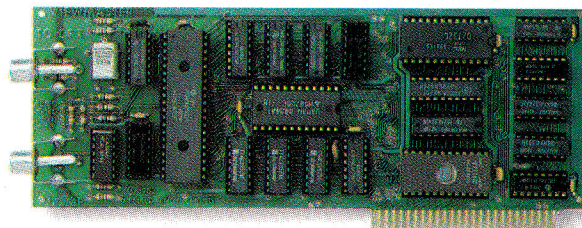
Wooing a new customer? Select a file folder from the "Stationery" stockroom (another icon on the Notes 'n' Files screen), open it (with a double click), and fill in customer information on the Folder Summary Form, preformatted with 15 fields, including name, address, and phone numbers, to help you organize your data. There are fields for miscellaneous entries and others for automatic date-stamping. A field for "Comments" is also provided. If you want to reconfigure the Folder Summary form, you can change field names to accommodate your needs.

Extending the office file-cabinet scenario, Notes 'n' Files' word processor lets you open document windows to create memos, customized form letters, and reports as long as ten pages. Integrate database information into these documents and store them in the file drawer containing a dedicated folder for each friend, customer, or association member.

Notes 'n' Files' word processor offers you a choice of two fonts (Helvetica and Bookman) in four styles (Plain, Bold, Italic,

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VISION 80	✓	✓			✓			
OMNIVISION		✓				✓		✓
VIEWMAX 80	✓	✓			✓			✓
SMARTERM	✓	✓				✓	✓	
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and Underline) and three sizes (9-, 12-, and 18-point). In addition to supporting the ImageWriter II in all black-and-white printing modes, Notes 'n' Files supports "letter-quality" printers in draft.

Notes 'n' Files is appealing not only for its iconic interface, but for its real-world file-cabinet analogy and its graphics-oriented word-processing features, as well. The program's preconfigured File Summary setup may be too constrained for some applications, and a lack of mathematical functions may preclude the program's acceptance by some database users. Still, Notes 'n' Files probably offers as much database-management performance as many GS-enhanced homes and small businesses need.



Top to bottom: Softwood GS File features "radio buttons" and organizational grids; Notes 'n' Files' interface is based on an iconic office file-cabinet scenario; List Plus offers basic spreadsheet functions.

## THE BEST YET

No database program I'm aware of can free you from the thought-intensive process of designing appropriate database record "forms." Furthermore, once you've set up your format, no database program I know of will type all that information for you!

Nevertheless, the software described here and in the accompanying Table provides GS owners with three distinctive, attractive ways of organizing everyday personal, professional, and business information. These programs do a creditable job linking the GS' present with its future—a future that's looking more appealing all the time. ■

	List Plus	Notes 'n' Files	Softwood GS File
Version	1.0	1.3	1.00.7
Price	\$99.95	\$129.95	\$99.95
RAM Required	768K	512K	512K
Approximate Loading Time (min:sec)	2:40	2:16	2:17
Main-Screen Appearance	spreadsheet	file cabinet	ruled paper
Pull-Down Menus	8	7	8
Keyboard Equivalents for Some Commands?	Y	Y	Y
Movable Windows?	Y	Y	N
GS Paint Palette?	N	N	N
Maximum # Fields per Record	50-60 + (RAM-dependent)	15	32
Maximum Field-Name Length (Characters)	16	40	15
Maximum Field-Entry Length (Characters)	255	37	64 (text field)
Maximum # Records per File Depends on Size of	RAM	disk	RAM
Maximum Limit	none	about 2500 records on 3 1/2-inch disk	32,000 records
Math?	Y	N	Y
Built-In Mail Merge?	N	Y	N
Integrate Graphics?	N	N	N
Choice of Fonts?	N	Y	N
Copy-Protected?	N	N	N
Part of Integrated Series?	N	N	N
Imports AppleWorks Database Files?	Y	Y	Y
Imports/Exports ASCII Files?	Y/Y	Y/Y	Y/Y
Free Templates?	Y (8)	N	N
Printers	ImageWriter LaserWriter	ImageWriter daisywheel	ImageWriter
Color Printing?	N	N	N

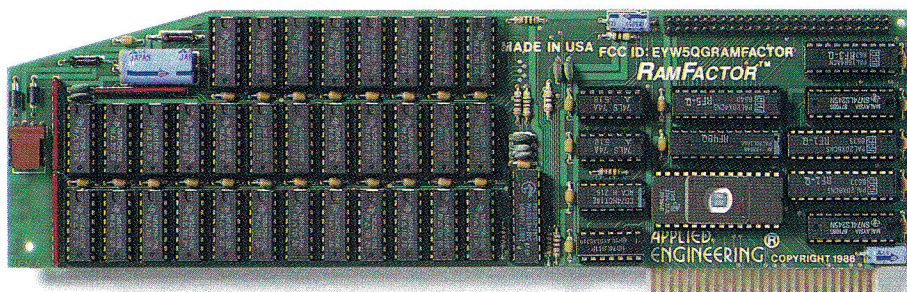
Table. Three GS database managers compared.

Cynthia E. Field is the author of *Field Trip*, inCider's column on educational software, and *Press Room*, our column on desktop publishing. She is a free-lance journalist specializing in computer-related topics. Write to her at 60 Border Drive, Wakefield, RI 02879. Enclose a stamped, self-addressed envelope if you'd like a personal reply.



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RamFactor is automatically recognized as additional workspace memory by AppleWorks 1.3 and 2.0. In addition, RamFactor's memory can be used for creating the ultimate in program speed—a lightning-fast RAMdisk for the Apple IIGs, IIfx, II+, Franklin and Laser 128. A RAMdisk does not depend on the slow moving parts of a conventional floppy drive. RAMdisks eliminate wear and tear on your disk drive plus your programs run up to 20 times faster! When a program is in RAM, your computer won't have to search for it in the mechanical disk drive during program operation. With RamFactor, you can have up to 9 separate simultaneous RAMdisks—even in different operating systems! Now you can instantly switch from one program to another or even switch from AppleWorks to DOS 3.3 to CP/AM to Apple Pascal 1.3 to ProDOS.

### Apple Memory Expansion Card Compatible

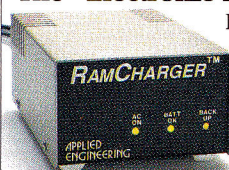
RamFactor is 100% Apple Memory Expansion Card compatible. This means that software designed for Apple's card is automatically compatible with RamFactor. Thousands of software programs—including AppleWorks, Pinpoint, MacroWorks, MultiScribe, and Managing Your Money—can take advantage of the speed and performance RamFactor provides. But with Apple's card, you can have only one RAMdrive partition instead of the 9 simultaneous RAMdrives that RamFactor offers. And that's only part of the story...

### 2.0 AppleWorks Power

Other slot 1-7 cards can give AppleWorks a larger desktop, but that's the end of their story. RamFactor provides many more powerful functions. It's the only slot 1-7 card that increases AppleWorks 2.0 internal limits by increasing the maximum number of records in the database to 22,600, increasing the maximum number of lines permitted in the word processor to 22,600, and expanding the clipboard size to 2,250 lines maximum. RamFactor is the only standard slot card that will automatically load all of AppleWorks into RAM, dramatically increasing speed and

eliminating the time required to access the program disk. It will even display the time and date on the AppleWorks screen with a ProDOS clock. RamFactor will automatically segment large files so they can be saved on multiple 5¼" and 3½" floppies or a hard disk. All this performance is available for the Apple IIfx, Laser 128, Franklin or 64K Apple II Plus when used with an 80 column card. No other standard slot card comes close to enhancing AppleWorks so much.

### The "Electronic Hard Disk"



Charger added to RamFactor, your program will appear almost instantaneously when you turn on your computer. RamCharger contains LED's that let you know RamFactor's reserve power status. Since RamCharger has its own built-in power supply, it can retain RamFactor's memory indefinitely. Plus, RamCharger's battery will continue backing up RamFactor's memory for up to 10 hours during power failures. An optional "Y" cable is also available that allows one RamCharger to power two fully expanded RamFactors.

### If 1 MEG Isn't Enough



A 4 MEG RamFactor Expander can be plugged into the expansion port on RamFactor for up to 5 MEG's total. RamFactor Expander uses standard 1 MEG chips and can be expanded in 1 MEG increments. With the addition of RamCharger, both RamFactor and the expander will provide up to 5 MEG's of lightning-fast battery backed storage.

### Features

- Compatible with Apple IIGs, IIfx, II+, Franklin and Laser 128
- 256K to 1 MEG on main board with 256K

memory chips; expansion port supports up to 5 MEG with Expander option

- 100% Apple Memory Expansion Card compatible
- RamCharger battery back-up option available for permanent storage
- Reduces power strain to internal power supply with RamCharger option
- Fully socketed and user upgradeable
- Expands internal limits of AppleWorks 2.0
- Automatically recognized by ProDOS, DOS 3.3, Apple Pascal 1.3 and CP/AM
- Built-in RAMDrive software (true RAMdisk not disk caching)
- Graphic memory test included
- Allows Apple II+ to run AppleWorks 2.0 without buying additional software
- Automatically recognized by AppleWorks 1.3 and 2.0
- Fits in any I/O slot except slot 3
- 5 year warranty — parts and labor
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<b>RamFactor Expander with 1-4 MEG</b>	<b>CALL</b>
<b>RamCharger backup option</b>	<b>\$179</b>
<b>"Y" cable</b>	<b>\$24</b>

(Allows one RamCharger to power two RamFactors.)

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*Don't let information storage turn into a three-ring circus. From stamps to membership rosters to bibliographic notes, an Apple II database manager can whip those records into shape.*

# Tame Your FILES



by Cynthia E. Field, Ph.D.,  
Contributing Editor

**B**aseball cards, coins, books, ancestors, correspondence, team lists, videotapes, personnel records, sales and inventory statistics, reference lists—everybody collects *something*. Keeping track of things seems to be a natural human urge—you don't have to be wealthy and you may not be organized. What do you do with that mountain of information? Let your Apple II store it, sift it, and tell you about it: Database-management programs for the Apple IIe and IIc appeal to a broad spectrum of personal, professional, and business users. (For classroom applications, see the accompanying sidebar, "Databases Go to School.")

Whether your information-filing needs are workaday or extraordinary, take a close look at these six ProDOS contenders: **AppleWorks** (Clarisc), **Trio** (Softsync), **The Filer** (Spinnaker), **ProFiler** (Pinpoint Publishing), **DB Master Version Five**, and **DB Master Version Five Professional** (Stone Edge Technologies). (See the accompanying **Table** for a feature-by-feature comparison of these products.)

A seventh program, the ProDOS version of the integrated word processor, spreadsheet, and database manager **DoReMe**, was released recently, as well. (DOS version 1.0 was reviewed in *inCider's* September 1987 issue, p. 30.) According to its manufacturer, Multisoft, DoReMe now includes business graphics, a keyboard-macro facility, and the ability to read AppleWorks files. Look for a review in an upcoming issue.

## APPLEWORKS—AN OLD FAVORITE

It's no wonder AppleWorks places consistently in the Apple II "top ten." To begin with, AppleWorks is integrated: Its database component can share information with its word-processing and spreadsheet modules, letting you mail personalized letters to sales prospects or to transfer account data to financial worksheets.

AppleWorks' stacking-file-card menus and mnemonic open-apple key commands make the program easy to learn, though the other programs we'll describe are at least as amicable. When you consider the multitude of preformatted database templates you can acquire—often from users like yourself at little or no cost—you'll begin to appreciate AppleWorks' cosmopolitan appeal.

Whether you use AppleWorks or another database program, setting up an information file is as simple as typing in category (field) names. Next, complete a record by typing in appropriate information for each category. Each AppleWorks database file—analogue to a traditional flip-top box filled with index cards—can accommodate as many as 6350 "cards" (records), each with up to 30 categories whose entries can be as long as 76 characters each. If 76 characters seems too restrictive, you'll soon find ways to devise meaningful abbreviations to squeeze more information into a particular record and maximize use of computer memory.





	AppleWorks	Trio	The Filer	ProFiler	DB Master 5	DB Master 5 Pro
Version	2.0	1.2	N/A	3.1	8060	prerelease 4.3
Price	\$250	\$59.95	\$9.95	\$129.95	\$179	\$295
RAM Required	128K	128K	128K	128K *	128K *	128K *
Menu Appearance	stacking file-card menus	bottom menu bar	drop-down menus	pull-down menus	boxed menus	boxed menus
Reads ProDOS Clock?	Y	N	N	Y	Y	Y
Mouse?	N	N	N	optional	N	N
Maximum # Fields per Record	30	99	10	250	200	200
Maximum Field-Name Length (Characters)	20	76	12	76	20	20
Maximum Field-Entry Length (Characters)	76	76	25	full screen 1680	varies 250 (alpha)	varies 250 (alpha)
Maximum File Size	6350 records (750 with 128K)	999 records	10,000 records	8 MB	10 MB	10 MB
Built-in Macros?	N	N	N	Y	N	N
Relational?	N	N	N	Y	N	Y
Math?	Y	N	N	Y	Y	Y
Graphing?	N	N	N	N	Y	Y
Built-In Mail Merge?	Y	Y	N	N	Y	Y
Copy-Protected?	N	N	N	N	N	N
Part of Integrated Series?	Y	Y	Y	N	N	N
Imports AppleWorks Database Files?	N/A	N	N	Y	Y	Y
Imports/Exports ASCII Files?	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y
Imports/Exports DIF Files?	Y/Y	N/N	N/N	N/N	N/Y	N/Y
Free Templates?	N	N	N	Y	Y	Y
Password Protection?	N	N	N	N	N	Y

\* IIfx must be enhanced

Table. Six Apple IIe/IIc databases compared.



cards—can accommodate as many as 6350 “cards” (records), each with up to 30 categories whose entries can be as long as 76 characters each. If 76 characters seems too restrictive, you’ll soon find ways to devise meaningful abbreviations to squeeze more information into a particular record and maximize use of computer memory.

As with other database programs, AppleWorks lets you manipulate the information in your growing database in a number of ways. You can use the Find command to search for a particular piece of information (your contact person at XYZ Corporation, for instance) or use the Record Selection command to sift through the database and locate only those records that meet up to three specific criteria: United States commemorative stamps printed since 1945, videotape movies starring John Wayne and Maureen O’Hara, or New England plumbing-supply houses offering discounts greater than 15 percent. Sort records alphabetically or numerically (in forward or reverse order) and print variously formatted label- or table-style (columnar) reports—with or without basic computations, such as column totals.

AppleWorks is no heavyweight in the database-management arena, but Claris’ program seems to suffice for many people who participate in a wide variety of projects—from collecting stamps to maintaining a club roster.

