18 Word Processors Reviewed • Editors' Choice: Tom Snyder's National Inspirer, p. 128

THE APPLE II MAGAZINE

inCider

AN IDG COMMUNICATIONS PUBLICATION

November 1988
USA $2.95
Canada $3.95
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inCider **(ISSN #0740-0101) is published monthly by IDG Communications/Peterborough, Inc., 80 Elm Street, Peterborough, NH 03458. Phone: (603) 924-9471. Second-class postage paid at Peterborough, NH, and additional mailing offices. (Canadian second class mail registration number 9590.) Subscription rates in U.S. are $27.97 for one year, $43.00 for two years and $59.00 for three years. In Canada, $34.97, U.S. funds, one year only. In Mexico, $32.97—one year only, U.S. funds drawn on a U.S. bank. Nationally distributed by International Circulation Distributors. Foreign subscriptions (surface mail), $47.97—one year only, U.S. funds drawn on a U.S. bank. Foreign subscriptions (air mail), $82.97 prepaid, U.S. funds drawn on U.S. bank, one year only. Postmaster: Send address changes to *inCider*, Subscription Services, P.O. Box 58618, Boulder, CO 80322-8618. (Send Canadian changes of address to: *inCider*, P.O. Box 1051, Fort Erie, Ontario L2A 5N8.)**

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Vol. 6 No. 11
November 1988

ON THE COVER

50 A Little More for a Little Less
Will turbo speed and a smaller price tag give Apple's new IIc Plus the inside track in the race for entry-level home-computer sales?

ARTICLES

51 An Underdog's New Tricks
Introducing the Laser 128EX/2, the best Apple II compatible yet. It's got speed, flexibility, and lots of extras—has the new Apple IIc Plus met its match?

56 GS/OS
With plenty of power and speed, it's a new engine for a high-performance machine: Apple finally soups up the GS with a true 16-bit operating system.

60 Polish Your Words
For putting "proper words in proper places," you can't beat the versatility and ease of use you'll get with an Apple IIe/IIc word processor. Check out the nine products surveyed here and find one that's just right for your writing needs.

Field Trip will appear in December with a survey of drug-education programs. Stattus Report and Not for Programmers Only will return in upcoming issues.

72 A Rhapsody of Words
What can fonts, color, menus, and mice do for your writing? Take a look at three word processors that take advantage of your GS' special graphics talent and see what you've been missing.

78 Word Processors Make the Grade
A host of educationally oriented word processors let students hone their writing skills and help instructors teach the craft of composition.

DEPARTMENTS

***inCider*'s View** 8
Born Old (But Not Ugly)
by Dan Muse

Letters 12

News Line 14
Spotlight on . . . DB Master: The Parties' Choice • Made in Japan • Innovative Education • Product Updates • Apple Bits

Apple Clinic 20
Recipe for Success: New-Wave Cooking • Quit to Squirt • GS Over There • GS to Mac and Back • Quickies
by William P. Kennedy, Ph.D.

Reviews 26
Paintworks Gold • Managing Your Money 3.0 • FingerPrint GSi • Mavis Beacon Teaches Typing 1.5 • At a Glance

Games Editors Play 46
Anchorman • Club Backgammon • Soko-Ban • Short Takes

Mace on Games 113
Around the World in 128K
by Scott Mace

Hints/Techniques 116
Color Mixer

New Products 120

Coming Attractions 127

Reader Services 127

Editors' Choice 128
National Inspirer:
An All-American All-Star

TUTORIALS

AppleWorks in Action 86
Cash-Flow Trilogy: Part 3
by Ruth K. Witkin

Applesoft Adviser 96
Amazing Mazes
by Dan Bishop

***inCider* On Line** 104
The Electronic BBS: Getting Started
by Tom Sherman

Photography by Mark Johann

Born Old (But Not Ugly)

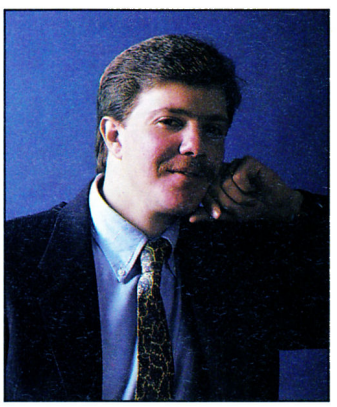
by Dan Muse, Editor in Chief

What if you announced a new computer and nobody cared?

Apple Computer could be facing such a dilemma. The new IIc Plus features some improvements over the older IIc—a faster microprocessor, a built-in 3½-inch disk drive, an internal power supply, and a few other little goodies. At $1099 for a IIc Plus with a color monitor, Apple's pricing isn't exactly aggressive, but it is lower than the old IIc's price. As we were going to press with this issue, we learned that Apple plans to increase the price of the IIGS from $999 to $1149. Apple rationale will be that it now bundles a memory-expansion board with the GS. However, the price increase widens the gap between the IIc Plus and IIGS and makes the 8-bit system a more reasonable purchase. Even though you can save a few hundred dollars, you're still buying old technology; unless you really want a small, easily transportable computer, there's little reason to buy the IIc Plus over the IIGS.

We care about the IIc Plus, or, perhaps better said, we care that you know about the IIc Plus. (See "A Little More for a Little Less" in this issue, p. 50.) It's not an unattractive computer. It's an easy-on-the-eye, all-in-one system. But the improvements over the old IIc simply aren't that significant.

The IIc Plus' faster microprocessor (4.0 megahertz) is great if you find yourself calculating large spreadsheets or sorting complex databases. In fact, if pure speed is what you're after, the IIc Plus is faster than the GS, a IIe with a Zip Chip, and the new Laser 128EX/2. Speed, however, isn't everything. What makes powerful programs such as AppleWorks cumbersome at times is *disk access*. AppleWorks is a large program, and if you have only 128K with which to operate, it has to go to the disk to perform many of its operations. More random-access memory (RAM) is what you need to make your life with AppleWorks easier. A faster microprocessor is nice, but I'd take more memory for a RAM disk anyday.



"It's uncommon for a company to announce a new product that uses old technology."

Three-and-a-half-inch disks are great. Everyone should have one. However, a lot of people will want a 5¼-inch disk drive as well. Expect a lot of software to be available on 3½-inch disks as a result of the IIc Plus, but there are thousands of good, affordable programs that won't be released in 3½-inch format. New programs will adhere to the smaller standard, but bargain hunters will want access to classic educational and entertainment programs that are available only on 5¼-inch disks. Whether you have an older IIc or buy the new one, you'll still consider adding a second disk drive at some point.

It certainly isn't uncommon for a company to continue to support existing systems. It's only good business for a company to support its installed base of users, and Apple has been better about it than most.

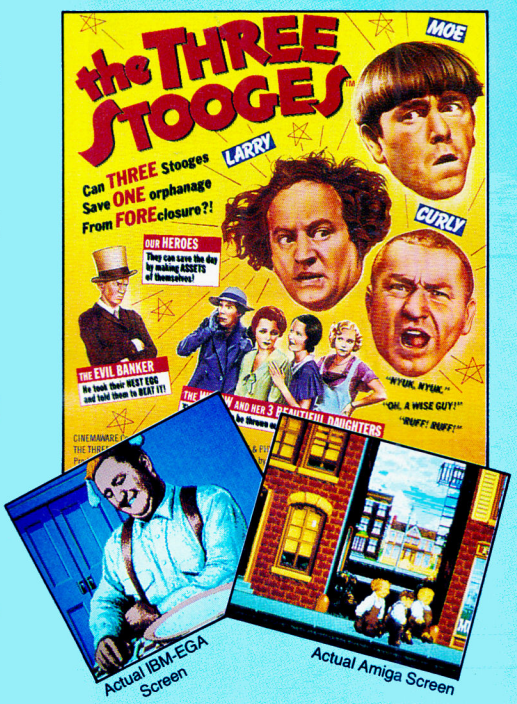
It is uncommon, however, for a company to announce a new product that uses old technology. In that light, the IIc Plus is an enigma. If Apple had introduced it at a price that made it attractive when compared with the Laser 128EX/2 (see "An Underdog's New Tricks," this issue, p. 51) or low-cost MS-DOS clones, you could see a strategy.