### TRIO—FOR THE BUDGET-MINDED

Trio, priced at \$59.95, is a low-cost alternative to AppleWorks, especially for users who need an integrated program but don’t

care about commercially available add-ons (such as Beagle Bros’ **TimeOut** series, reviewed in May 1988, p. 22, or Pinpoint’s **Desktop Accessories**) and want to bank the \$190 price differential. This three-in-one product includes Trio Word (the word processor), Trio Calc (the spreadsheet), and Trio File (the database).

Like ready reminders, Trio File’s commands are displayed in menu strings across the bottom of the program screen. To execute a command, press the first letter of the option together with the open-apple or closed-apple key. If you forget an AppleWorks command, you have to access on-line help or dig out the AppleWorks Quick Reference Card. With Trio, commands are in plain view.

Like other database-management programs, Trio File offers shortcuts that help you save time during data-entry or -editing sessions. In AppleWorks you can implement the ditto command to replicate information from one record to the next. In ProFiler, use Fixed Fields. In Trio File, choose the Copy command.

Like AppleWorks, Trio wasn’t designed for power users. Trio File doesn’t even “do” math, for instance—you have to transfer data to the spreadsheet for that. And Trio database files are limited to 999 records and single-field searches.

On the plus side, each Trio File record can have as many as 99 information categories, compared to AppleWorks’ 30. Like other programs described here, Trio is noncopy-protected.



## Product Information

**AppleWorks 2.0**  
Claris Corporation  
440 Clyde Avenue  
Mountain View, CA 94043  
(800) 334-3535  
(800) 668-8948 (Canada)  
\$250

Reader Service No. 304

**DB Master Version Five,**  
\$179  
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**Multiuser,** \$500  
**DB Master Version Five**  
**Classroom,** \$500  
**DB Master Version Five**  
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Stone Edge Technologies  
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**DoReMe**  
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New York, NY 10128  
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upgrade from DOS 3.3

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**ProFiler 3.1,** \$129  
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Emeryville, CA 94608  
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Reader Service No. 309

**Trio 1.2**  
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New York, NY 10016  
(212) 685-2080  
\$59.95

Reader Service No. 310



## EASY WORKING FILER—SIMPLICITY ITSELF

It's natural to be cynical about products that cost less than \$10, but you may be pleasantly surprised by The Filer, one of three productivity programs in Spinnaker's integrated Easy Working Series. The two "partner" programs, at \$9.95 each, are called The Writer (a word-processing program) and The Planner (a spreadsheet program).

The Filer is not only easy on your pocketbook, it's easy on your memory. (Your Apple needs 128K, however.) Program options are organized within drop-down main menus and subsequent pop-up submenus. The program doesn't support the mouse.

These attractive features notwithstanding, The Filer is probably too limited for most database users, though it would be an excellent first database program for children or those new to computing. Each record can have only ten categories, and each field entry is limited to 25 characters—not powerful enough to run a business perhaps, but perfect for keeping track of paper-route customers, favorite rock videos, or a baseball-card collection.

## PROFILER—POWER AND VERSATILITY

If you want a Mac-like database manager that's evolved well beyond AppleWorks, consider ProFiler. Not graphics-oriented in the Apple IIgs sense of the word, ProFiler is built around mousetext. Program options are collated within seven pull-down menus: Apple, File, Edit, Search, Print, Setup, and Utility.

ProFiler doesn't require a mouse, though that little critter can facilitate the layout of free-form reports. Feature by feature, you can pick and choose the input mode—mouse, keyboard, or "mouseless mouse"—that works best for you.

Each ProFiler record can accommodate as many as 250 fields; field names can be as long as one screen line (76 characters), and a single field can fill a screen page (about 1680 characters).

Users who need to keep track of copious amounts of text-based material—bibliographic abstracts, for example—should find ProFiler's scrolling, eight-screen recordkeeping capability a boon to their productivity. ProFiler database files can be as large as 8 megabytes.

ProFiler offers other advanced features: built-in macros, word wrap of field entries longer than 79 characters, and a search-

## Databases Go to School

Kids today think nothing of doing two things at once—whether it's skateboarding while listening to a Sony Walkman or doing their homework while chatting (incessantly!) on the phone.

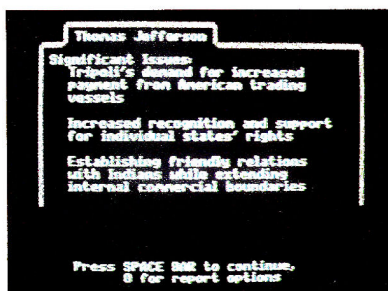
At least four publishers of educational software products offer programs that should appeal to children's natural "multitasking" abilities. MECC, Mindscape, Sunburst, and Scholastic offer database packages that, together with a concerned teacher's guidance, can help develop your son's or daughter's level of computer literacy, increase knowledge of traditional subjects like science or history, and enhance analytical skills.

MECC's series revolves around the company's proprietary database-management program, **MECC Dataquest**. Teachers can create custom databases with **MECC Dataquest Composer** or use preconfigured databases such as **The Fifty States** (grades 5–11), **The Presidents** (grades 7–12), and **The World Community** (grades 7–12).

Besides the MECC Dataquest series, the company offers **Databases in the Classroom** (grades 6–12) in two versions. One series of files is MECC Dataquest-compatible; the other sampler requires **AppleWorks**.

Mindscape's curriculum-based programs, collectively known as **Quest for Files** (grades 9–12), include some databases that focus on social studies: **Dawn's Early Light**, **Hail to the Chief**, and **The Melting Plot**. The Quest for Files: Science series includes **The Upper Crust** (geology), **A Matter of Mystery** (chemistry), and **Food, Glorious Food** (nutrition).

Sunburst's databases are based on Broderbund Software's unintimidating, anyone-can-use-it database program, **Bank Street Filer**. Like its predecessor, the word processor **Bank Street Writer**,



*MECC's educational database series Dataquest includes files on U.S. Presidents.*

## Product Information

**Bank Street Beginner's Filer**, \$79 (415) 492-3200  
**Bank Street School Filer**, \$99 (800) 527-6263

**Animal Life, Astronomy, Climate and Weather, Colonial Times, Endangered Species, North America, Space, U.S.**, \$59 each  
Sunburst Communications  
39 Washington Avenue  
Pleasantville, NY 10570  
(800) 431-1934  
(800) 247-6756 (Canada)  
(914) 769-5030 (collect)

Reader Service No. 311

**Bank Street Filer**, \$69.95  
**Bank Street Mailer**, \$24.95

**Bank Street Writer**, \$69.95  
**Bank Street Writer Plus**, \$79.95  
Broderbund Software  
17 Paul Drive  
San Rafael, CA 94903-2101

**Dataquest Composer**, \$55  
**Dataquest Sampler, AppleWorks Sampler**, \$45 each  
**MECC Dataquest: The Fifty States, The Presidents, The World Community**, \$55 each  
MECC  
3490 Lexington Ave. North  
St. Paul, MN 55126  
(612) 481-3500  
(800) 228-3504

Reader Service No. 312



and-replace command for one-shot database editing.

Jim Kuhlman, author of ProFiler, has outfitted the latest edition of the program with even more productivity boosters. Version 3.1 includes a zoom window to provide a scrolling, seven-field record summary. Four new field types expand the program's power exponentially. You can have "calculated" fields *within* a record, and a "relational" field that searches for information in another database file. New "graphics" fields let you display hi-res, double-hi-res, super-hi-res, or packed-format graphics within a record. Pinpoint's Greg Hastings explains that you can "put a series of graphics fields in a record and import some charts from **Graphic Edge** to display your company's first-through fourth-quarter earnings. Or use this new feature to create geography lesson plans." A unique "launch" field lets you leave your place in ProFiler temporarily and go to another program. Finish typing a letter to a client, say, and return to ProFiler to resume working with your database.

ProFiler isn't part of an integrated series, however, and lacks a couple of fundamental features: built-in mail merge (you can perform merges via Apple Writer's Word Processing Language

or an ASCII file) and the capability to print two- or more-across mailing labels. This latter enhancement is offered through the \$49.95 add-on product, **ProFiler Label Utility**.

Business and academic users have a choice of configurations for installing ProFiler in their locations. Various types of lab packs and networking versions are available.

### DB MASTER—ADAPTING TO DIFFERENT NEEDS

DB Master Version Five (see this month's Editors' Choice, p. 96) is a powerful, menu-driven, page-oriented database program whose main competition probably comes from ProFiler in terms of power and AppleWorks in terms of popularity.

In some ways, DB Master Version Five may represent the best of both worlds. Each record can have as many as 200 fields; maximum file size is 10 megabytes. The program features free-form text insertion (via a built-in mini word processor), and multiple-across label-printing capabilities.

DB Master Version Five doesn't wear a "modern" face or support the mouse, however. Neither does it offer the special fields ProFiler 3.1 does.

**Quest for Files:**  
**Social Studies:**  
**Dawn's Early Light,**  
**Hail to the Chief,**  
**The Melting Plot**  
**Quest for Files: Science:**  
**The Upper Crust,**  
**A Matter of Mystery,**  
**Food, Glorious Food**  
**Mindscape**  
3444 Dundee Road  
Northbrook, IL 60062  
(312) 480-7667  
(800) 221-9884  
\$49.95 each, \$99.95 lab pack

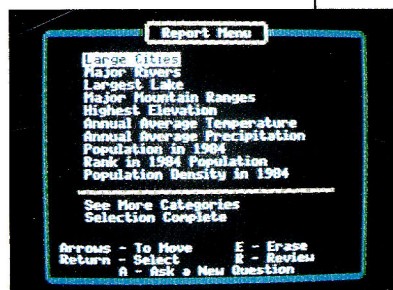
Reader Service No. 313

**PFS:File & Report**  
Software Publishing Corp.  
1901 Landings Drive  
Mountain View, CA  
94039-7210  
(415) 962-8910  
\$99

Reader Service No. 314

**Scholastic Data Files**  
**for Bank Street Filer,**  
\$69.95  
**Data File/Bank Street Filer**  
**Package, \$99.95**  
**Scholastic Data Files**  
**for AppleWorks:**  
**The U.S. Constitution**  
**Then and Now,**  
**Weather and Climate Lab,**  
\$59.95 each  
Scholastic, Inc.  
2931 East McCarty Street  
P.O. Box 7502  
Jefferson City, MO 65102  
(800) 325-6149  
(800) 392-2179 (MO)

Reader Service No. 315



*MECC Dataquest's Fifty States files are geared to students in grades 5-11.*

Filer is reasonably priced and can be used by the whole family. A third companion product, **Bank Street Mailer**, helps individuals keep mailing lists and send personalized form letters.

Sunburst publishes two versions of Bank Street Filer: **Bank Street Beginner's Filer** (a "learner's version" for children in grades 2-6) and **Bank Street School Filer** (grades 5-12).

Sunburst offers a well-rounded series of eight preconfigured science and social-studies databases for students in grades 4-12: **Animal Life**, **Astronomy**, **Endangered Species**, **Space**, **Climate and Weather**, **North America**, **U.S.**, and **Colonial Times**.

The **Scholastic Data Files** package for Bank Street Filer (grades 5-9) includes three databases on a single disk: **Zoos**, **News**, and **Animals**. In addition to learning how to use Bank Street Filer and ultimately how to create their own database files, students can play "roving reporter" or "scientist," improving their writing and analytical skills.

Scholastic also sells Data Files for AppleWorks users: **The U.S. Constitution Then and Now** and **Weather and Climate Lab** (both for grades 7-12). A series of databases for users of **PFS:File** is also available.

By and large, these databases from MECC, Mindscape, Sunburst, and Scholastic are not ordinarily intended for home use. They generally cost in excess of \$50 and come with manuals that address teachers' concerns.

Database programs like these probably work best when a teacher prompts and challenges a student to test hypotheses or discover new relationships among seemingly stale pieces of information. But if your son or daughter has a special interest in database management or in any of these curriculum areas, by all means consider these educational products for your home library. □

—C.F.



# AppleWorks Is Great!

**But...**

Let's face it. AppleWorks is a great program, but as a data base manager it leaves a lot to the imagination. Like, imagine more than 30 categories per record. (Lots more!) And using up to 30 screens in the single record display. Or scrolling left and right to see more fields in a multi-record display. And entering up to 250 characters per category.

## ACE REPORTER

Imagine printing reports in almost any form: multiple-across mailing labels, columnar reports, mail-merge letters. Even complex forms like school or medical records or invoices. Reports that include free-form text, and printstyles like bold, large and underline, and every easy-to-use formatting option you're ever likely to need.

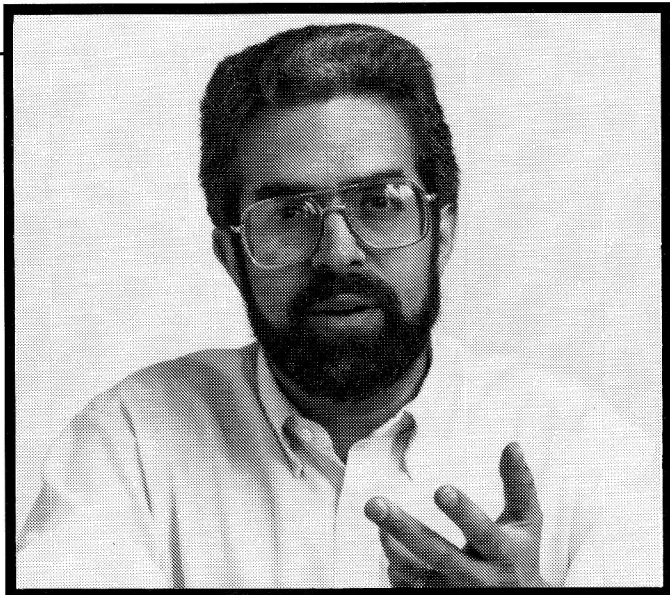
## FORMULAS FOR SUCCESS

Imagine calculated categories—lots of them. Not just in reports, but within the records themselves, too. Using multiple levels of parentheses, and date math and string comparisons and other functions. Imagine reports with calculations based on subtotals and totals. Reports that can even group records by week, month, calendar quarter or year.

## DB Master vs. AppleWorks

Features and Maximum Capacities	AppleWorks	DB Master Version Five	DB Master Version Five Professional
■ RELATIONAL IMPORT (look-up) and EXPORT (posting) RULES	No	No	YES!
■ fields (categories) per record	30	200	200
■ max. record length (bytes)	1,024	2,000	2,000
■ screens per record	1	30	30
■ characters per field (category)	76	250	250
■ RAM or disk based?	RAM	Disk (1)	Disk (1)
■ passwords for file security	No	No	Yes
■ required fields	No	No	Yes
■ field validation rules	No	No	Yes
■ criteria per search or select	3	20-50	20-50
■ computed values within records	None	99 (2)	99 (2)
■ computed values per report	3	50 (2)	50 (2)
■ date calculations	No	Yes	Yes
■ field types	3	13 (3)	13 (3)
■ automatic date and time fields	No	Yes	Yes
■ current mon/day/year searches	No	Yes	Yes
■ report formats per file	8	255	255
■ multiple-across mailing labels	No	Yes	Yes
■ forms-style reports	No	Yes	Yes
■ report lines per record	15	255	255
■ calculations based on subtotals	No	Yes	Yes
■ free-form text in reports	No	Yes	Yes
■ print fields and/or free-form text in various printstyles	No	Yes (4)	Yes (4)
■ print simple bar graphs	No	Yes	Yes
■ multiple levels of header and footer lines for reports	No	Yes	Yes
■ include fields in header and footer lines	No	Yes	Yes
■ multiple levels of group subtotals in reports	No	Yes	Yes
■ add and/or delete fields without losing report formats	No	Yes	Yes
■ works with RAM disks	Yes	Yes	Yes
■ copy protected?	No	No	No

(1) up to 50 disks per file: 5 1/4", 3.5" or mixed; up to 10 megabytes per file on hard disk  
 (2) use + \* / > < = < > AND, OR, NOT, SQR, ABS, SGN, INT, MIN, MAX, up to 7 levels of parenthesis; text comparisons, days-between dates, calculated dates; special "Current Date" function, etc.  
 (3) text, 3 numeric types, \$/cents, yes/no, date, add date, edit date, add time, edit time, user-defined, label  
 (4) underlined, bold, compressed, large, italics and user-defined print styles; depend on printer's capabilities



**Barney Stone**

**Designer, DB Master**

## RELATIONAL? SENSATIONAL!

And if that's not enough, imagine a *relational* data base manager. One that does automatic look-ups and posting. Imagine an invoice file that looks up customer names and addresses in a customer file, then descriptions and prices in an inventory file, then posts quantities shipped and back-ordered back to the inventory file, and finally posts the amount due to the appropriate record in the customer file. Imagine doing this easily, without any programming.

## RECOMBINANT DBM

Is your AppleWorks data split into several files? Imagine combining them into one convenient file. Do the AppleWorks files have different categories, so each record in one file has a corresponding record in the other file? And they really should have been a single record, but there were too many categories? Imagine combining them properly, so the information that belongs together is in one record.

## DREAM ON!

Imagine that all of this, and much, much more, is available **right now**, in DB Master Version Five and DB Master Version Five *Professional*.

Sometimes wishes do come true!

# DB MASTER<sup>®</sup>

## VERSION FIVE

**The Ultimate Data Base Manager  
for the Apple //**

Requires Apple //e (enhanced with extended 80-column card), //gs, //c or Laser 128. At least two 5 1/4" floppy disk drives, or any combination of 5 1/4" and 3 1/2" floppies, ProDOS compatible hard disk, or RAM disk.

Version Five — \$179. *Professional* — \$295. Demo — \$10.

Available now from your local dealer or direct from:

**Stone Edge Technologies, Inc. (215) 641-1825**  
**P.O. Box 200, Maple Glen, PA 19002**

Add \$5 for shipping/handling (\$30 outside U.S.A. or Canada)

DB Master is a registered trademark of DB Master Associates. Apple is a registered trademark and AppleWorks is a trademark of Apple Computer, Inc.



Take the program one quantum leap further and you have DB Master Version Five Professional. This relational database program can move information automatically between one file and as many as ten others in either direction in one fell swoop.

With DB Master Version Five Professional you can type a customer number, item number, and quantity on a screen-based invoice form and watch the program fill in customer information (such as a billing address) automatically; check inventory files to see whether you've got enough items in stock (and whether you need to reorder); complete the product's description on the invoice; calculate discounts, shipping and handling charges, and sales tax; and tally the amount due.

Truth is, not everyone needs or wants this level of power. Some want less, some want more—different strokes that haven't escaped Stone Edge Technologies' attention.

For example, a lightweight classroom version offers many DB Master Version Five features, but supports only 100 records per file. The \$500 licensing fee lets you make as many copies as necessary to equip each Apple in your classroom or computer lab.

In another development, Stone Edge Technologies hopes its new DB Master Version Five multiuser option will make inroads into the small-business market. As many as 16 people can enjoy read/write access to any given file at the same time. Password protection is built in. This networking version is compatible with Apple's AppleTalk, Corvus' OmniNet, and Lantech's E-LAN networks, according to Barney Stone of Stone Edge.

The company is beginning to address vertical markets, too. Stone's company sells a malleable DB Master Version Five to developers, who then customize the program's screens and features for professional offices. So far, dental-office management and executive-search-service packages have been created this way.

Visions of a GS-type DB Master Version Five are starting to

come into focus. Stone's wish list for the GS version—which he says he hopes to ship in early 1989—includes improved word-processing features (with automatic word wrap—something current versions lack), increased space for text within a field, and built-in macros. To preserve DB Master's power and speed, however, the GS version may use the machine's text screen, a mousetext approach similar to ProFiler's.

## DECISIONS, DECISIONS

Which database-management program is right for you? As with any kind of program for your Apple, your choice depends as much on your current and anticipated needs—and your budget—as on any program's "special" functions. What good are features you'll never use? On the other hand, you don't want to run into a logjam when your business outgrows a flat-file system and needs relational capabilities, for instance.

Hordes of users cling to AppleWorks, while others crave the power that only ProFiler or the newest DB Master programs can provide. Still others have casual database requirements and shy away from spending hundreds of dollars just to mail personalized form letters to members of the local bridge club or condo owners' association. For these folks, EasyWorking Filer or Trio just might do the trick. Whatever your files' special requirements, however, the range of Apple II database managers is broad enough to offer something for every collector. ■

*Cynthia E. Field is the author of Field Trip, inCider's column on educational software, and Press Room, our column on desktop publishing. She is a free-lance journalist specializing in computer-related topics. Write to her at 60 Border Drive, Wakefield, RI 02879. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*

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*Why pound the pavement? An AppleWorks database brings ease and efficiency to your job search.*

# Focusing on Prospective Employers

by Ruth K. Witkin

If you're thinking seriously about a new, more challenging position, you need to do some serious legwork. The primary task is uncovering job leads. For starters, you'll want to explore personal and business contacts, trade or professional associations, help-wanted advertisements, and employment and executive-search firms.

Gathering, organizing, and keeping track of information require a great amount of time and effort. Then you have to compose, print, and present your credentials (cover letter and résumé) to prospective employers—more time and effort. There's also followup to find out where you stand with a company or to provide additional information. More time and effort.

AppleWorks can minimize the time you spend in behind-the-scenes activities and maximize the time available for pursuing leads. In this session, you'll create a database of prospective employers to simplify data storage. This database is the second installment in a job-hunt series that started last month with a résumé ("Résumé On File," June 1988, p. 82) and ends next month with a cover letter mail-merged with database records.

A database does double duty during a job hunt. As well as being a vast storage area that gives instant access to details, it provides the necessary information for the cover letter, so that you don't have to type items twice.

When you see such key combinations as OA-Y, hold down the open-apple key and type Y. With repeated combinations, such as OA-left arrow (3 times), hold down the open-apple key and press the left-arrow key three times.

## A DATABASE FROM SCRATCH

Now use the AppleWorks Startup and

Program disks to bring up a new database screen. Name this file **EMPLOYERS**. You should now see the Change Name/Category screen. To make it easier for you next month when you exchange data between files, store **EMPLOYERS** on the data disk containing the résumé file **RÉSUMÉ**.

The **EMPLOYERS** database will contain 14 categories, three of which are spares. A spare is a safety net. It's a good idea to include at least one in every database, even when you're convinced you've covered every contingency. In this database, for example, you can use spares later for company phone numbers, separate state and zip-code categories (they're lumped together here to speed up data entry), company business if listed in the advertisement, or responses to your résumé.

Without spares, you'd have to insert categories, which makes custom-screen layouts and report formats vanish. You can reconstruct them, of course, but why spend the time? Simply make spares an integral part of every database.

Now enter the category names. Press OA-Y to erase *Category 1*. Type each of the following category names (in uppercase, to make them stand out), and press Return after each one:

FIRST MI  
LAST NAME  
TITLE  
COMPANY NAME  
DIVISION  
STREET  
CITY/ST/ZIP  
COURTESY  
NEWSPAPER  
APPEARED  
POSITION  
SPARE  
SPARE  
SPARE

Check to make sure you've entered every category. If one's missing, place the cursor on the category name immediately below the spot where the missing one belongs, press OA-I to insert a blank line, and type the category name. Then press OA-Y to delete the dash at the end, and press Return.

Press OA-S to store the database on disk. AppleWorks now informs you that you'll enter Insert New Records mode automatically. Press Return, and Record 1 appears with all categories awaiting your entries.

## INSERTING THE RECORDS

Figure 1 shows the entries in Records 1–6, which reflect (fictitious) help-wanted ads in several newspapers. Records 1, 2, and 5 contain contact name, title, and address of the company. Record 6 has all these entries but no contact title. Records 3 and 4 came from blind ads that gave only a post-office box number, but no company or contact.

Companies that omit a contact name and/or title in their advertisements make it difficult to phrase a proper courtesy salutation (pulled from the **COURTESY** category) in a cover letter. As you can see in Records 3 and 4, when you don't know who'll receive your letter, it's wise to use the innocuous **Dear Mr. or Ms.**, not the stilted **Dear Sir or Madam** or the sexist **Dear Sir** or **Dear Madam**.

## SETTING STANDARD VALUES

A standard value is an entry common to many or all records. The same newspaper (*Newsday*) appears in three of the six records, as does the date (July 10, 1988). Make them both standard values. Press the down-arrow key eight times to move the



# ARE YOU PREPARED FOR TOMORROW?

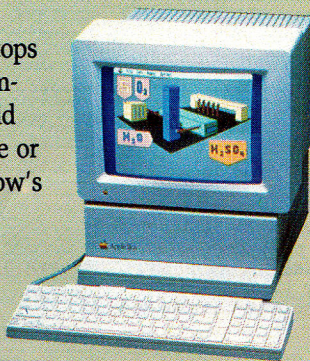
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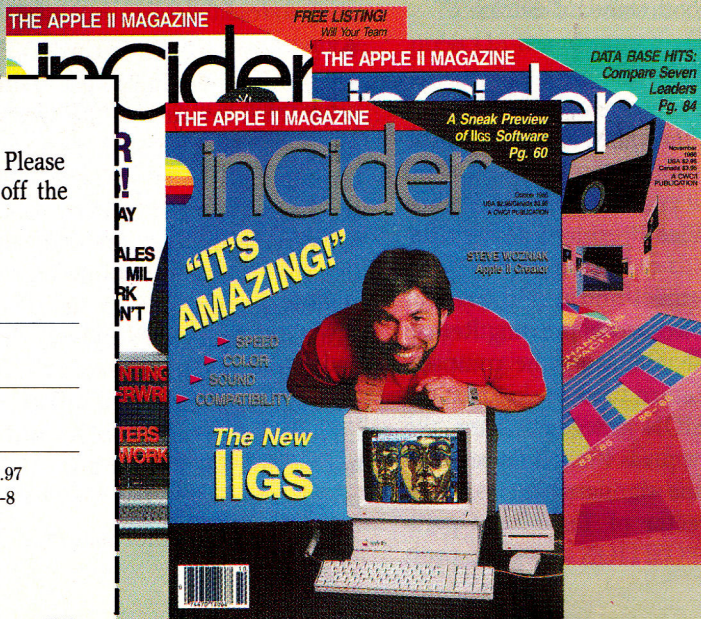
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CATEGORY	RECORD 1	RECORD 2
FIRST MI:	William C.	Lois
LAST NAME:	Carter	Maiwald
TITLE:	Vice President	Personnel Director
COMPANY NAME:	Norden Technologies	Atlantic Communications
DIVISION:		Telephone Systems Division
STREET:	21 Maxwell Road	457 Route 114
CITY/ST/ZIP:	Whitman NY 11753	Greenville NY 11740
COURTESY:	Mr.	Ms.
NEWSPAPER:	Newsday	Newsday
APPEARED:	July 10, 1988	July 10, 1988
POSITION:	Director of Technical Operations	Vice President, Communications
SPARE:		
SPARE:		
SPARE:		
CATEGORY	RECORD 3	RECORD 4
FIRST MI:		
LAST NAME:		
TITLE:	Professional Staffing	
COMPANY NAME:	P.O. Box 228, Dept. 10A	Newsday Box 5678
DIVISION:		
STREET:	79 Hawthorne Boulevard	
CITY/ST/ZIP:	New York NY 10021	Melville NY 11747
COURTESY:	Mr. or Ms.	Mr. or Ms.
NEWSPAPER:	The Wall Street Journal	Newsday
APPEARED:	July 10, 1988	July 13, 1988
POSITION:	Field Service Director	Telecommunications Manager
SPARE:		
SPARE:		
SPARE:		
CATEGORY	RECORD 5	RECORD 6
FIRST MI:	Brian	Karen E.
LAST NAME:	Bostwick	Spolberg
TITLE:	Placement Manager	
COMPANY NAME:	Commac Communications Corp.	Hannaman & Co.
DIVISION:	Employment Section	
STREET:	788 Seldon Street	540 West 58th Street
CITY/ST/ZIP:	New York NY 11009	New York NY 10101
COURTESY:	Mr.	Dr.
NEWSPAPER:	The New York Times	The Wall Street Journal
APPEARED:	July 13, 1988	July 13, 1988
POSITION:	Director, Information Systems	Director of Communications
SPARE:		
SPARE:		
SPARE:		

Figure 1. Records 1–6 in prospective-employers database.

cursor to the NEWSPAPER category. Press OA-V to bring up the Set Standard Values screen. Type **Newsday** and hit Return. Type **July 10, 1988** and hit Return again. Press Escape to return to Record 1, which now contains both standard entries.

### FILLING RECORD 1

Now fill the other categories. Press the up-arrow key ten times to return to the FIRST MI category. Type **William C.** and press Return. Type **Carter** and hit Return again. Type **Vice President** and hit Return again.

Refer to **Figure 1** and type the rest of the entries in Record 1, pressing Return after each one. Following the company name, press Return twice to skip past the empty DIVISION category. After the courtesy entry, press Return three times to skip past the standard entries. After you type **Director of Technical Operations** in the POSITION category, press

Return, then OA-down arrow to move past the spares and bring up Record 2.