The introduction of the IIc Plus stirs up memories of the IBM PCjr. In 1984, when sales of IBM PCs were growing at a phenomenal rate, IBM announced the PCjr, a lower-priced, less-powerful computer aimed at the "home user," who IBM thought wouldn't want the power of the IBM PC. We all remember the short, unhappy life of PCjr. People who wanted an MS-DOS system didn't want to settle for the limited capabilities of the Junior. They wanted the power of the PC.

It's our guess that most new buyers won't want the limited capabilities of the IIc Plus when they could buy a IIGS. Apple will certainly contrive a marketing strategy to position the IIc Plus. It appears that part of that strategy includes increasing the price of the IIGS. Whatever the pitch is, the IIc Plus simply clouds the Apple II picture, and a GS price increase opens the door further to low-cost MS-DOS computers.■

CINEMAWARE

PRESENTS



Actual IBM-EGA Screen

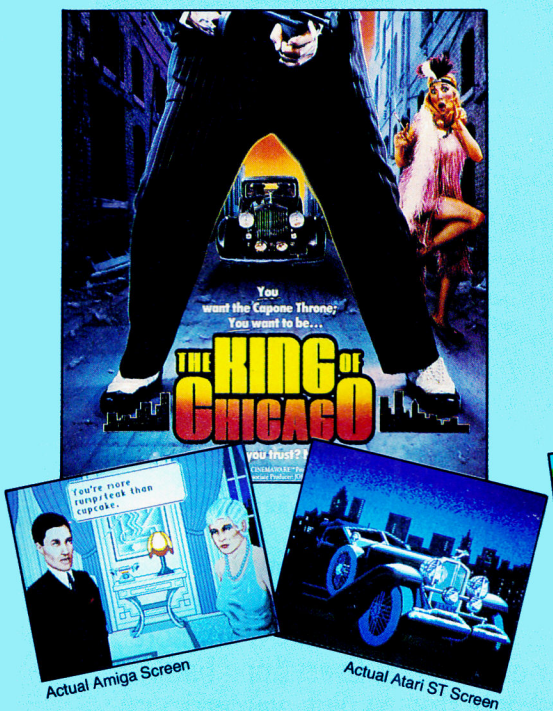
Actual Amiga Screen

Actual Apple IIgs Screen

Actual C64 Screen

Actual Amiga Screen

Actual C64 Screen

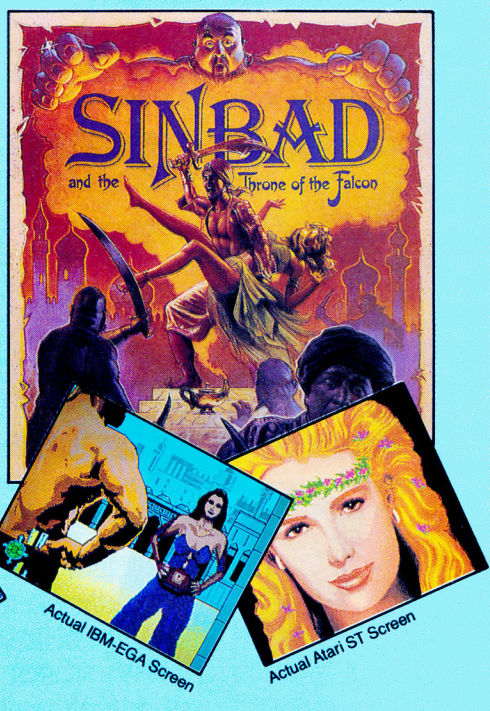


Actual Amiga Screen

Actual Atari ST Screen

Actual Apple IIgs Screen

Actual IBM-EGA Screen



Actual IBM-EGA Screen

Actual Atari ST Screen

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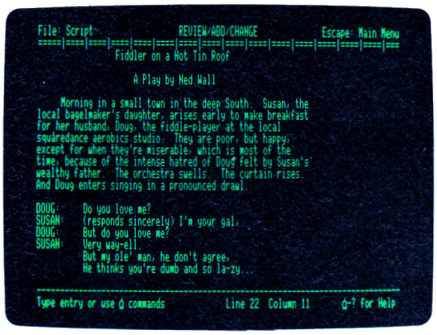
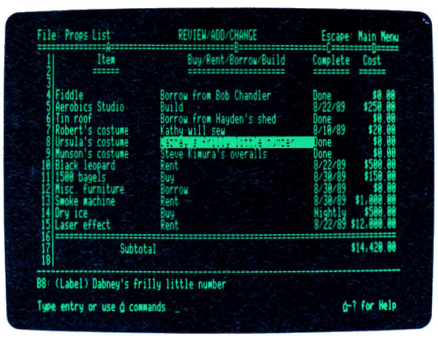
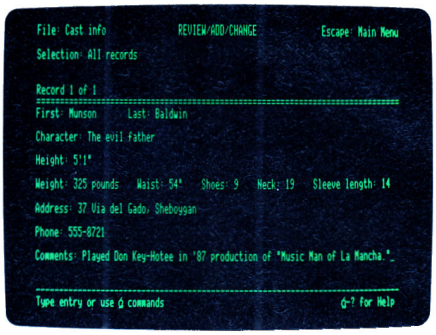
Everything isn't what it used to be.



With a word processor, spreadsheet and database in one package, AppleWorks has just about everything an Apple II owner could want.



You can jump from one program to another in the blink of an eye. Which makes AppleWorks an exceptional choice for fast-paced businesses.



AppleWorks is the best-selling Apple software of all time. And if you own an Apple IIe or IIc, you still can't buy a more powerful program.

When AppleWorks® rocketed to the top of the best-seller lists a few years back, Apple II owners thought they had seen everything.

They were right. AppleWorks contained every program you could possibly want in just one program. And exercised the power of the Apple II like it had never been exercised before.

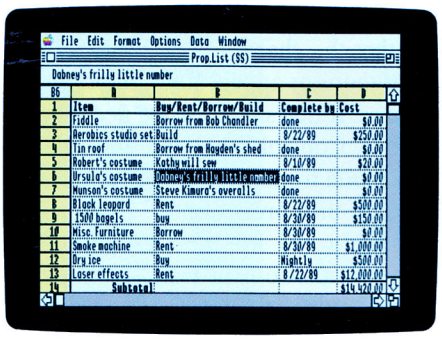
But then came the Apple IIGS. With more power and new capabilities. Everything had changed. And Apple IIGS owners wanted more.

A program with everything AppleWorks has. And everything else, too.

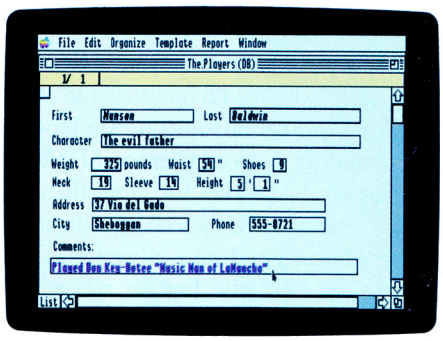
© 1988, Claris Corporation, 440 Clyde Avenue, Mountain View, California 94043; (415) 960-1500. Claris is a trademark of Claris Corporation. AppleWorks is a registered trademark of Apple Computer, Inc., In Canada, call 800-668-8948. AppleWorks GS requires an Apple IIGS with 1.25 megabytes of RAM. If you don't have that

Now it's more.

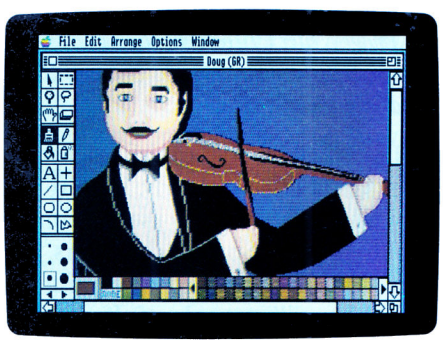
Like AppleWorks, AppleWorks GS offers a powerful word processor. And you can enhance your work with type styles, sizes and fonts.



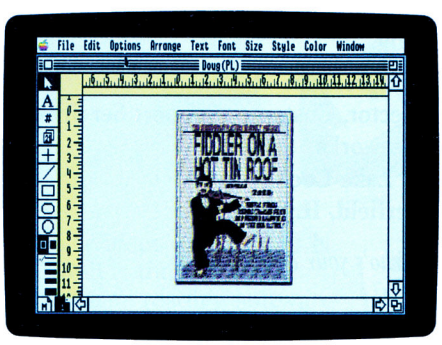
AppleWorks GS can read all your AppleWorks files. And when you transfer your spreadsheets to AppleWorks GS, you can add boldface.



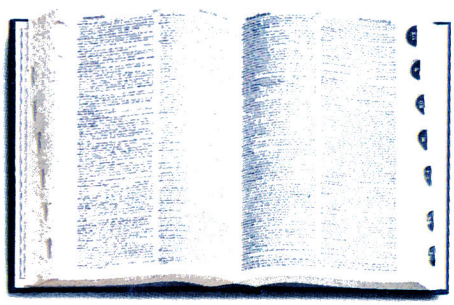
The database lets you store and sort thousands of business, school or home records. And now you can use a mouse and pull-down menus.



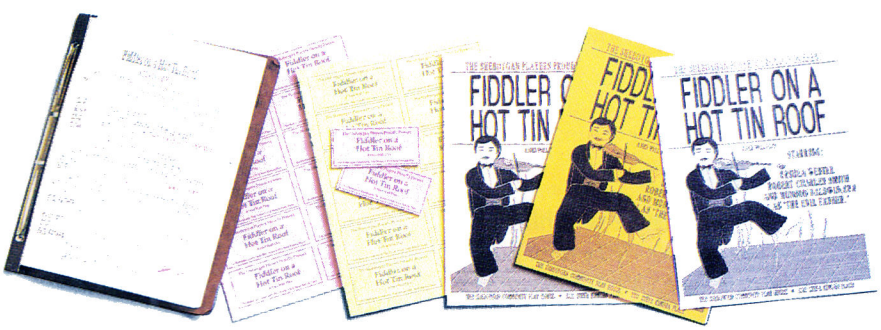
A graphics program that seamlessly combines bit-mapped painting and object-oriented drawing capabilities will leave Macintosh users jealous.



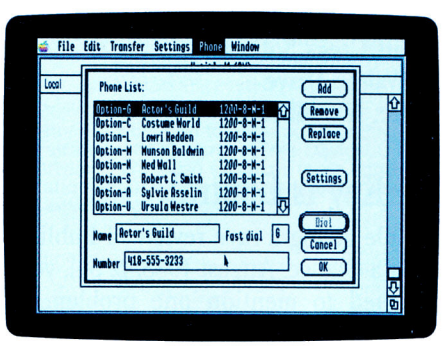
AppleWorks GS includes the most powerful Apple II page-layout program you can buy. Put all the pieces together. Then publish them.



A spell checker with an 80,000-word dictionary is built in. Ditto for a thesaurus that can make you more articulate, eloquent or perspicuous.



What you see is what you get. Because any Apple ImageWriter or LaserWriter printer prints what you see on the screen exactly how you see it. Automatically.



AppleWorks GS supports most popular modems to let you send and receive files via telephone.

Introducing AppleWorks GS. Six powerful programs in one easy-to-use package. Six programs working together to exploit the full resources of the Apple IIGS. There's even a deal in the works for owners of AppleWorks, MultiScribe and MultiScribe GS.

A special upgrade offer that, as they say on late-night TV, will not be repeated.

Upgrade to AppleWorks GS and save. We'll even pay for the phone call. Dial 800-544-8554 to get your upgrade kit now. And soon you'll have everything going for you again.

CLARIS™

*licensed to Claris Corporation. Apple, IIGS, ImageWriter and LaserWriter are registered trademarks of Apple Computer, Inc. For the location of a Claris dealer near you, call **800-3CLARIS, ext. 160.** much, AppleWorks GS provides an excuse accepted by most parents, spouses, partners and bosses to justify a RAM upgrade.*

LETTERS

Where's Watson?

I was disappointed that your "Games Guide" (May 1988, p. 42) omitted both our company and our program, Sherlock Holmes and the Vatican Cameos. SH&VC has been on the market for more than a year and has done fairly well—it's distributed in Australia and now in western Europe. As we were the first to release a Sherlock program in interactive-text format, your omission is even more disturbing.

The Sherlock series was designed to be a true mystery series, not another romp through conundrums and puzzles. Its designers understand the Holmes mythology. That's what the Sherlock series is all about—short stories that capture the essence of a Holmes story as Conan Doyle would have, had he an Apple II! Each story is based on a mentioned, but untold, story from Watson's own work.

This summer we introduced The Charters Affair, the second installment of which takes full advantage of the IIGS' 16-bit graphics and mouse environment.

Bonnie J. Ross
President
Ellicott Creek Software
138 Walton Drive
Snyder, NY 14226

The Key Is Control

While giving a rave review of Publish It! (At a Glance, August 1988, p. 34), you neglected to mention one problem. I bought Publish It! because it's compatible with AppleWorks. The color disks aren't usable on the GS, though, because the resolution is inadequate; my Apple dealer feels that Publish It! is designed for non-high-resolution monitors. There's no such indication on the box. At this juncture, I feel I'm out significant dollars.

Walt Le Baron, Ed.D.
P.O. Box 16
Olmstedville, NY 12857

From Mr. Le Baron's letter I'm assuming that the characters on his IIGS' RGB color monitor appear fuzzy and rainbow-colored. If that's the case, he needs to use his IIGS' Control Panel to change the display mode from color to monochrome.

To do this, press Control-Open apple-Escape to call up the Desk Accessory menu. With Control Panel highlighted, press Return, then with Display highlighted, press Return again. Now highlighted is the Type option, which you can change by pressing the left- or right-arrow key. That should be all it takes to get going.

Garry Forman
Director, Customer Support Services
Timeworks
444 Lake Cook Road
Deerfield, IL 60015

Who's your dealer? —*eds.*

Habla Español Aqui

I write frequently in Spanish, a language in which words often require an accent on top of a letter. I'd like AppleWorks to do that for me. How can I solve this dilemma?

Marcelo Banderas
8921 Powell Avenue
St. Louis, MO 63144

The Spanish character set is hardware-selected on the ImageWriter II by closing DIP switches SW1-1 through SW1-3. Alternatively, that same character set can be software-selected by sending the control code ESC D Control-G Control-@. From AppleWorks, insert that control sequence as part of the interface-card specification for your particular printer. Or, set up a custom printer that'll make the control-code sequences switch character sets, such as the above for Spanish. The character set will now replace those for the printer codes pertaining to boldface, underline, super- and/or subscript commands.