### FILLING RECORDS 2–6

Before filling Records 2–6, take a few moments to read the following instructions:

- The newspaper in Records 3, 5, and 6 isn't *Newsday*. When you get to this entry, press OA-E to switch to the overtype cursor (a blinking rectangle) and overtype the standard entry with the newspaper shown in **Figure 1**. In Records 4, 5, and 6, overtype the 0 in the date with 3, so that the date becomes July 13, 1988.
- Press Return enough times to move past blank categories. When you get to the spares, press Return after typing the position, then OA-down arrow to bring up the next record. Since Record 6 is the last record, hit Return after typing the position and leave the cursor there.

Now enter the information in Records

2–6. When you've finished, the cursor should be in the first SPARE category in Record 6. Press OA-S to store the database on disk.

## CHANGING THE LAYOUT OF THE MULTIPLE-RECORD SCREEN

Now press OA-Z, then OA-I to see all records in multiple-record layout. AppleWorks displays the first five categories, but some entries (titles and company names) are truncated and others (mr/ms, first names, and last names) have too much room.

Adjust column widths to display long entries completely. Press OA-L to bring up the Change Record Layout screen. The cursor is in the FIRST MI category. Reduce the width by pressing OA-left arrow (3 times). Press the right-arrow key to move the cursor to each of the following categories and adjust the width the same way:

LAST NAME	press OA-left arrow (3 times)
TITLE	press OA-right arrow (8 times)
COMPANY NAME	press OA-right arrow (13 times)

Now press Escape. AppleWorks asks which way to move the cursor when you press Return. The standard *Down* is fine, so hit Return. The Review/Add/Change screen returns with the categories nicely spaced.

## CREATING A LABELS REPORT FORMAT

Now create a labels format, so that you can print every entry in every record in this database, as shown in **Figure 2** (first page of a two-page printout). Press OA-P to start the Print command. Type 3 to select the labels format, and press Return. Type **LABELS LIST** and hit Return again. AppleWorks brings up the Report Format screen with a list of category names.

Some entries tend to be ambiguous, so have AppleWorks print a category name before each one. Your cursor is on FIRST MI. Press OA-V. AppleWorks places *William C.*, the FIRST MI entry in the first record, next to the category name. This says



```

File: EMPLOYERS
Report: LABELS LIST

FIRST MI: William C.
LAST NAME: Carter
TITLE: Vice President
COMPANY NAME: Norden Technologies
DIVISION:
STREET: 21 Maxwell Road
CITY/ST/ZIP: Whitman NY 11753
COURTESY: Mr.
NEWSPAPER: Newsday
APPEARED: July 10, 1988
POSITION: Director of Technical Operations
SPARE:
SPARE:
SPARE:

FIRST MI: Lois
LAST NAME: Maiwald
TITLE: Personnel Director
COMPANY NAME: Atlantic Communications
DIVISION: Telephone Systems Division
STREET: 457 Route 114
CITY/ST/ZIP: Greenville NY 11740
COURTESY: Ms.
NEWSPAPER: Newsday
APPEARED: July 10, 1988
POSITION: Vice President, Communications
SPARE:
SPARE:
SPARE:

FIRST MI:
LAST NAME:
TITLE: Professional Staffing
COMPANY NAME: P.O. Box 228, Dept. 10A
DIVISION:
STREET: 79 Hawthorne Boulevard
CITY/ST/ZIP: New York NY 10021
COURTESY: Mr. or Ms.
NEWSPAPER: The Wall Street Journal
APPEARED: July 10, 1988
POSITION: Field Service Director
SPARE:
SPARE:
SPARE:

FIRST MI:
LAST NAME:
TITLE:
COMPANY NAME: Newsday Box 5678
DIVISION:
STREET:
CITY/ST/ZIP: Melville NY 11747
COURTESY: Mr. or Ms.
NEWSPAPER: Newsday
APPEARED: July 13, 1988
POSITION: Telecommunications Manager
SPARE:
SPARE:
SPARE:

```

*Figure 2. First four records printed in labels layout with category names.*

that AppleWorks will print the category name.

Press Return to move the cursor to the next category, and press OA-V again. Now AppleWorks displays *Carter*, the LAST NAME entry in the first record.

Continue moving down the category list and pressing OA-V, then Return, to produce entries on screen. Where there's no entry in a category (DIVISION and three spares), AppleWorks shows only a colon. When you've finished, the cursor should be on the S in the last SPARE category.

To separate each record from the next during printing, press Return to insert a blank line. AppleWorks now displays *Each record will print 15 lines.*

## VIEWING THE REPORT ON SCREEN

You can get an idea of what this report will look like on paper by displaying it on screen: Press OA-P, then type **2** and

```

File: EMPLOYERS                                REPORT FORMAT                                Escape: Report Menu
Report: LABELS LIST
Selection: POSITION contains TECHNICAL OPERATIONS

=====
FIRST MI: William C.
LAST NAME: Carter
TITLE: Vice President
COMPANY NAME: Norden Technologies
DIVISION:
STREET: 21 Maxwell Road
CITY/ST/ZIP: Whitman NY 11753
COURTESY: Mr.
NEWSPAPER: Newsday
APPEARED: July 10, 1988
POSITION: Director of Technical Operations
SPARE:
SPARE:
SPARE:

-----Each record will print 15 lines-----
Use options shown on Help Screen                                @-? for Help

```

*Figure 3. Selected record in Report Format screen.*

hit Return. Type today's date and hit Return again. The first record appears. Hit Return again, and you can see the second record. Scan the other records the same way. After the last record, AppleWorks returns you to the Report Format screen.

Now print the report. AppleWorks' standard print settings are fine, so all you need to do is turn on your printer. Type OA-P to start the Print command. Type a printer number and press Return. Hit Return twice to confirm the date and one copy. And here's the two-page labels report with the first page looking like the one in **Figure 2**.

Your résumé impressed the company seeking a Director of Technical Operations, and you have an appointment for an interview. Now you want to refresh your memory on the original ad. You can do this quickly by having AppleWorks search for and display the record.

You're still in the Report Format screen. Press OA-R, and AppleWorks brings up the Select Records screen with a list of categories. You want to search for the position of Director of Technical Operations, so type **11** and hit Return.

The screen now shows 12 selection criteria, with the highlight on *equals*. When you choose *equals*, AppleWorks expects an exact match of information. Equals isn't what you want in this instance because in the next step, AppleWorks asks for a comparison criterion (the searched-for entry). You can type only 20 characters worth of comparison criteria, and **Director of Technical Operations** is far longer than that. If you type only part of the title, such as **Director** or **Technical**

**Operations**, AppleWorks won't find the record because the comparison criterion won't match (or equal) any entry in the POSITION category.

The simple solution is to use *contains* instead. Type **7** and hit Return. Type **Technical Operations** (the comparison information) and press Return again. Comparison information can be any sequence of characters, even **Tec** or **Tech** if you're sure that will zero in on the proper record.

The Selection line at the top left of the screen shows *POSITION contains TECHNICAL OPERATIONS*. AppleWorks now brings up connectors so that you can narrow the selection further. Since you have no more comparison information, press Escape.

Instantly, AppleWorks displays Record 1. You can scan this record on screen as well as print it. Be sure your printer is on. Now press OA-H. Your result should match the one in **Figure 3**.

To return the selection to all records, press OA-R and type **Y**. That's all there is to it. Press OA-S to store the database on disk, which also returns the records in multiple-record layout.

Next month, when you compose the cover letter and merge it with these records, you'll want everything exactly as is, so resist the temptation to change anything. You can, of course, duplicate this database by giving it another name (OA-N) and experimenting with that file. ■

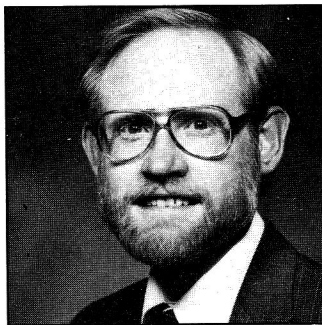
---

*Write to Ruth Witkin at 5 Patricia Street, Plainview, NY 11803. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*



## Function Grapher II

*Add the appropriate equations to May's program listing, and your Apple can graph any math function.*



by Dan Bishop

Shapes and sizes—an elementary concept, but one that computer scientists grapple with often. May's column ("Hi-Res Graphing Techniques," p. 94) on math functions left you dangling with a high-resolution-graphics image of a lopsided half circle. May's program listing, Function Grapher, handles simple concepts such as sines and cosines, but falls disappointingly short in applying the equation for a circle:  $X^2 + Y^2 = RD^2$ , where RD is the desired radius.

This month's **Program listing**, Function Grapher II, improves on our first attempt in several significant ways. Though it's slightly more complicated, it's also a much more versatile program. Use Function Grapher II to construct graphs of circles and ovals, as well as many other functions, to your heart's content.

### A TALE OF FOUR FUNCTIONS

By definition, a function can have only a single Y-value for every X-value presented. When your Apple calculates and plots points from the equation below, only the upper half of the circle appears on screen:

$$Y = \text{SQR}(RD * RD - X * X)$$

To plot the lower half, you must include a second plotting routine for the equation:

$$Y = -\text{SQR}(RD * RD - X * X)$$

Although these two functions plot a figure that appears more like a football than a circle, at least the figure is complete.

There's still a problem, however. For every X-value, the program plots two Y-values. The screen displays the circle's top and bottom as solid, curving lines. But the left and right edges consist of widely spaced dots, because the Y-values are changing much faster than the X-values. Y-values corresponding to two adjacent X-values will be separated by a significant amount of space.

One approach to closing these gaps relies on the symmetry of the circle. You can solve the equation for a circle in terms of X, yielding the following two additional equations:

$$X = \text{SQR}(RD * RD - Y * Y)$$

$$X = -\text{SQR}(RD * RD - Y * Y)$$

When you add these two equations to the program, you're forcing your Apple to calculate and plot two X values for every Y value in the graph. In effect, you're drawing the circle twice, but the result is a more completely filled curved line.

Lines 500-585 contain these calculations and the corresponding plotting, using two loops—one for the Y-values and one for the X-values. In lines 510-540, the variable X1 takes every possible value for the X-positions (0-279), while the program calculates two Y-values, Y1 and Y2. Function Grapher II then plots X1,Y1 and X1,Y2 on screen. Similarly, in lines 550-580, the variable Y1 takes every possible value for the Y-positions (0-159), while the program calculates two X-values, X1 and X2. Then it plots X1,Y1 and X2,Y2.

The limits on FOR loops are XZ to XX and YZ to YY, the corresponding minimum and maximum data values for X and Y that will fit on screen, based on the origin's location and the values for X-max and Y-max you enter at the start of the program. Step values correspond to changes in X and Y for each pixel position on the graph.

### SAFETY TESTING

As you write a program, no matter how simple, you should always keep asking yourself, "Yes, but what if. . .?" Try to catch any errors that could crash the program or make it perform improperly. In most cases, a simple IF command can handle the situation.

In lines 515 and 555, an IF test keeps your Apple from attempting to perform a



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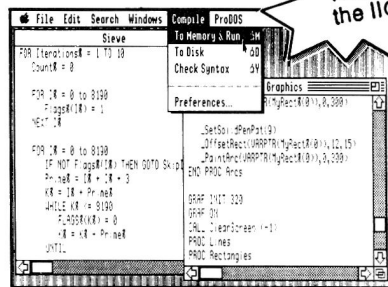
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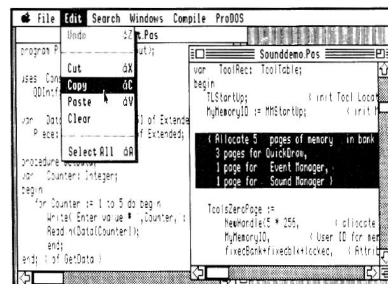
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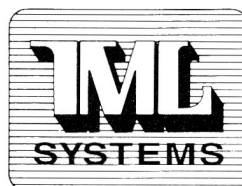
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square root on a negative number. The program first sets Y or X to zero, so they'll appear to fall on the axes (and be invisible) if you don't calculate the square roots. The listing then carries out the square-root calculation only if the arguments are positive or zero, thus avoiding the program crash that would result from taking the square root of a negative number.

Another common trap to avoid when working with graphics is attempting to HPlot a point that's off screen. This also makes the program crash with an "illegal quantity" error. Note that lines 530, 535, 570, and 575 all test the X1, X2, Y1, and Y2 values of points before plotting them. This step makes sure the values lie within the ranges of the screen display.

## INTERACTIVE INPUT

Function Grapher II includes a sub-routine (lines 100-170) that allows interactive user input to locate the position of the graph's origin on screen (XO,YO). It also allows keyboard input of the maximum X and Y values (XM and YM) you'll plot. These four values control the function's appearance on screen.

The values you enter for maximum X and Y determine the scale of the graph by specifying how you'll divide the positive-X and positive-Y axes on the graph. For example, if you place the origin in the center of your screen and enter +2 for both XM and YM, your circle, with a radius of 1, will occupy half the screen.

On the other hand, if you enter XM as +2 and YM as +4, with the origin still in the center of the screen, your circle will be flattened to an oval with height equal to half the width. You can achieve a similar effect by relocating the origin. Keeping XM and YM at +2, but moving the origin to XO = 140, YO = 40 will produce the same oval, since you've compressed the positive Y-axis to half its former length.