For an authentic-looking printout, "backspace" over the accented character before printing: Send the backspace control character, Control-H, to the ImageWriter II (or most other printers). Unfortunately, AppleWorks won't let you insert control characters, such as Control-H, directly into your text. So again, you'll have to create a custom printer and replace one of the printer codes with the backspace command character.

Another solution may be the AppleWorks utility program EuroWorks, from S.A. AuTour, P.O. Box 7459, Beaverton, OR 97007, (503) 645-2306. According to the manufacturer, EuroWorks lets you print accented characters on an ImageWriter I, II, or compatible ($20 per language, $30 for four; French, German, Italian, and Spanish offered). —*eds.*

I'm a high-school Spanish teacher who uses MultiScribe regularly. However, I'm not talented enough to use the Font Editor to produce Spanish characters. Have any readers developed a Spanish font you'd be willing to share? If so, please write!

Louis Cornelio
3691 Marlesta Drive
San Diego, CA 92111

Doctor's Cure

Recently I purchased a IIGS, which I use with Applied Engineering's GS-RAM memory board with 1 megabyte. I also bought MultiScribe 3.0, List Plus, several games, and other assorted GS software. MultiScribe froze when I tried using multiple windows or the Thesaurus. List Plus had a few untimely freezes and even the Finder crashed once. The Apple dealer was great; he ran several diagnostic tests, which my Apple passed with flying colors, but the dealer still offered to, and did, replace the logic board.

The programs continued acting up, but less so. Applied Engineering's diagnostic test concluded that the board was all right. I replaced the MultiScribe disk, but it still crashed—this time with pretty

colored lights on the margins and tab settings. I even purchased a Kensington System Saver to cool things down. My word processor remained fickle. I thought I was going mad until Daniel Gahagan's letter (Apple Clinic, June 1988, p. 26) appeared, stating the freezes he'd experienced on the GS. Thank you, Apple Clinic, for saving my sanity.

John Szaton
120 Walnut
Park Forest, IL 60466

GS Grapevine

Several months ago someone broke into my home and stole my Apple IIe. After about three frustrating months of dealing with five different Apple computer dealers, I purchased a new IIGS.

My main problem is that I live in a rural part of south-central British Columbia and the nearest Apple dealer is about 60 miles and one hour's drive away. I purchased my GS from a dealer 300 miles away in Vancouver. While the Shusway Valley where I live is a fantastic place for tourists, it's a very lonely place for computer owners.

The only way I can get GS-specific information is from magazines. My "local" dealer keeps his disk drives unhooked from his demo GS so that people won't play with it. So far I get no support from any Apple dealers; Apple computer refers me to Apple Canada, which in turn refers me to the dealer, who hasn't a clue over and above looking up prices on the few items he stocks.

I'm hoping that other IIGS owners will write me so that we can exchange letters and information about our computers. I don't have a phone, so contact through BBSs is impossible.

Jim W. Pook
Site 4, Comp. 9, RR #1
Sorrento, British Columbia
Canada VOE 2WO

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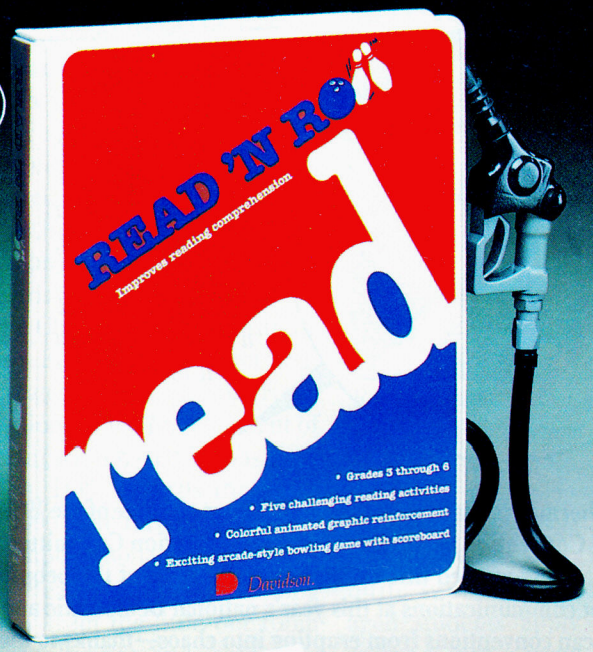
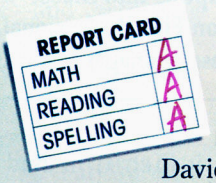
inCider *welcomes readers' comments regarding articles, letters, or other topics of interest. We reserve the right to edit letters for clarity, style, and space. Please address your correspondence to Letters,* inCider, *Elm Street, Peterborough, NH 03458.*

HIGH GRADE FUEL.

NEW



Davidson's new Read 'N Roll is the highest octane reading software program you can buy for your kids. Formulated by teachers to grow with kids and help them develop the 5 basic reading comprehension skills.



Read 'N Roll pumps in confidence and love of reading, and prints out Certificates of Excellence.

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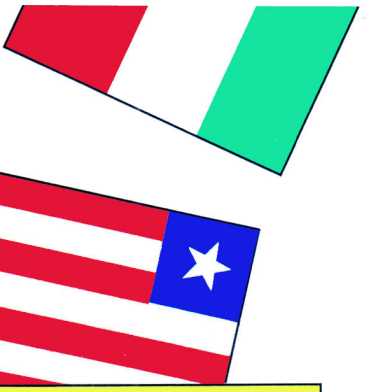
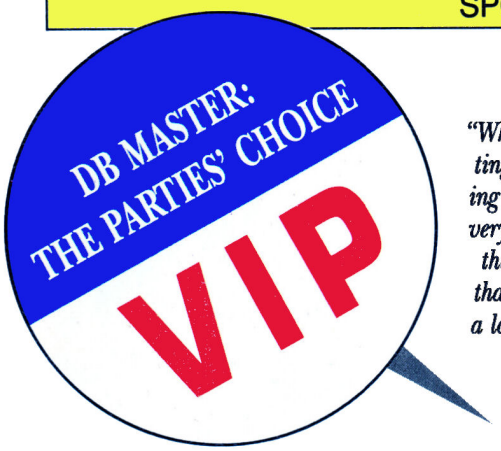
IC 11/88

Davidson.

NEWS LINE



SPOTLIGHT ON.....



"While people are sitting at home watching what looks like a very organized event, they should realize that DB Master did a lot of work to keep it that way."

Bob Sherman is chairman of the Print Subcommittee of the 1988 Political Convention Radio Frequency Coordination Committee. What that long-winded title means is that he's one of the people who kept communications at this year's national Democratic and Republican conventions from erupting into chaos—thanks to his Apple IIGS and DB Master Version Five Professional, a sophisticated, high-performance database manager from Stone Edge Technologies of Maple Glen, Pennsylvania.

Nearly every magazine, television station, radio station, and wire service covering the conventions wanted to set up its own radio and walkie-talkie system. Each had a license dictating the band and range of channels it could use—but the frequencies available for the press were limited. "So it's easy to understand," explains Sherman, "that if there are hundreds and hundreds of these organizations congregating in one place, everyone is not going to be able to use the same frequency [as at home]. And that's what this is all about."

"This" is DB Master, the Apple II database manager that tracked the reporters and technicians attending each convention, what equipment each organization planned to use, and the number of frequencies they needed. Using this information, the conventions' RF Coordination Committee assigned appropriate frequencies. After two tiring weeks, Sherman had some unqualified words of praise for the master organizer: "[DB Master] is the strongest, most powerful database program I have ever seen for the Apple." *—P.P.*

MADE IN JAPAN

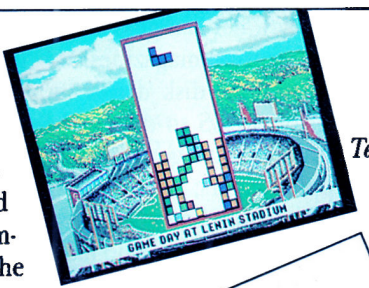
Foreign games have invaded our shores. From the Soviet Union, Japan, and elsewhere, games developed in other countries have been appearing on Apple II screens across the United States.

Tetris (Editors' Choice, October 1988, p. 120) is the most notable of the bunch. Tetris was developed in the Soviet Union by Alexei Pazhitnov, a researcher at the Computer Centre of the USSR Academy of Sciences in Moscow, and Vadim Gerasimov, a computer-science student at Moscow University.

Spectrum Holobyte (now a division of Sphere) is the U.S. ambassador for Tetris. "Our agent accidentally came across it [Tetris] in Budapest while over there talking to developers," says Karen Sherman, director of marketing for Spectrum Holobyte (Alameda, CA). "He saw it on the screen and liked it, so he made the deal and got it for us." Broderbund apparently had had access to Tetris before Spectrum Holobyte, but had turned it down.

Spectrum Holobyte has also brought over a game from Japan called Soko-Ban. Soko-Ban (Japanese for "warehouse man," which is the role you play in the game) had sold more than 400,000 copies in Japan. "It had been so successful over there," says Sherman, "that we thought we'd try it over here."

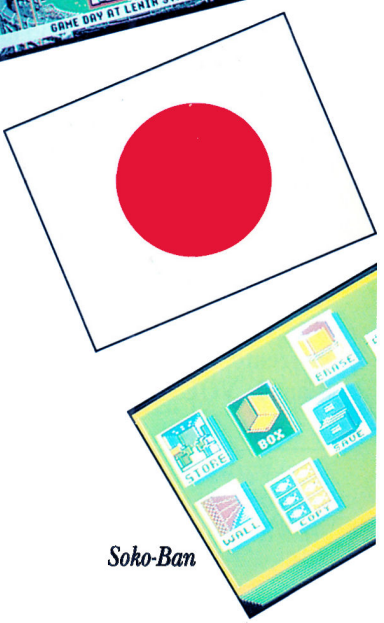
Tetris and Soko-Ban are part of Spectrum Holobyte's International series, which also includes Intrigue from the United States and Zig-Zag, a Commodore 64 game from the United Kingdom.



Tetris

Another import from Japan is Thexder, distributed in the U.S. by Sierra On-Line (Coarsegold, CA). Thexder was designed by a Japanese company called Game-Arts. Ken Williamson, president of Sierra On-Line, wanted to produce a good action game, but couldn't find suitable developers in the United States. He went to Japan to look for an action game to license and found Thexder.

Thexder was Sierra On-Line's best-selling product last



Soko-Ban

Silpheed

year, and has sold more than a half-million copies in Japan. This month Sierra On-Line will also begin distributing a sequel to Thexder, called Silpheed, from the same designers.

Will Sierra continue to bring in games from other countries? What Williamson really wants to do is spur U.S. development of action and arcade games like Thexder and Silpheed, but until then, Sierra will continue to consider Japanese imports. "They have turned game design into an art form," says Kirk Green, public-relations manager for Sierra On-Line. "They have the highest-quality arcade games available anywhere."

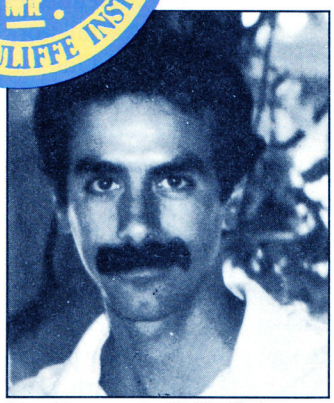
California Dreams, a relatively new company based in San Jose, has brought yet another series of games into the States. Vegas Gambler, Vegas Craps, and Club Backgammon were developed in Warsaw, Poland, by the European branch of California Dreams. The company doesn't license these games from a foreign firm, as Spectrum Holobyte and Sierra On-Line do; it simply develops some of its software in Poland. California Dreams is currently working on an *American Graffiti*-type game to be called Hot Rod, expected for the GS in early 1989.

Broderbund Software (San Rafael, CA) has gone one step further. It's importing not only foreign games, but entire companies. Broderbund recently reached an agreement with 11 Japanese software companies to form Kyodai Software Marketing. This joint venture will seek out titles (mostly entertainment) that have been popular in Japan and transfer them to formats compatible with American computers. Broderbund will use its distribution and marketing channels for the new titles, but they'll bear the original Japanese developer's brand name, as well as the Kyodai name.

Even if it seems that everything these days has "Made in Japan" stamped on the back, take heart: These games are all *good* reasons for increasing the trade deficit. **—L.L.**

INNOVATIVE EDUCATION

A NASA research laboratory—full of computers, robots, wave-form generators, and oscilloscopes—and a traditional-looking schoolroom equipped with computers and video laser discs are two of the futuristic environments teachers have created for today's students. The instructors responsible for these cutting-edge classrooms are among the five selected as 1988 Christa McAuliffe Educators by the Christa McAuliffe Institute for Educational Pioneering, created by the National Foundation for the Improvement of Education based in Washington, D.C. Awards included $5000 from the Institute and a computer donated by Apple.



Ron Fortunato, 1988 Christa McAuliffe Educator and creator of a NASA research lab.

Teaching has come a long way from the little one-room schoolhouse—and according to these five exemplary educators, it shouldn't be a case of one adult lecturing a group of children. "I don't dictate learning," says Gail Morse, a 1988 Educator from Huntersville, North Carolina. "I'm a mentor to the child."

Ron Fortunato, who created the NASA research lab in Norfolk, Virginia, says of his classroom, "There's a lot of teaching going on, but it's quite subtle." High-school-aged students apply for acceptance into Fortunato's class and are interviewed by him. Once accepted, they design an experiment, build it and test it, then publish the results.

The important thing, Fortunato adds, is to pick a real-world setting for education. "I've picked space. You could pick an archeological dig or a corporate headquarters," he says. And his students' work isn't limited to their class-

PRODUCT UPDATES

■ **Peterson's College Selection Service** has been updated. The 1989 edition features more information, including on-line "snapshots" of all accredited colleges and universities and a revised format. For more information, contact Peterson's Guides, P.O. Box 2123, Princeton, NJ 08543-2123, (609) 924-5338.

■ Version 8.3 of **Copy II Plus** is now available from **Central Point Software** for $15, plus $3 shipping and handling ($8 outside North America). To order, call (503) 690-8090. For more information, contact Central Point Software, 9700 S.W. Capitol Highway, Portland, OR 97219.

■ The price of **Activision's Paint Write Draw** package has been reduced to $129.95 through December 31, 1988. The package includes Paintworks Plus, Writer's Choice Elite, Draw Plus, and Clip Art Gallery. For more information, contact Activision at 3885 Bohannon Drive, Menlo Park, CA 94025, (415) 329-0500.

room; NASA engineers have set aside some room on an upcoming space-shuttle flight for the students' experiments.

Gail Morse encourages her students to divide themselves into groups while they all work on the same project. One section might gather information on line while another performs an experiment and a third studies how the project relates to their city or town. For instance, her students want to know how beekeepers in Alaska keep the insects alive in that climate, so they plan to telecommunicate with Alaskan students to find out.