## ASPECT RATIO

Two effects work together to cause distortion of the images on screen. First, your screen is wider than it is high. If your screen measures 280 pixels wide by 160 pixels high, each one-pixel change

*Program listing. Function Grapher II graphs a circle centered about the graph's origin. With slight modifications, you can graph many different functions, singly or in combination.*

```

1  REM      FUNCTION GRAPHER II  [1620]
2  REM      APPLESOFT ADVISER, 6/88  [1745]
3  REM      BY DAN BISHOP  [1128]
4  REM      COPYRIGHT 1988, INCIDER  [1779]
5  REM      *****  [1097]
6  REM      [184]
10 HIMEM: 8192  [385]
14 REM      CALC. ASPECT RATIO ADJ  [1679]
15 GOSUB 100: REM      GET USER INPUT  [1611]
20 XA = (160 / 280) * 20 / 17  [1577]
25 XN = (280 - XO) / XM:YN = YO / YM: REM      SET NORMALI
    ZATION FACTORS  [4437]
30 GOSUB 200: REM      SET UP GRAPHICS AND DRAW COORDINAT
    E AXES  [3368]
35 GOSUB 500: REM      PLOT FUNCTION  [1593]
40 GOSUB 600: REM      PRINT TEXT  [1388]
45 INPUT X$: TEXT : GOTO 15  [827]
95 REM      [273]
96 REM      *****  [1356]
97 REM      USER INPUT ROUTINES  [1755]
98 REM      *****  [1358]
99 REM      [277]
100 HOME  [251]
105 PRINT "FUNCTION GRAPHER II - JUNE (88) INCIDER"  [2886]
110 PRINT "=====":
    PRINT  [3048]
115 PRINT "ENTER SCREEN LOCATION OF GRAPH ORIGIN  (O
    R ZERO TO END):"  [4125]
120 INPUT "      X (2 TO 277): ";XO: IF XO = 0 THEN END
    [2412]
125 INPUT "      Y (2 TO 157): ";YO  [1438]
130 IF XO > 277 OR XO < 2 OR YO > 157 OR YO < 0 THEN
    GOTO 100  [3350]
135 PRINT : PRINT "ENTER MAX. POSITIVE X,Y TO BE PLOT
    TED:"  [3227]
140 INPUT "      X-MAX: ";XM  [1177]
145 INPUT "      Y-MAX: ";YM  [1184]
150 IF XM > 0 AND YM > 0 THEN GOTO 160  [1918]
155 PRINT : PRINT "BOTH VALUES MUST BE POSITIVE! PRIN
    T:GOTO 135  [3647]
160 PRINT : PRINT "ENTER TITLE FOR GRAPH:"  [2181]
165 INPUT T$  [417]
170 RETURN  [347]
195 REM      [373]
196 REM      *****  [1246]
197 REM      HI-RES PG.1 GRAPHICS  [1734]
198 REM      SET-UP.  [900]
199 REM      *****  [1249]
200 HGR  [345]
205 HCOLOR= 3:N = 0  [794]
210 HPlot XO,0 TO XO,159: REM      Y-AXIS  [1890]
215 HPlot 0,YO TO 279,YO: REM      X-AXIS  [1899]
220 XI = XM / 10:YI = YM / 10: REM      HASH MARK INCREMEN
    TS  [3631]
230 FOR I = XO TO 279 STEP XI * XN * XA  [2245]
235 HPlot I,YO - 2 TO I,YO + 2:N = N + 1  [2317]
240 NEXT I:XX = N * XI:N = 0  [1718]
245 FOR I = XO TO 0 STEP - XI * XN * XA  [2347]
250 HPlot I,YO - 2 TO I,YO + 2:N = N + 1  [2332]
255 NEXT I:XZ = - N * XI:N = 0  [1936]
265 FOR I = YO TO 159 STEP YI * YN  [1670]
270 HPlot XO - 2,I TO XO + 2,I:N = N + 1  [2095]
275 NEXT I:YZ = - N * YI:N = 0  [1703]
280 FOR I = YO TO 0 STEP - YI * YN  [1775]
285 HPlot XO - 2,I TO XO + 2,I:N = N + 1  [2110]
290 NEXT I:YY = N * YI  [1124]
295 HPlot 0,158 TO 279,158 TO 279,159 TO 0,159: RETURN
    [2231]
495 REM      [418]
496 REM      *****  [1375]

```

*Listing continued.*



Listing continued.

```

497 REM LOOP TO PLOT FUNCTIONS [2041]
498 REM ***** [1377]
499 REM [422]
500 RD = 1 [652]
510 FOR X = XZ TO XX STEP ((XX - XZ) / 280) [2500]
515 Y = 0: IF (RD * RD - X * X) >= 0 THEN Y = SQR (
RD * RD - X * X) [4079]
520 X1 = X * XN * XA + XO: PRINT "PLOTING X = "X [2803]
525 Y1 = YO - YN * Y:Y2 = YO + YN * Y [2419]
530 IF X1 > 0 AND X1 < 280 AND Y1 > 0 AND Y1 < 160 THEN
HPLLOT X1,Y1 [3253]
535 IF X1 > 0 AND X1 < 280 AND Y2 > 0 AND Y2 < 160 THEN
HPLLOT X1,Y2 [3261]
540 NEXT X [248]
550 FOR Y = YZ TO YY STEP ((YY - YZ) / 160) [2289]
555 X = 0: IF (RD * RD - Y * Y) >= 0 THEN X = SQR (
RD * RD - Y * Y) [4121]
560 Y1 = YO - YN * YN: PRINT "PLOTING Y = "Y [2495]
565 X1 = X * XN * XA + XO:X2 = XO - X * XN * XA [3161]
570 IF X1 > 0 AND X1 < 280 AND Y1 > 0 AND Y1 < 160 THEN
HPLLOT X1,Y1 [3293]
575 IF X2 > 0 AND X2 < 280 AND Y1 > 0 AND Y1 < 160 THEN
HPLLOT X2,Y1 [3301]
580 NEXT Y [289]
585 RETURN [252]
595 REM [263]
596 REM ***** [1136]
597 REM PRINT TEXT MESSAGE [1632]
598 REM ***** [1138]
599 REM [267]
600 HOME: VTAB 21 [560]
605 PRINT TS [401]
610 PRINT "EACH X-UNIT IS "XI [1493]
615 PRINT "EACH Y-UNIT IS "YI [1500]
620 PRINT " **** PRESS <RETURN> TO END **** "; [2424]
625 RETURN [292]

```

End of listing.

in the horizontal (X) direction will actually cover less distance on your graph than a one-pixel change in the vertical (Y) direction. Consequently, graphing a circle will produce an oval, with the shorter axis in the Y direction.

To combat this distortion, you need to reduce all X-values by a set amount equal to the height-to-width ratio, or 160/280. The program achieves this by multiplying all X values by this factor before applying the offset, XO, and plotting the point.

The second distorting effect is similar. Look closely at a single pixel on your screen and you'll note that it's not perfectly round; it's wider than it is high. If you plot a ten-pixel square on your screen, you'll see that horizontally adjacent pixels join each other, while there's a space between vertically adjacent pixels. The resulting figure will be a rectangle rather than a square. The height-to-width ratio of the rectangle is 20/17. To counteract this problem, the program

must multiply every X value by (20/17) before plotting it.

Line 20 introduces XA, the X-aspect ratio factor:

$$XA = (160/280) * (20/17)$$

The program uses this value in the plotting routine (lines 520 and 565) every time it calculates an X value. In addition to multiplying the X-values by XN (the normalization factor discussed in last month's column), you must multiply them by XA. Then add the X-offset, XO, last, yielding the screen X-value you'll be plotting.

Function Grapher II also uses XA in a routine to draw axes and hash marks (lines 200-295). Because XA compresses the figure along the X-axis, your displayed graph's axes will extend slightly farther to the right than the maximum-X value, which you enter when running the program, has specified.

You must also account for aspect ratio in programs that print graphics from

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screen images. Rarely will the aspect ratio of a video screen be the same as that of a graphics printer. Without adjusting for these differences, the printed image will be a distorted version of the screen image. You can apply the concepts discussed above in exactly the same way to printed output.

## SETTING UP AXES

The subroutine for drawing axes and hash marks is also a little more complex than the one you used last month. Function Grapher II calculates two values, XI and YI, as the X-increment and the Y-increment. These are one-tenth the values you entered as maximum X and Y.

The program then uses four loops to draw the hash marks radiating from the origin in four directions. At the same time, it tabulates four new values from N, the number of hash marks drawn.

These values are YZ, YY, XZ, and XX, which correspond to the minimum Y and X (YZ and XZ) and the maximum Y and X (YY and XX) that could possibly fit on the graph. These are the YZ,YY and XZ,XX values the program uses in loops to calculate and plot the individual points of the function.

## OTHER FUNCTIONS

You can easily modify the **Program listing** to handle other common functions, including SIN, COS, TAN, and so on. With error-trapping routines, you don't need to worry about adding program lines to limit your functions to special cases or ranges. For example, to plot a TAN function, add the following lines:

```
514 Y = TAN (X*3.14159) : GOTO 520
531 GOTO 540
541 RETURN
```

This leaves your circle equations in place should you want to use them later. The GOTOs simply jump over them.

Try using the following equations in place of the TAN function in line 514, and run the program with each:

```
514 Y = 0.5 * X + 1:GOTO 520
514 Y = ABS(X):GOTO 520
514 Y = SIN(X*3.14159):GOTO 520
514 Y = LOG(X):GOTO 520
514 Y = EXP(X):GOTO 520
```

In each case, vary your origin placement and X-max,Y-max values to see the effects such changes produce on the image.

You can also plot several functions at once. Math teachers like to assign such problems and ask students to determine where the functions intersect. To do this, use the same technique the original program uses for the circle.

For example, say you want to plot a straight line,  $Y = 0.5 * X + 1$ , and a circle of radius 1 centered on the origin. First, be sure you've removed lines 514, 531, and 541. Next add lines 526 and 527:

```
526 Y = 0.5 * X + 1: Y3 = YO - YN
    * Y
527 IF X1 > 0 AND X1 < 280 AND Y3
    > 0 AND Y3 < 160 THEN HPlot
    X1,Y3
```

The circle-drawing program as presented here is slow. After all, it's plotting four separate functions. To handle a variety of functions, it checks each X position between the left and right edges of the graph, and each Y position between the top and bottom, to see whether there's a point to plot. If your figure occupies only a small part of the screen, you may have to wait a while for the points to appear.

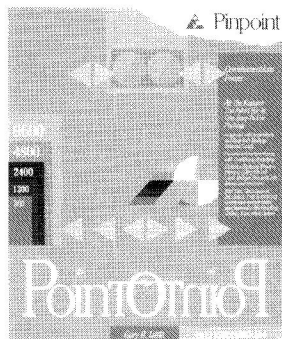
Faster circle-drawing algorithms exist, but their relationship to the circle's actual equation is a little more difficult to follow—ask any computer scientist. These professionals spend a great deal of time trying to invent faster, more efficient algorithms for the myriad operations computers must perform. ■

*Write to Dan Bishop at 4124 Beaver Creek Drive, Fort Collins, CO 80526.*

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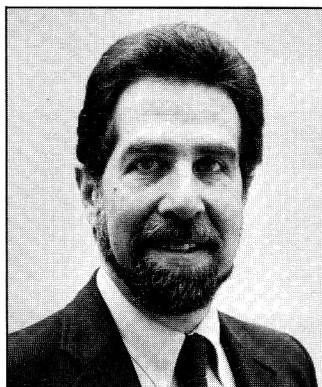
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## Summer Reading

Hardware, software, services, philosophies, technologies—if you're a telecommunicator looking for advice, assistance, or a discussion of recent developments in any of these areas, check out inCider's list of references.



by Tom Sherman

*A man was arrested for attempting to extort funds from ignorant and superstitious people by exhibiting a device he says will convey the human voice any distance over metallic wires. He calls the instrument a telephone. Well-informed people confirm that it is impossible to transmit voice over wires, and if it were possible to do so, the thing would have no practical value.*

—a New York newspaper, 1865  
—*Telecommunications Management Planning*,  
by Robert K. Heldman

Everyone takes the telephone for granted, but for many computer users the same mystery that surrounded that convenient, easy-to-use device more than a century ago shrouds telecommunications today.

To help solve the enigma of telecommunications—on-line services, electronic mail, bulletin-board systems, and so on—experts have written hundreds of books, including practical guides as well as philosophical discussions of the benefits of on-line communications today and tomorrow. In fact, the telecommunications picture is changing so rapidly that it's difficult for even the newest releases to keep up with the latest electronic pathways. To assist both novice and skilled telecommunicators, here's a guide to about two dozen current references.

### ATLASES OF MAJOR TERRITORIES

For most of us, the major on-line territories are databases, electronic mailboxes, bulletin-board systems (BBSs), and information services. "Atlases" of computer communications in these areas cover many subjects: modems and communications software, various on-line systems, and lists of additional resources. These books are ideal for beginners.

Mike Cane's *The Computer Phone Book*, for example, comes in two volumes: *Guide to Using On-Line Systems* and *Directory of On-Line Systems*. This set provides detailed information about particular BBSs, but

discusses few major services and is weaker in its discussion of technology than some other books on the market. The *Directory* includes phone numbers, access information, and the author's comments about 30 national systems (such as CompuServe), 15 systems providing information of local interest, and more than 600 BBSs around the country.

Alfred Glossbrenner's *The Complete Handbook of Personal Computer Communications: Everything You Need to Go On Line with the World* has taught thousands of anxious beginners how to make connections. Like Glossbrenner's other books, the *Handbook* is enthusiastic, easy to read, and crammed with useful, intriguing, money-saving tips.

The most up-to-date book of this group is Michael Banks' *Modem Book*, scheduled for release this summer. Judging from a preview copy, I'd say it presents a clear explanation of technical details such as data transmission and modem features.

### EVERYONE USES DATABASES

Even if you've never been on line, you're familiar with at least one database—the telephone directory. If you need long-distance phone numbers often, you probably have quite a stack of directories. Imagine the savings in time and space if you could use your Apple II to search for those phone numbers. When you consider the libraries of on-line data you might search, you'll begin to understand the extraordinary growth in publicly accessible electronic databases—from a few dozen in 1973 to more than 3000 today. Although simplified searches are now possible, the cost and complexity of on-line retrieval have spawned many books on databases.

A good place to start is *On-Line Searching: A Primer*. This short introduction describes general search strategies and lists important resources. A more extensive book, *Inside Information: Business and Professional, Electronic Libraries, Databases*



## Product Information

*Alfred Glossbrenner's Master Guide to CompuServe*, 1987, \$19.95

Alfred Glossbrenner

*Delphi: The Official Guide*, 1987, \$21.95

Michael A. Banks and General Videotex Corporation

*The Modem Book*, 1988, \$21.95

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*The Complete Handbook of Personal Computer Communications: Everything You Need to Go On Line with the World*, 1985, \$14.95

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*How to Look It Up On Line: Get the Information Edge with Your Personal Computer*, 1987, \$14.95

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*The Computer Phone Book: Directory of On-Line Systems*, 1986, \$18.95

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*The Computer Phone Book: Guide to Using On-Line Systems*, 1986, \$14.95

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*Electronic Mail: A Revolution in Business Communications*, 1982, \$22.95

Stephen Connell and Ian A. Galbraith

*Executive's Guide to On-Line*

*Information Services*, 1984, \$24.95

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*Networking: An Electronic-Mail Handbook*

Thomas B. Cross & Marjorie B. Raizman

Scott, Foresman, & Company

1900 East Lake Avenue

Glenview, IL 60025

(312) 729-3000

1986

\$18.95

Reader Service Number 342

*On-Line Searching: A Primer*

Carol H. Fenichel and

Thomas H. Hogan

Learned Information, Inc.

143 Old Marlton Pike

Medford, NJ 08055

(609) 654-6266

1984

\$14.95

Reader Service Number 343

*Searching DIALOG:*

*The Complete Guide*

DIALOG Information Services

3460 Hillview Avenue

Palo Alto, CA 94034

(415) 858-2700

(800) 334-2564

1987

\$25

Reader Service Number 344

*Telecommunications Networks:*

*A Technical Introduction*

Howard W. Sams & Company

4300 West 62nd Street

Indianapolis, IN 46268

(317) 298-5565

(800) 428-7267

1987

\$29.95

Reader Service Number 345

*Understanding Modern*

*Telecommunications*

Herbert S. Dordick

McGraw-Hill Publishing

Princeton Road

Hightstown, NJ 08520

(609) 426-5000

1986

\$42.95

Reader Service Number 346



and *Messaging*, considers specific kinds of database information available and discusses electronic mail.

As you might imagine, the *Executive's Guide to On-Line Information Services* is more narrowly focused, comparing and offering detailed looks at the major vendors. For an easy-to-understand overview, the most complete book is Alfred Glossbrenner's *How to Look It Up On Line*, which gives you a good sense of how and where to find different kinds of information.

Fewer books are currently available about electronic mail (e-mail) and computerized BBSs. It's hard to take a picture of something that won't stand still. Designed to help managers evaluate improvements in communication, *Electronic Mail: A Revolution in Business Communications* (published in 1982) states, "Because the complexion of the industry changes almost daily, it is impossible to

give a fully up-to-date picture of those changes."

*Networking: An Electronic Mail Handbook* does provide a clear, if generalized, view of the field. Not limited to e-mail from microcomputers, it also introduces the basics of facsimile, telex, videotex, video, and the various networks that support them.

If you're thinking about setting up your own BBS, take a look at the *Essential Guide to Bulletin-Board Systems*. It includes some basic details that are likely to be old knowledge to prospective system operators (sysops), but it will help you select BBS programs and estimate the cost of managing a board.

To develop more detailed search strategies, you'll want to use the manuals provided by the various vendors. *Searching DIALOG: The Complete Guide*, for example, helps both beginners and experts

navigate the world's largest collection of on-line databases.

In the case of Delphi, the best explanatory book is the manual—*Delphi: The Official Guide*. Beginning with the basics of connection and commands, author Michael Banks discusses the system's major features—business and finance, real-time conferencing, mail, entertainment, groups and clubs, publications, shopping, sports, and other areas. The book concludes with tips on how to get the most information for the least effort and cost. Though not lively reading, it's a straightforward presentation of system features, well illustrated with helpful examples.

Charles Bowen and David Peyton are the authors of three books—*How to Get the Most Out of The Source*, *How to Get the Most Out of Dow Jones News/Retrieval*, and *How to Get the Most Out of CompuServe*. They've perfected a friendly style as they tour each

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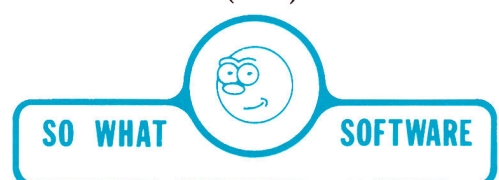
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system, taking beginners step-by-step through the electronic passageways.

*Alfred Glossbrenner's Master Guide to CompuServe* emphasizes the system's professional, business, news, and communications areas, complementing Bowen and Peyton's focus on games, forums, and real-time conferencing (often called *CB* or *chat*). Glossbrenner includes information of special use to Apple II owners—in this case, details for ordering public-domain telecommunications software and utilities.

## HOW DO WE GET THERE?

Many people use the computer as they would a car, without ever caring to look under the hood. But if you're curious about how those little electronic bits move from your Apple II to other computers, here are a few suggestions. First, P.H. Smale's *Introduction to Telecommunications Systems* helps you understand the basics of radio, television, radar, and the

telephone, as well as the networks that connect them.

You'll find similar introductory information in *Understanding Modern Telecommunications*, by Herbert S. Dordick, and in *Telecommunications Networks: A Technical Introduction*, by R.J. Murphy. Dordick's book, though less technical, treats the semiconductor chip, the satellite, the telephone, broadcasting, and computer technology in the context of "emerging information societies." Carefully selected lists of related books make Dordick's text especially useful. Murphy focuses on current and future telecommunications networks, with special emphasis on planning and management. Diagrams and illustrations make these topics accessible.

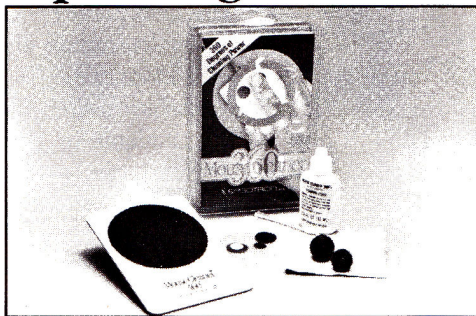
## MAKE THE CONNECTION

If you're not already on line, these books may persuade you that making the connection will, as author Glossbrenner

says, "place an entire range of new and innovative services at your fingertips, help you work smarter, faster, and more productively, and spark the creativity lying dormant in your soul." If you're already a member of the network nation, they'll help you choose productive, entertaining destinations and speed your journey. ■

*Tom Sherman is a communications consultant specializing in computer-related activities. Write to him at 224 South Chester Road, Swarthmore, PA 19081, or contact him on line through GENie (SHERMAN), CompuServe (72010,12), The Source (CPA177), Delphi (Sherm), The WELL (sherman), PeaceNet (tsherman), and PARTI on NWI, Unison, and The Source (Tom Sherman).*

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# NEW PRODUCTS

edited by Pat O'Dell

## Resources

### SPECIAL SUGGESTIONS

*Mindscape Methods for Mastery* is a new reference guide developed by Mindscape to help teachers use the company's software to best advantage in **special-needs classes**. It also offers lesson plans and suggestions for supplementary learning aids. *Mindscape Methods for Mastery* sells for \$19.95. For more information, contact Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667, or circle Reader Service number 361.

### ALL YOU EVER WANTED

The *Programmer's Introduction to the Apple IIgs*, new from Addison-Wesley, was written by the the developers of the GS. Loaded with **advice and suggestions for programmers**, it also includes three versions—65816 assembly language, C, and Pascal—of a sample routine called HodgePodge.

Using HodgePodge as an example, the book demonstrates how to write event-driven programs, how to use the GS Toolbox, and how to write programs that use the DeskTop user interface, among other topics.

Copies of HodgePodge on disk are included with the book. The *Programmer's Introduction to the Apple IIgs* is available for \$32.95 from Addison-Wesley Publishing Company, Route 128, Reading, MA 01867, (617) 944-3700, or (800) 447-2226 (orders only, outside Massachusetts). Circle Reader Service number 362 for more information.

### SHOPPING AROUND

With the help of your computer and Travelshopper, you can book your own **airline flights** now. Travelshopper is offered on the American Home Network, a subscription on-line shopping service. Once you book a flight, you can send the information electronically to any travel agency that subscribes to Travelshopper. Contact PARS Travel Information Systems, P.O. Box 20326, Kansas City, MO 64153, (816) 891-5300, or circle Reader Service number 375 for more information.

### EXCHANGING INFORMATION

You can get new **public-domain** and **shareware software** for the GS from the Public Domain Exchange. The programs available include desk accessories, graphics utilities, songs, artwork, games, fonts, and telecommunications programs. The disks are available for \$9 each, plus \$4 shipping and handling. For more information, contact the Public Domain Exchange, 2074C Walsh Avenue, Santa Clara, CA 95050, (408) 496-0624, or circle Reader Service number 374.

### HEY, GOOD-LOOKIN'

Now that you've got desktop-publishing software, all you need to know is how to use it to its best effect. *Looking Good in Print: A Guide to Basic Design for Desktop Publishing* can teach you the basics of **graphic design**. It doesn't focus on spe-

cific hardware or software—it's simply about how to make your documents look better. (It even includes 14 different "design makeovers.") *Looking Good in Print: A Guide to Basic Design for Desktop Publishing* is available for \$23.95 from Ventana Press, P.O. Box 2468, Chapel Hill, NC 27515, (919) 490-0062. Circle Reader Service number 360 for more information.

## Software

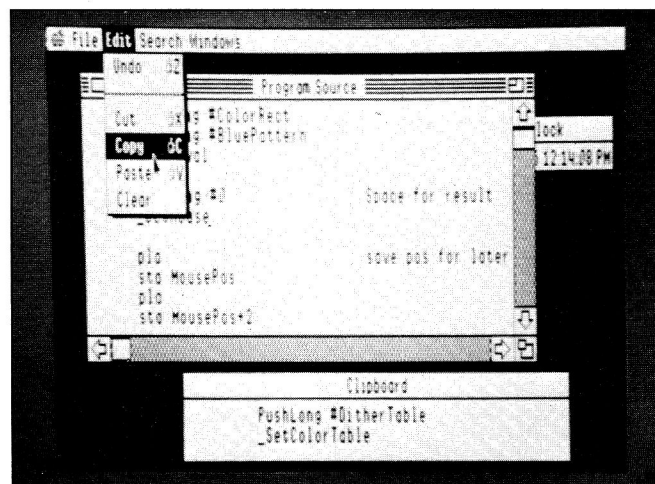
### READ 'EM AND WEEP

Rebus Writer will help your kids have **fun with the English language**. A rebus is a sentence that uses pictures, letters, and numbers instead of words to make a puzzle.

Rebus Writer is designed for students in grades 3–12. Students can create their own puzzles by selecting illustrations on disk or by drawing their own. The program is available for \$49.95 from Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667. For more information, circle Reader Service number 350.

### PLAIN AND FANCY

With Labels, Labels, Labels you can **create fancy labels** with Print Shop graphics, then merge them with AppleWorks database files. In addition to mailing labels, you can produce disk and videotape labels, badges, postcards, and



*How-to for GS programmers from Addison-Wesley.*



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## Hardware

### ALL ABOARD

On-Board is a **memory-expansion card** designed for the Apple IIgs. It can hold up to 4096K (4 megabytes) and can be populated in increments of 1, 2, or 4 megabytes. On-Board doesn't come with any memory; you're responsible for buying and installing the chips. On-Board is compatible with Checkmate Technology's MemorySaver boards, as well as all direct-memory-access devices (such as RAM disks). On-Board is available for \$149.95. Contact On Three, Inc., 4478 Market Street, Suites 701-702, Ventura, CA 93003, (805) 644-3514, or circle Reader Service number 357 for more information.

### PRETTY PICTURES

With the Video-Microcomputer Interface, you can **connect your Apple II to a video-disc player**. By installing more than one board, you can con-

trol several videodisc players with one computer. VMI allows both serial and parallel communication and lets you direct video output to a television set. Machine-code drivers are included with the board. The Video-Microcomputer Interface is available for \$395 from Allen Communications, 140 Lakeside Plaza II, 5225 Wiley Post Way, Salt Lake City, UT 84116, (801) 537-7800. For more information, circle Reader Service number 358.

### GOING MOBILE

The **Mobile Computer Stand** from Wheelit may be a lifesaver if you're living or working in cramped quarters. It rolls on locking casters and features two adjustable shelves—one for the CPU and one for your monitor. The Mobile Computer Stand (model #8400) is available for \$150 from WHEELIT, Inc., P.O. Box 7350, Toledo, OH 43615, (419) 531-4900. Circle Reader Service number 359.

*Product descriptions contained in this section are based on information supplied to us by the respective manufacturers. These announcements are provided solely as a service to our readers and do not constitute endorsement by inCider of any given product.*

price tags by merging Print Shop graphics, fonts, and borders, each of which can print in one of seven colors. The program costs \$39.95 and is designed for the entire Apple family. For more information, contact Big Red Computer Club, 423 Norfolk Avenue, Norfolk, NE 68701, (402) 379-4680, or circle Reader Service number 351.

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### LOGGING ON

Numeric Concepts/Memory Skills, the latest addition to the Captain's Log software series, is designed to help anyone with learning disabilities develop **basic skills**, including memory skills. The package is divided into seven separate programs, each covering a different capability. The seven-program set is available for \$395 from Network Services, 1915 Huguenot Road, Richmond, VA 23235, (804) 379-2253. For more information, circle Reader Service number 356.

### Product Updates

•Optimum Resource now offers **Weekly Reader Lab-Packs** for its popular Weekly Reader Software line. The Lab-Packs consist of five disks and one set of documentation. They're available for \$75 from Optimum Resource, Inc., Station Place, Norfolk, CT 06058, (203) 542-5553.

•Mindscape's **Color Me: The Computer Coloring Kit** has been updated to include more activities. It now comes with two picture disks and all the materials needed to create a coloring book. For more information, contact Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667.

•Now you can buy a ProDOS version of **LogoWriter**. Logo Computer Systems' new edition requires 128K and can run on a network. It's available under a site-licensing agreement from Logo Computer Systems, Inc., 1000 Roche Boulevard, 9th Floor, Vaudreuil, Quebec, Canada J7V 6B3, (514) 455-0870.



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Apple IIgs 3. <input type="checkbox"/>	3. <input type="checkbox"/>
Laser 128 4. <input type="checkbox"/>	4. <input type="checkbox"/>
Apple II+ 5. <input type="checkbox"/>	

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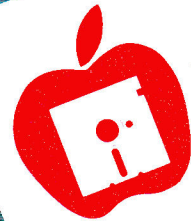
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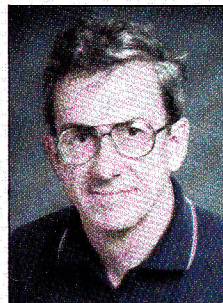
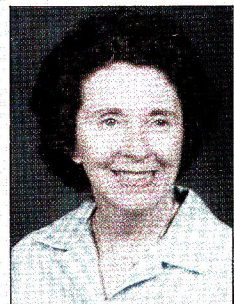
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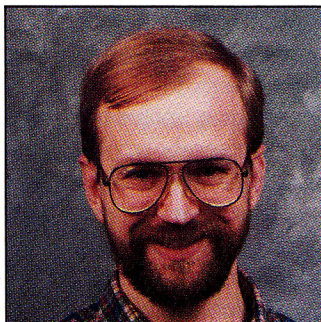
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## The “Wimp” Factor



by Scott Mace

*“Are hint books and saved games a blessing or a curse?”*



*Dondra: A New Beginning, from Spectrum HoloByte, takes you on a quest for a crystal prism; in lively animated graphics you'll find that danger awaits you at every turn.*

**H**ow often do you save your place in a typical fantasy role-playing game? Are you timid, saving at every step, or courageous, saving only when an electrical storm passes directly over your house? You may have to scrutinize your game-saving habits more closely as adventures become more sophisticated.

Saving games wasn't possible when the Apple II was new. It's great to be able to eat dinner, sleep, or resume other activities without having to go back to “start.” Nowadays, any game without a save feature wouldn't stand a chance in the market.

Occasionally a publisher will remind you that there's no such thing as a free lunch, and besides, true courage means no saves, no undos. Saving games and backing up are wimpy moves.