Both Fortunato and Morse agree that their classrooms have changed because they've been forced to. "Person-to-person contact is just not enough," Morse explains. "This is the information age. Schools need to be designed so that children can access information." To that end, Morse adds, computers can help children develop thinking skills by providing them with plenty of information.

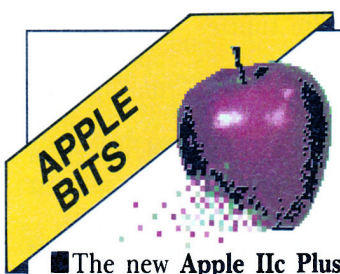
Fortunato agrees that the educator's responsibilities are changing. "The teacher has to be able to teach life-long process skills like creativity and problem solving. Those skills can be used across the board and throughout their [the students'] lifetimes," he notes.

It's a big responsibility. According to a spokesperson for the NFIE, that's why the organization created the Christa McAuliffe Institute—to inspire teachers and to create role models by honoring teachers who have made the best use of technology to help their students. In addition to the five 1988 Educators, the Institute has also chosen six groups of teachers as Fellows. All those selected met at a conference in California last August so that the Educators could help the Fellows develop their skills.

As yet, it's too early to tell what effect the Institute has had on the quality of education. "Teacher leadership coming out of this conference—as role models and stimulators of new ideas—would be evidence that we've been successful," says Donna Rhodes, executive director of the NFIE.

The 1988 Educators agree, however, that teachers are greeting the development of new equipment and techniques enthusiastically. Gail Morse says it best: "This is a fun time to be teaching, with all this technology coming into play. It unties you from the front of the room." **—P.P.**

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.*



■The new **Apple IIc Plus** is already generating third-party hardware support. Look for a new **modular modem/memory board** from **Epic Technologies** (Fremont, CA). At press time the company reportedly hoped to introduce this expandable internal peripheral at September AppleFest in San Francisco.

■More news from **Epic Technologies**: The company will now bundle all its modems with **ProTerm** communications software (from Checkmate Technology, Tempe, AZ). If you already own an Epic modem, you can get your copy of ProTerm for approximately the cost of a disk and postage. Call Epic for details at (415) 683-0932.

■**AppleFest** keeps getting bigger. At press time Cambridge Marketing (organizers of the show) said it expected 22,000 people to gather at the San Francisco extravaganza in September.

■The appearance of **AppleWorks GS** (formerly StyleWare's GSWorks) has apparently spooked some people in the integrated-applications business. **Softsync** (New York, NY) has tabled plans for a GS version of Trio. Instead the company's working on individual applications for the GS, most likely a word processor first, followed by a database. Softsync will upgrade the current 8-bit version of **Trio** to include a calendar and an option to import AppleWorks files, however.

■**Mindscape**'s (Northbrook, IL) popular Macintosh games, **Deja Vu** and **Uninvited**, should be available for your GS by the time you read this.

■Couldn't find the **Mediagenic** (a.k.a. **Activision**, Menlo Park, CA) booth at MacWorld Expo in Boston? Just for a change, the company decided to call itself **Ten.Point.0**, which is apparently the name of its new Mac product line. Is someone named Sybil working there?

■Has **Claris** (Mountain View, CA) hired the cartoonist responsible for Archie and the Gang? Take a look at the new **AppleWorks** packaging, this issue, p. 70.

■SSI has relinquished some older titles. **Mindscape** is now publishing **SSI's backlist** titles for its Thunder Mountain line of low-priced entertainment software—war games like Fortress, Nam, and Battalion Commander are available again at a cheaper price.

■**New World Computing** (Los Angeles, CA), publishers of the Might and Magic fantasy role-playing games, has acquired **Task Force Games**. Task Force publishes such strategic and tactical games as Star Fleet Battles and Star Fire. All New World products are distributed by **Mediagenic**.

■**Applied Ingenuity** (Baldwin Park, CA) is getting closer to finishing its new family of **inexpensive internal hard drives** (tentatively called the Insider) for the GS and IIe. In 20-, 30-, and 50-megabyte increments, they should sell for $450, $550, and $650, respectively.

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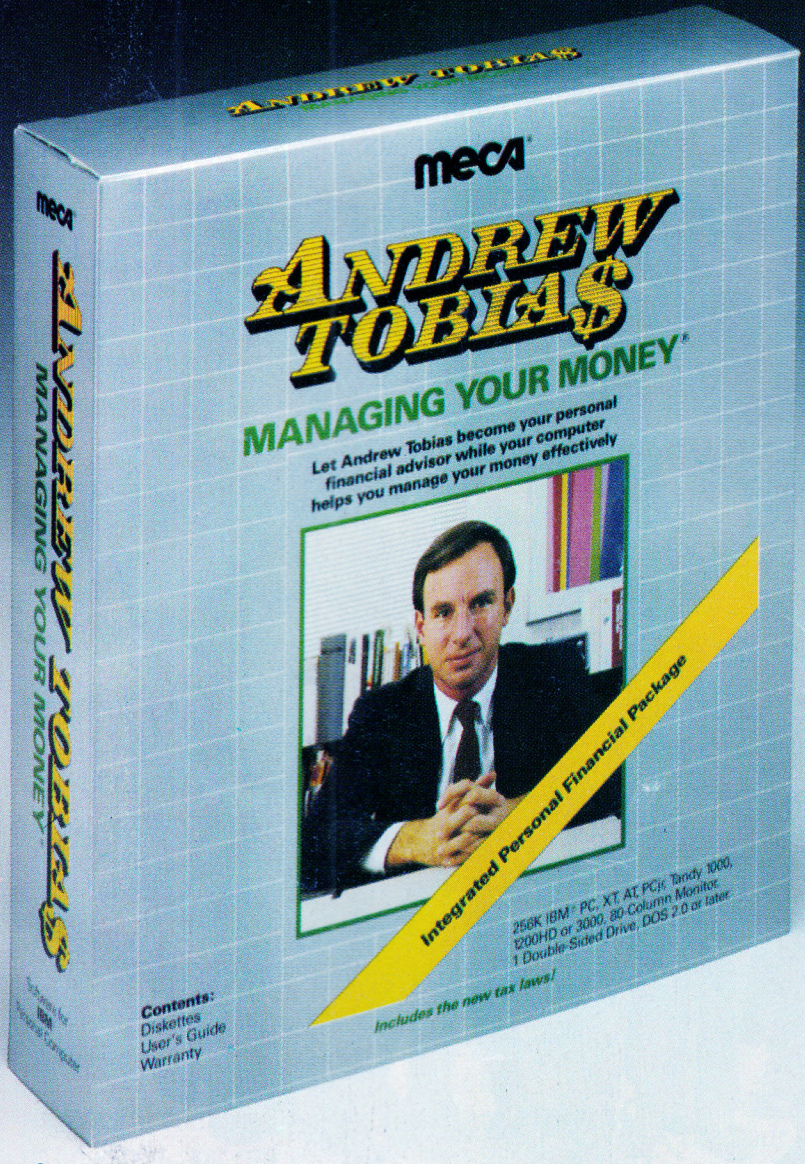

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New York Daily News, "Money Talks," October 4, 1987

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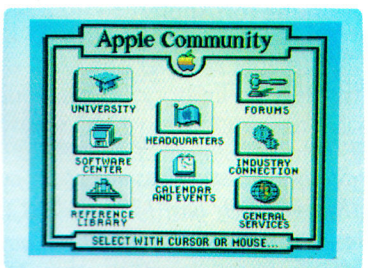
Or visit your favorite software publisher to try demo software and find out what else is new.