### WHAT'S THE PENALTY?

You may have to pay a price for saving your position. Such is the case with **Dondra: A New Beginning** by Sean Barger (Spectrum HoloByte, 2061 Challenger Drive, Alameda, CA 94501, 415-522-3584, \$39.95; GS version, \$49.95). It's the first game in the new Questmaster series. The adventure begins in the world of Dondra, where you journey to find the Crystal Prism of Heheutotol, a bauble you'll need to defeat the evil Colnar.

Death lurks in every corner—taking the form of poisonous muck or a pair of bug-eyed carnivorous monsters. As you progress you can save up to 26 games—that's the good news. The bad news is that saving affects your overall experience rating negatively. Why is that important? When you finish Dondra, the program writes a small file to disk—your accumulated experience in the sec-

ond Questmaster game, as yet unannounced.

Chalk it up to the gamers' code of honor. As I discussed in my August 1987 column (“Sequels: Complexity and Realism,” p. 97), most sequels aren't for the meek or casual player. As Apple II games grow more complex, the best of them aren't for amateurs. Dondra comes on six disk sides, with a good portion of the software devoted to numerous animated graphics. Yet that's nothing compared to the games we'll see someday on the newly announced Apple CD ROM drive, which can store the equivalent of 3800 5¼-inch Apple disks! (See “Apple Goes Digital,” News Line, June 1988, p. 18.)

### MAPPING YOUR STRATEGY

Imagine Ultima IV set in medieval China, Japan, or Korea. That gives you a pretty good



idea of **Deathlord** by Al Escudero and David Wong (Electronic Arts, P.O. Box 7530, San Mateo, CA 94403, 800-245-4525, 415-571-7171, \$49.95). Building on the often-imitated Ultima map system, Deathlord lets you assemble a party of six characters. You can use the game's pre-set party or create your own troupe, molding a warrior or a wizard out of a choice of eight races and seven attributes, such as strength, intelligence, and power.

In Ultima you control the combat between individual enemies and individual members of your party; in Deathlord, you select only the leader of the party. The combat rolls by quickly, so you'll have to read fast to under-

stand the tides of battle before all is said and done.

With two dungeons, each with 16 levels, and 30 towns, mapping the Deathlord world is just too much work. Even if you did map everything, you still have to deal with "whorls," whirlpool-creating creatures that inhabit the trackless seas you must cross—just one of the seagoing hazards you'll face. Try using the map inside the manual as a general guide, even though the world of Lorn spills over into uncharted realms.

At the start, expect to spend a lot of time amassing experience points before your party is ready to take on a more dangerous journey, com-

plete with 128 different kinds of monsters.

Deathlord's secret doors are absolutely hidden. Other games reveal them through subtle signs, such as a brick askew, but in Deathlord you just have to bump into them. Sometimes you'll issue the same search command three or four times before they reveal themselves. It's tedious.

## PARTNERS

Two recent games, Bruce Hoffman's **Talisman—Challenging the Sands of Time** (Polarware Software, 1055 Paramount Parkway, Suite A, Batavia, IL 60510, 800-323-0884, 312-232-1984, \$19.95) and Dallas Snell's **Ring Quest** (Origin Sys-

tems, Inc., 136 Harvey Road, Building B, Londonderry, NH 03053, 603-644-3360, \$19.95), prove you don't have to be lonely along the way. These games give you a faithful companion.

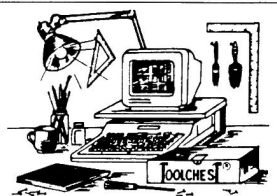
Talisman includes a more specific vocabulary than Dondra, but the game and graphics are slow. Your dim-witted sidekick, Abu, performs all the action-oriented things as you search for the mysterious amulet. The game doesn't have as much animation as Dondra, but objects do appear to move around screens over time.

Talisman is an odd mixture of humor and surprises. Watch out when you take a piece of flint out of the lion's paw, for

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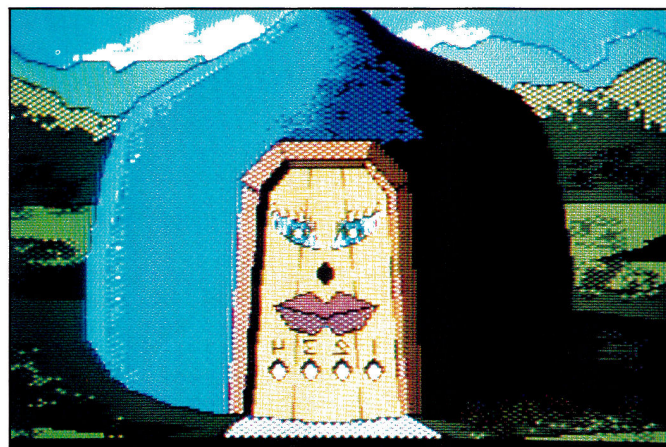
instance—this is no Aesop's Fable.

Ring Quest plays faster because it doesn't use hi-res graphics. Despite that, the pictures are quite impressive. You'll find a lot more game than in the typical graphics adventure, so be prepared for a long stay. As usual in an Origin Systems game, you'll need to make extensive maps.

You can save up to eight games without penalty in Ring Quest. But be warned: This game is definitely for the intermediate to advanced player.

## TO SAVE OR NOT TO SAVE?

Someday we'll see adventures with auto-save features. Also, if



Polarware's *Talisman* offers a number of humorous twists along the way in your search for a mysterious amulet.

manufacturers remove copy protection, the day may come when players pass around saved games regularly.

Like hint books, saved games provoke argument among veteran players. Are they a blessing or a curse? I think they're

both. Without them, players wander around in the dark in today's multidisk games. Hint books give novice gamers hope; saved games keep them sane. But you can't underestimate the wimp factor of these devices. If you're out to experience what the designer had in mind, you're cheating the designer and yourself if you use either one. ■

*Scott Mace is editor and publisher of Microcosm, a monthly newsletter on computer games. Write to him at 6510 Copper Ridge Drive #T-1, Baltimore, MD 21209. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*

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## Free for all



**Open-Apple** is Tom Weishaar's monthly newsletter for knowledgeable Apple II users. It's thin but packed tight with Apple II lore, humor, letters, tips, advice, and solutions to your problems. Compared to other Apple II publications, **Open-Apple** has the highest new-idea-per-issue ratio, the clearest writing, the funniest cartoons, the longest index, the best warranty (all your money back if you're not satisfied), and it takes up the least shelf space.

### II cue #57

When you start up Basic.system from 40-column mode, an inverse U will appear on your screen. This is because Basic.system prints a control-U to turn off 80-columns. If you're already in 40-columns, however, the U shows through. Change the high bit of the control-U and it will be invisible on the 40 column screen.

BLOAD BASIC.SYSTEM,A\$8000.TSYS

POKE 8098,149

BSAVE BASIC.SYSTEM,A\$8000.TSYS

Details on page 4.24 of our April issue.

### From our fan mail:

About the only thing I don't like about **Open-Apple** is that it isn't published daily.

Ed Salners, Silver Spring, Md.

It is rare that a magazine or newsletter is as consistently useful as yours.

Andrew Nelson, Santa Barbara, Calif.

My copy of **Open-Apple: Vol 1** arrived in yesterday's mail. I got no work done at all last night. And I was just browsing.

Richard Wigand, Sioux City, Iowa

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# HINTS/TECHNIQUES

Apple users know there's always an easier way to get the job done. A shortcut here, an elegant twist there—that's what Hints/Techniques is all about. It's an information swap for readers who want to share their programming pointers, DOS tips, hardware secrets, AppleWorks applications, WPL enhancements, and all those other insights that make you go "Aha!" in the night.

## Formatting Revisited

by James King, Ph.D.

If you do a lot of number formatting in BASIC, you'll recognize the following snag in machine-language routines. Say you want to display the numbers below rounded to one decimal place.

BASIC	Formatted
10.06	10.1
10.05	10.1
10.04	10.0
1.06	1.1
1.05	1.0 (should be 1.1)
1.04	1.0
.06	.1
.05	.1
.04	.0

The BASIC routine INT (\$EC23) truncates the number in FAC (floating-point accumulator) \$9D-\$A2, but occasionally has trouble. Try entering the following:

```
JA = 10.05:B = 1.05:F = .05
P INT((A + F) * 10)/10, INT((B + F) * 10)/10
```

BASIC prints 10.1 at the left edge of the screen and 1 at the first tab location to the right.

To solve this problem, avoid using the INT routine. FORMAT, a machine-language program, formats numbers without using INT (\$EC23). Type in Make.FORMAT (see Listing 1) to create the program. Since it's relocatable, you can change its load address by altering line 30. The actual string you want to print is in BUF (\$240 to \$240 + width).

Listing 1. Make.FORMAT.

```
10 REM Make FORMAT by James King [2263]
20 REM Copyright 1988, inCider [2211]
30 FOR I = 768 TO 908: READ N: POKE I,N: NEXT I [1929]
40 TEXT : HOME [386]
50 PRINT "FORMAT in memory: Don't forget to" [3209]
60 PRINT "BSAVE it from A768,L141." [1982]
100 DATA 32,190,222,32,185,246,134,31,133,29 [1989]
110 DATA 133,28,133,30,230,30,32,190,222,32 [1930]
120 DATA 103,221,165,162,72,70,162,198,29,48 [2023]
130 DATA 6,32,57,234,24,144,246,32,160,231 [1918]
140 DATA 32,52,237,160,32,174,0,1,224,49 [1825]
150 DATA 104,144,4,16,2,160,45,132,29,162 [1882]
160 DATA 255,232,189,0,1,240,6,201,46,208 [1896]
170 DATA 246,169,0,157,0,1,164,31,189,0 [1812]
180 DATA 1,153,64,2,136,48,34,198,30,208 [1909]
190 DATA 8,165,28,240,4,169,46,208,238,202 [1994]
200 DATA 16,232,165,30,48,5,232,169,48,208 [2002]
210 DATA 226,169,32,224,255,208,220,165,29,208 [2211]
220 DATA 216,169,64,160,2,32,58,219,32,183 [2022]
230 DATA 0,201,59,240,3,76,251,218,76,210 [1967]
240 DATA 218 [590]
```

Listing 2. Applesoft demonstration program BLOADing format.

```
1 REM FORMAT Demo [1089]
2 REM by James King [1384]
3 REM Copyright 1988, inCider [2194]
5 D$ = CHR$(4) [681]
10 PRINT D$;"BLOAD FORMAT" [1270]
20 FM = 768: HOME: DIM A(13) [1187]
40 DATA 10.06,10.05,10.04,1.06,1.05,1.04,.06,.05,.04,
   0,-.04,-.05,-1.04,-1.05 [3416]
50 FOR J = 0 TO 13: READ A(J): NEXT [1403]
70 PRINT "NORMAL..ROUND..FORMAT..FORMAT..FORMAT": PRINT
   "APLSFT..APLSFT.1 DEC...2 DEC...3 DEC" [5412]
80 VTAB 4: FOR J = 0 TO 13: PRINT A(J): NEXT: REM NO
   RMAL.APLSFT [2953]
100 VTAB 4: FOR J = 0 TO 13: HTAB 9: PRINT INT (( ABS
   (A(J)) + .05) * 10) / 10 * SGN (A(J)): NEXT: REM
   ROUNDED.APLSFT [5635]
110 VTAB 4:W = 6:D = 1: FOR J = 0 TO 13: HTAB 14: CALL
   FM,W,D,A(J): NEXT: REM FORMAT.1.DEC [4311]
120 VTAB 4: FOR J = 0 TO 13: HTAB 23: CALL FM,W,2,A(J
   ): NEXT: REM FORMAT.2.DEC [3514]
130 VTAB 4: FOR J = 0 TO 13: HTAB 30: CALL FM,8,3,A(J
   ): NEXT: REM FORMAT.3.DEC [3493]
140 PRINT: PRINT "ANOTHER EXAMPLE": PRINT [1967]
150 FOR J = 0 TO 13: CALL FM,5,1,A(J):: NEXT: REM FO
   RMAT.USING.";" [3250]
```

The formatter's limit is nine digits, not including decimal point and sign. If the number of characters in the formatted number exceeds the width, FORMAT cuts off highest-magnitude digits without

warning. You can also force some "E" notation with very small numbers and a lot of decimal places or with very large numbers.



To use FORMAT, BLOAD FORMAT anywhere there's free space. Normally, the program loads at 768 (\$300). The syntax is:

CALL A,W,D,N {;}

where A = address, W = width, D = decimal places, N = number, {;} = (the semicolon is optional). A, W, D, and N can be numbers or variables. (See **Listing 2**.)

So, the machine-language routine would interpret CALL 768,10,2,1,3 as call format, make a ten-character-wide field, provide two decimal places, and format 1.3.■

Write to Dr. James King at Counselor Education, 168 Doudna, Platteville, WI 5318.

## Grade Assigner

by Jonathan M. Bealer

AppleWorks gradebook templates lack one convenience—you can't assign letter grades in the program's spreadsheet section. There's a solution, though—you can use "logical functions" to get around it.

On the right side of your gradebook spreadsheet, just after the column that calculates students' percentages, label additional columns with the grades A, B, C, D, and F. (If your grading scale accommodates pluses and minuses, include those also. You'll just have more formulas to type in and more cutoff points to determine.)

Now, using the percentage column and referring to your department's grading scale, implement a series of formulas located on the same row as the student's grades. In the cell under "A" enter the following formula:

@IF(Y12>=.93,1,0)

This states that if the percentage in cell Y12 is greater than or equal to the given 93-percent cutoff for As, the program enters a 1 in the column labeled A. Otherwise, it enters a zero.

In the column labeled B, enter a similar formula:

@IF(@AND(Y12>=.85,Y12<.93),1,0)

This instructs the program to enter "1" in the B column if Y12 is greater than or equal to 85 percent (the cutoff point for Bs) and if Y12 is less than 93 percent.