In the *Software Center* you can enhance your own library by downloading hundreds of public domain and shareware programs from business applications to educational games.



There are online forums to attend, where you can learn in the presence of computer masters. Whether you're a novice or an expert, you can get advice from the pros on the tricks and subtleties of software programs that run on Apple computers.

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**"Any modem" is defined as a 300, 1200, or 2400 baud Hayes-compatible, Apple-compatible modem.
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Recipe for Success

by William P. Kennedy, Ph.D., Technical Editor

New-Wave Cooking

Can I use my 5¼-inch-disk, DOS 3.3 version of Pinpoint Publishing's Micro Cookbook on a 3½-inch drive? Right now I get only about 15 recipes on a single disk, but I understand ProDOS will let me put many more on the 3½-inch disk. How do I change my DOS 3.3 files and programs to ProDOS?

Michael J. Hull
APO NY

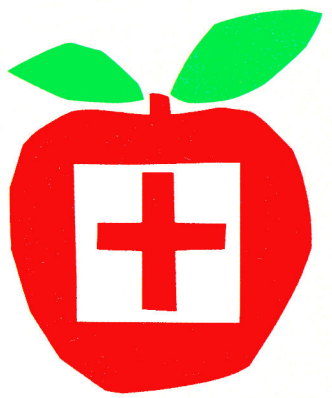
How's this recipe, Michael? Assemble the following ingredients: original Micro Cookbook disk, a piece of note paper, a personal or bank check, and a disk mailer.

On the note paper write your name and address and explain that you want the latest ProDOS version of Micro Cookbook as well as a copy of the company's DOS 3.3-to-ProDOS recipe-file converter program. Make out the check for $25 to Pinpoint Publishing. Insert disk, check, and note into mailer and address it to Pinpoint Publishing, 5865 Doyle Street, Suite 112, Emeryville, CA 94608. Affix sufficient postage and mail.

Check mailbox until return package arrives. Your fresh copy of Micro Cookbook should boot on any ProDOS-compatible Apple II. Read and follow the directions carefully to use the accompanying conversion utility to change the recipes stored on your 5¼-inch, DOS 3.3 disks to ProDOS files on your 3½-inch disks.

Changing DOS 3.3 files to ProDOS is rather easy, but often not very productive. Several software publishers including Apple Computer provide CONVERT programs (Apple's is on its ProDOS User's Disk) that let you transform DOS 3.3 program, text, and binary files into ProDOS ones, and vice versa. That's the easy part.

In general, however, programs written for DOS 3.3 won't work without modification under ProDOS. Several disk commands are either incompatible or just don't exist for both operating systems. Also, as is the case with Micro Cookbook, data files may be arranged differently under DOS 3.3 versus ProDOS. Hence the need for specialized software-conversion utilities.



"Fortunately, many software publishers have liberal upgrade policies."

Jan Muller

Fortunately, similar to Pinpoint, many publishers have liberal upgrade policies: Just send them your original disk to prove you purchased the software along with a nominal fee to cover their costs for replacement (usually $5–$20). Check with the individual publisher about programs you might want to upgrade.

Quit to Squirt

I recently came across a spelling-checker program that contains what appears to be a unique version of the ProDOS quit program, called "Squirt." Whenever you finish an application, Squirt lets you select the next program from a menu of names displayed on screen. That's much better than having to type a cryptic ProDOS pathname, as is the case in the standard ProDOS quit program.

I've put AppleWorks, the spelling checker, and a copy program all on one 3½-inch disk and move easily among those applications as well as those found on my other two disk drives without rebooting or typing a single pathname. Neat.

So, what's wrong with Squirt? Its host ProDOS version 1.1.1 won't read my GS' clock correctly. I've contacted Apple Computer and the company sent me ProDOS version 1.4, which works fine with the GS clock. Great—but no Squirt! How can I update ProDOS without losing Squirt? Is there anything else out there like Squirt? Who is Steve Stephenson (his name appears on the Squirt-ProDOS title screen) and why isn't he making his fortune working for Apple?

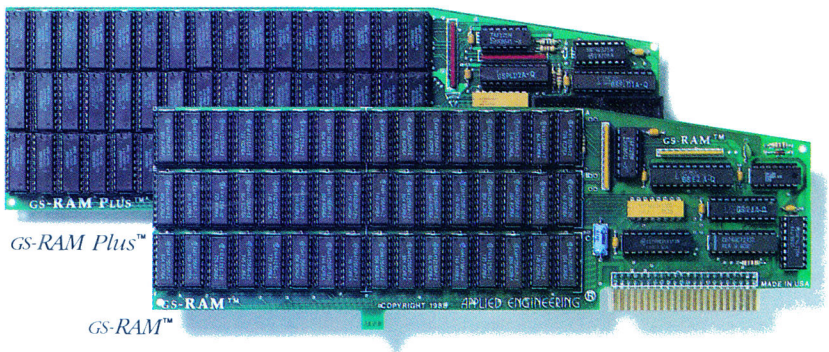
Al Youberg
Gallup, NM

Squirt is indeed the masterly handiwork of Steve Stephenson, who owns and operates Synesis Systems, P.O. Box 1308, Gilbert, AZ 85234. Send him $8.50 and he'll put a copy of Squirt in the return mail that'll work just fine with your GS and ProDOS version 1.4.

Squirt, as you have observed, Al, takes the guesswork out of ending one ProDOS application and starting another. It works by supplanting Apple's own bare-bones ProDOS "quit" routine, which the software calls automatically whenever an application's execution finishes.

You also can find Squirt as a licensed component of ProDOS on several publishers' products, including those available from Pinpoint and, perhaps, the anonymous spelling checker you mentioned in your letter. Otherwise, Squirt's available as "shareware"—a program copied and distributed by users or downloaded from a bulletin board via modem. The authors ►

Applied Engineering made an extra effort to make GS-RAM™ and GS-RAM Plus™ DMA compatible.



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of shareware, as opposed to "freeware," expect that you'll send them a nominal fee ($7.50 for Squirt) if you use their products. It'd be great to see folks like Steve earn their living through such excellent shareware products.

Contrary to popular myth, shareware authors aren't greedy—and they certainly aren't rich. In fact, if those 20 users who haven't paid for their shareware for every one who has would "ante up," guys like Steve would make enough to finance the next great shareware product. That way we'd all benefit, wouldn't we?

Bird's Better Bye, by Alan Bird, is another example of a useful application selector née ProDOS quit routine. It comes bundled with all Beagle Bros products. Other enhanced, albeit less "intelligent," quit routines are also available as "freeware." Check your local bulletin boards or consult your favorite "techie."

Quickies

Thanks to all who have shared their helpful hints with us. How about the rest of you? We're interested in how you make life with your Apple a little easier. Send your quickie tip to me, ***Bill Kennedy,*** inCider, *80 Elm Street, Peterborough, NH 03458. It's not every day you see your name in print!*

Transfer Bird's Better Bye (BBB) from ProDOS 1.1.1 to ProDOS 1.3: BLOAD PRODOS,A$2000, TSYS containing BBB. From the monitor, type 1000<5700.12FFM to isolate the BBB code. BLOAD PRODOS,A$2000,TSYS version 1.3 not containing BBB. Again from the monitor, type 5900<1000.12FFM to append BBB to ProDOS 1.3. Then BSAVE PRODOS,A$2000,TSYS. BBB'll be there the next time you boot the disk.