## CORRECTION

*In the May 1988 Hint/Technique Cat.Text, we inadvertently omitted part of the accompanying program listing (p. 116). Below is the complete code for Cat.Text.*

```

1  REM  CAT.TEXT by Eric Oshlo  [2017]
2  REM  Copyright 1988, inCider  [2193]
10  DIM F$(200),S$(75),L(7),S(7):D$ = CHR$(4): PRINT
    D$"PR#3": FOR I = 1 TO 7: READ L(I),S(I): NEXT : DATA
    15,2,3,18,4,25,9,31,9,48,6,66,7,73  [6272]
20  HOME : HTAB 18: PRINT "STORE PRODOS DIRECTORY IN T
    EXT FILE": PRINT : PRINT "Routine stores a File's
    Name, Type, Size, Modified Date and Directory Pa
    th in a TXT file for use in creating an 8 categor
    y AppleWorks Database."  [16532]
30  POKE 34,5: PRINT D$"prefix": INPUT P1$: HOME : INPUT
    "Starting Directory/Subdirectory: ":P$: PRINT : INPUT
    "Output Text File Pathname: ":OP$: PRINT D$"PREFI
    X"P$: PRINT D$"PREFIX": INPUT P$: PRINT D$"OPEN"O
    P$  [12036]
40  PRINT "Processing "P$;:L = 0: PRINT D$"OPEN"P$,TD
    IR": PRINT D$"READ"P$: INPUT F$: INPUT F$  [4609]
50  INPUT F$: IF LEN(F$) AND LEFT$(F$,3) < > "BLO
    " AND MID$(F$,18,3) < > "DIR" THEN L = L + 1:F
    $(L) = F$  [5374]
60  IF MID$(F$,18,3) = "DIR" THEN F$ = MID$(F$,2,1
    5): GOSUB 110: FOR I = 0 TO S: IF S$(I) < > S$(S
    + 1) THEN NEXT :S = S + 1  [6199]
70  IF LEFT$(F$,3) < > "BLO" THEN S0  [1759]
80  T = T + L: HTAB 45: PRINT SPC(4 - LEN(STR$(L)
    ))L" Files Found.": IF L THEN PRINT D$"WRITE"OP$
    : FOR X = 1 TO L: PRINT MID$(P$,2, LEN(P$) - 2
    ): FOR F = 1 TO 7: PRINT MID$(F$(X),S(F),L(F)):
    NEXT F: NEXT X: PRINT D$  [10499]
90  PRINT D$"CLOSE"P$: IF C < S THEN C = C + 1:P$ = S$
    (C): GOTO 40  [3293]
100 PRINT D$"CLOSE": PRINT : PRINT S + 1" Directories
    /Subdirectories, "T" Total Files (excluding Dire
    ctories).": PRINT D$"PREFIX"P1$: POKE 34,0: END  [9736]
110 IF RIGHT$(F$,1) = " " THEN F$ = LEFT$(F$, LEN
    (F$) - 1): GOTO 110  [3116]
120 S$(S + 1) = P$ + F$ + "/": RETURN  [1832]

```

Otherwise the program again enters a zero. In this case, when you're including two criteria, you need the logic function available in AppleWorks 2.0.

Proceed with similar formulas for Cs and Ds. The last, under F, is similar to the formula under A: It deals only with percentages under the cutoff point for failure.

After copying the formulas under each letter for one row, use the copy function to make relative duplicates of the formulas for each student. The spreadsheet totals each column and reports that total back to the row just under the letters. The program changes the letter grades before totaling them, so you have to calculate the spreadsheet twice.

Use similar formulas to assign semester-average grades. Enter first-quarter totals, and average them with second-quarter totals. Return a percentage by totalling possible first-quarter points and possible second-quarter points, then set up an equation the same way you did for quarter grades. You won't have to type in each formula from scratch, though. Use Open apple-U to edit quarter formulas to fit semester percentages.■

Write to Jonathan M. Bealer at R.R. 1 Box 93B, Hereford, AZ 85615.



# Sound Digitizer

by Andy Haas

Ever wish your Apple could talk back? If you have an Apple II Plus or IIe, you're in luck. With Sound Digitizer (see **Listing 3**), you can input audio waveforms from your radio, tape recorder, and so forth, then record and save them and reconstruct them through your Apple's speakers.

You need to obtain an audio jumper cable to connect your Apple to the sound source. Match the plug on one end to the size of the audio source's output jack. The other end should be a miniature audio plug you insert into the Apple. You can purchase such a cable from most Radio Shack stores.

Type in Sound Digitizer, and save it to disk. Line 3 POKEs the digitizer program into memory. After RUNning Sound Digitizer, your screen will display the menu shown in the accompanying **Figure**. Various options let you digitize, record, and save, play back sequences, modify the *delay rate* (the speed at which Sound Digitizer records and plays), and load previously saved sounds.

To get sound as clear as possible, try to record high-pitched sounds. If your sound source has a tone selector, put it on its highest setting before recording. Also, avoid complicated sounds, such as a vocalist accompanied by five instruments. Finally, make wise use of the delay rate when recording. Too long a delay can make your recording rough and choppy when you play it. The smaller the delay, however, the more memory the program uses.

Use Sound Digitizer to develop a library of sound files to load and play whenever you need them. By modifying the delay rate, you can create several different sounds from one: Select a high

## Listing 3. Sound Digitizer.

```

1 REM Sound Digitizer by Andy Haas [2795]
2 REM Copyright 1988, inCider [2193]
3 FOR I = 768 TO 921: READ N: POKE I,N: NEXT I: REM
  Create SOUND.OBJ [3451]
4 TEXT : HOME : IF PEEK (104) < > 8 THEN POKE 104,
  8: POKE 103,1: POKE 2048,0: PRINT "Relocating pro
  gram...": PRINT CHR$ (4);"RUN SOUND.DIGITIZER" [7572]
5 HTAB 13: PRINT "SOUND DIGITIZER": HTAB 13: PRINT "-
  ----" [2957]
10 PRINT : PRINT "<1> Digitize": PRINT "<2> Play Back
  ": PRINT "<3> Modify delay": PRINT "<4> Load": PRINT
  "<5> Save": PRINT "<6> Modify start": PRINT "<7>
  Quit": PRINT : PRINT "Select: <?>" [10476]
15 B = 8192:E = B + 1:D = 10:L = 48857: IF PEEK (4889
  6) = 76 THEN 25 [3625]
20 L = 43616: POKE 43364,255: REM For DOS 3.3 [2272]
25 POKE 7, INT (B / 256): POKE 6,B - PEEK (7) * 256:
  POKE 9, INT (E / 256): POKE 8,E - PEEK (9) * 25
  6: ONERR GOTO 200 [5297]
30 VTAB 4: HTAB 23: POKE 0,D: PRINT "Delay rate: ";D;
  " ": HTAB 23: PRINT "Start: ";B;" ": HTAB 23: PRINT
  "End: ";E;" ": HTAB 23: PRINT "Bytes used: ";E -
  1 - B: SPC( 39 - PEEK (36)) [8753]
40 VTAB 12: HTAB 10: GET I$: PRINT I$:I = VAL (I$): ON
  I GOTO 60,70,80,100,120,140,170: GOTO 40 [4051]
60 CALL 768:E = PEEK (8) + PEEK (9) * 256: GOTO 30 [2314]
70 CALL 855: GOTO 40 [701]
80 VTAB 16: INPUT "Delay rate (1-32): ";I$:I = D:D =
  VAL (I$): IF NOT D OR D > 32 THEN D = I [4908]
90 VTAB 16: PRINT SPC( 40): GOTO 30 [1263]
100 VTAB 16: INPUT "Load what file? ";I$: IF I$ = "" THEN
  90 [3103]
110 I = 8192: PRINT CHR$ (4);"BLOAD ";I$;"A";I:E = I
  + PEEK (L) + PEEK (L + 1) * 256: GOTO 160 [4822]
120 VTAB 16: INPUT "Save under what file name? ";I$: IF
  I$ = "" THEN 90 [4161]
130 PRINT CHR$ (4);"BSAVE ";I$;"A";B;"L";E - B: GOTO
  90 [2713]
140 VTAB 16: PRINT "New start (8192-";E - 1;")": ";: INPUT
  " ";I$ [3055]
150 I = VAL (I$): IF I < 4096 OR I > E - 1 THEN 90 [2680]
160 B = I: VTAB 16: PRINT SPC( 40): GOTO 25 [1742]
170 VTAB 24: FOR I = 0 TO 10: PRINT : NEXT : END [1858]
200 VTAB 16: CALL - 868: PRINT "Error #"; PEEK (222)
  "; has occurred.": PRINT "Press a key to continue.
  ";: GET I$: VTAB 16: CALL - 868: PRINT : CALL -
  868: GOTO 90 [8721]
1000 DATA 169,0,133,215,173,96,192,69,215,16 [2093]
1010 DATA 3,172,48,192,69,215,133,215,173,0 [2042]
1020 DATA 192,16,237,173,16,192,165,6,141,43 [2170]
1030 DATA 3,165,7,141,44,3,162,8,173,96 [1611]
1040 DATA 192,10,46,119,95,164,0,136,208,253 [1868]
1050 DATA 202,208,241,173,0,192,48,15,238,43 [1871]
1060 DATA 3,208,229,238,44,3,173,44,3,201 [1730]
1070 DATA 150,144,219,173,43,3,133,8,173,44 [1843]
1080 DATA 3,133,9,173,16,192,96,169,0,133 [1794]
1090 DATA 215,165,6,141,104,3,165,7,141,105 [1852]
1100 DATA 3,162,8,173,119,95,69,215,16,3 [1736]
1110 DATA 172,48,192,69,215,133,215,164,0,136 [1990]
1120 DATA 208,253,10,202,208,236,173,0,192,48 [1988]
1130 DATA 208,238,104,3,208,3,238,105,3,173 [1898]
1140 DATA 104,3,197,8,208,211,173,105,3,197 [1915]
1150 DATA 9,208,204,96 [929]

```

Figure. Menu layout.

```

<1> Digitize          Delay rate: 10
<2> Play back        Start: 4096
<3> Modify delay      End: 4097
<4> Load             Bytes used: 0
<5> Save
<6> Modify start
<7> Quit

Select: <?>

```

delay rate to achieve a low, rich sound, for instance, or a low delay rate to obtain a high-pitched sound.■

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## COMING ATTRACTIONS

■ What's in store for the Apple II? How will emerging technologies and a changing marketplace affect its future development? *inCider* interviews Steve Wozniak, codesigner of the original Apple and co-founder of Apple Computer.

■ *inCider* surveys Apple II CAD programs for home users—see how computer-aided design can make your drawing and drafting jobs easier.

■ Scott Mace on the evolution of Apple II fantasy role-playing games: Is low-memory design killing innovation?

■ *inCider* reviews A/C BASIC and TML BASIC, two compilers for the GS. What does a fundamental difference in design philosophy mean for programmers?

■ Reviews: MultiScribe 3.0, DeskWorks, Graphics Studio, Mavis Beacon Teaches Typing, Games Editors Play, At a Glance, and more

# inCider

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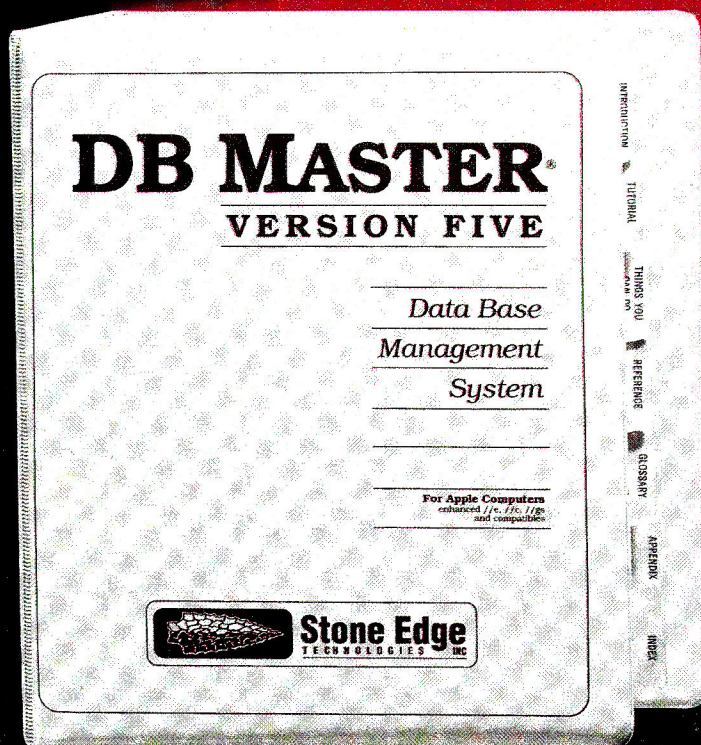
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## DB Master Version Five:



## On the Pole in the Database Derby

It's sleek, it's sophisticated, it does zero to 60 in five seconds flat. Putting your collection of 83 comic books into a **DB Master Version Five** file is like buying a Porsche 944 to drive to the grocery store. If you don't need to manipulate and keep track of a whole lot of data, DB Master Version Five is going to be over your head. But if you need power—this one really *moves*.

The original DB Master was released in 1980. It ran on the Apple II and II Plus—in 40 columns, of course. The company that made it was called Stoneware.

But this is DB Master 5, the company is now called Stone Edge Technologies—and the product's for *serious* database users. From the main-menu screen you have 16 choices—everything from Add Records and Create or Edit Report Formats to Restructure Files and Exit to ProDOS—grouped into four categories:

Data Entry and Search, Reports and Data Exchange, Maintenance Functions, and Change Files or Exit. The program runs on an enhanced IIe, IIc, or IIGS, and comes on both 5¼- and 3½-inch disks. It's noncopy-protected, so you can also install it on a hard disk. (Three cheers for Stone Edge.)

Your DB Master files can take a variety of formats: alphanumeric records of 1–150 characters, yes or no entries, dollars-and-cents amounts, any of 11 date styles, numeric entries. You can also find out the date and time you last edited or added a record. Files can be as large as you require. Each record has room for 2K of information in as many as 200 fields. If you need more information than that within a record, you're probably trying to process too much.

Any program of this sort in the Apple II world has to contend with AppleWorks, and DB Master handles that, too. You can

import information from an AppleWorks database file into a DB Master file; you can take information from a spreadsheet or word-processor file, as well, for that matter. Users of the original DB Master can also transfer their files to the new format.

And what's this souped-up, high-performance vehicle going to cost you? Fortunately, DB Master Version Five doesn't carry a sports-car price tag—it sells for \$179.

In the database-manager races to come, it looks like Stone Edge will continue to cling to the inside track. At press time (early May), the company was hard at work putting the finishing touches on **DB Master Version Five Professional**, with multi-file relational capabilities, keystroke macros, and other high-octane goodies. For more information, contact Stone Edge Technologies, P.O. Box 200, Maple Glen, PA 19002, (215) 641-1825. ■





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- Provides a MONEY BACK Guarantee.

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ZIP CHIP contains a fast 65C02 microprocessor, a unique gate array and a special 16K RAM for cache, which allows data and instructions to flow through your Apple II at an accelerated rate without causing a jam-up. Since the normal speed of the 65C02 CPU is only 1 megahertz, the ZIP Technology engineers replaced the normal clock with an internal 16 megahertz crystal and partitioned it such that the enhanced ZIP CHIP will operate at 4 megahertz, a 400% increase in speed.

### LIFETIME WARRANTY

ZIP CHIP carries a LIFETIME REPLACEMENT WARRANTY for registered owners. If, for any reason, its internal circuitry fails to function, just return it for a FREE replacement; forever, anytime, for whatever reason.

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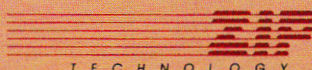
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