—Mike Jetzer, Plymouth, MI

Listen to an audio tape on your Apple IIe/II Plus speaker. Type in the following code from the monitor:

300: AD 60 C0 30 FB AD 30 C0
308: AD 30 C0 4C 00 03

Connect the cassette player to the cassette input port, CALL 768 from BASIC (or type 300G from the monitor), and press the PLAY button. Sound juicy?

—Ron Marmon, Hertzeliya, Israel

Who knows? Type in the following from the monitor:

300:2C 56 C0 2C 50 C0 EA
2C 51 C0 4C 03 03

Fill the screen with text. Then use 300G or CALL 768 to execute the program. Displays 80-column characters and "double" low-resolution graphics on a IIe even if you don't have an 80-column card. Results are unpredictable for other configurations.

—Benjamin Liblit, New Milford, NJ

Get an I/O or bad-track error when using Copy II Plus to format a new disk? Use that disk to verify the drive speed for about five seconds, then try formatting it again. If it still doesn't work, give it to the dog to chew.

—Jonathan Bourget, Vevey, Switzerland

GS Over There

I have an Apple IIGS with two 3½-inch drives, a 5¼-inch drive, and an ImageWriter II printer. I'm moving to Norway soon. Will my system work on Europe's 50Hz/220VAC power? What alterations or equipment will I need?

Steinulf Listerud
Houston, TX

Apple Computer had the "global" foresight to design most of its products for use at home and abroad. Your GS, drives, and Apple RGB monitor are included. The ImageWriter II, unless it's the international version, generally can't be used overseas. Contact your dealer for a possible exchange of equipment.

To get the "overseas-compatible" Apple equipment to work outside the USA or Canada, you need to know the voltage (V) and frequency in cycles per second (Hz) of the alternating current (AC) you'll be using to power your computer and peripherals. If the current at your source is DC (direct current—living in the "bush," are we?) you're pretty much out of luck.

In the USA and Canada, the AC current ratings are standard: 110VAC at 60Hz. As your letter indicates, Steinulf, Norway uses 220VAC-at-50Hz line-current standards, as do most European, Asian, and African nations.

To achieve the proper voltage for your GS and monitor, buy a "grounded stepdown isolation" transformer (commonly found in any good consumer-electronics shop), which will convert the 220VAC to 110VAC. The grounding and isolation features protect you and your computer. Don't settle for less. A 500-watt unit should cost around $60 and be sufficient to power your complete system.

The GS and RGB monitor accept either 60 or 50Hz. Just set the appropriate "-Hertz" value (50 or 60) in the GS' Control Panel "Display" option.

For other equipment, check first with your dealer about compatibility and purchase only the best voltage-converter equipment before attempting to use it outside the USA or Canada.

GS to Mac and Back

I have a Macintosh Plus at work and a IIGS at home. Can I create/edit files that'll work on both machines? In particular, can the GS use graphics created on the Mac and vice versa?

Tom Jelinek
Trumbull, CT

Translation and transportation of Macintosh into ProDOS and even MS-DOS files can be a snap with the Apple File Exchange (AFE) program. AFE is found on the Macintosh utilities disk that came with your CPU.

Unfortunately, AFE is currently rather limited. First, the program runs only on the Mac, so you'll have to do all file translations on that machine.

Also, while AFE expects MS-DOS files on a double-sided 5¼-inch disk, ProDOS (GS) files need to be on a 3½-inch disk.

Finally, the current set of translation tools doesn't include graphics. So, while you can copy the file from the Mac to ProDOS and back, you won't be able to do anything with it.

Not to worry: Most of the AFE translators were and will continue to be produced by third-party (non-Apple) developers. As the need arises, so will the software. I'll keep an eye out for such special Mac-to/from-ProDOS translators. Let me know if you find any and I'll pass along the information in the Clinic "Quickies."

Just think, though: Create a MacPaint file this afternoon and finish it late tonight on your GS using PaintWorks. Maybe that's why those translators haven't been programmed. ■

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.*

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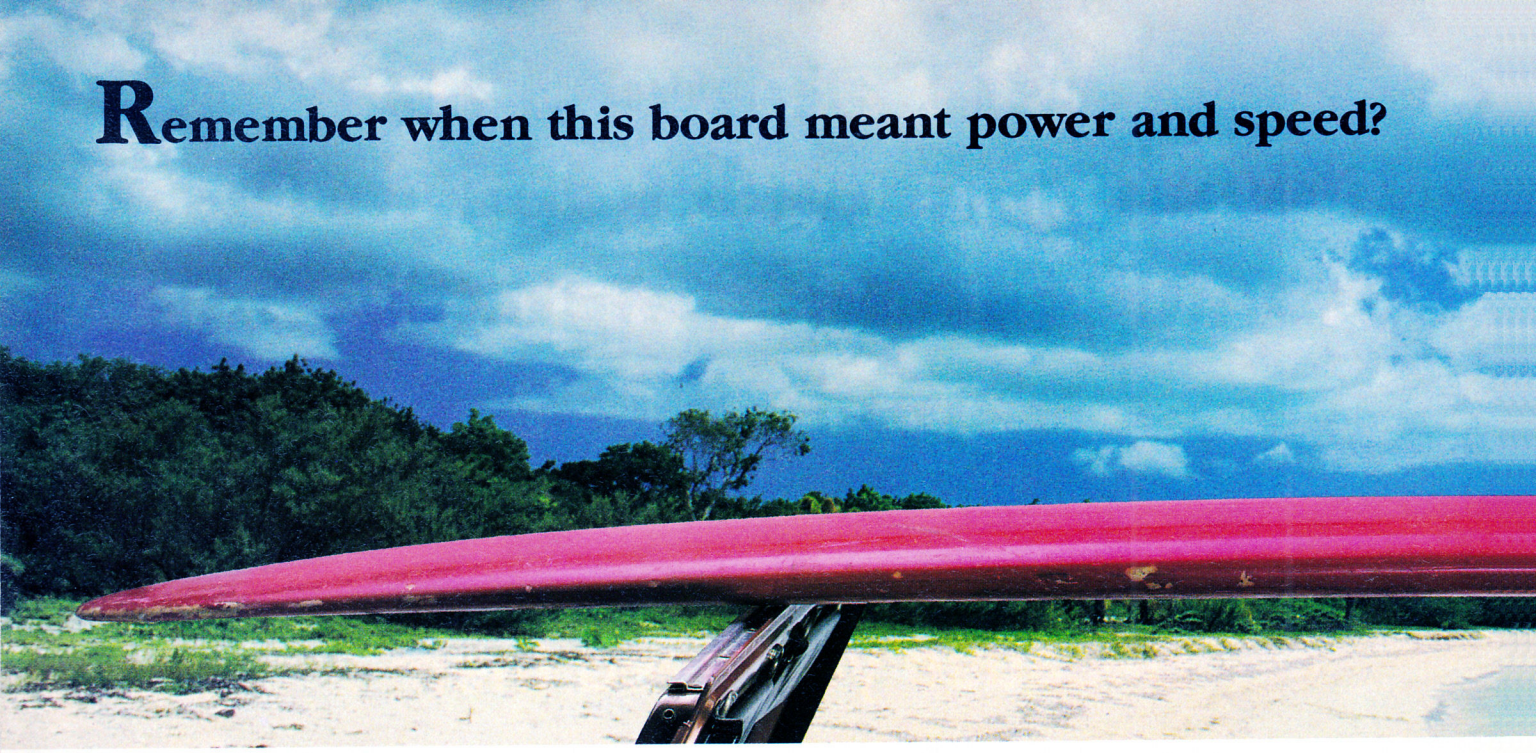
Remember when this board meant power and speed?



A majestic nine feet ten inches long and a shade under fifty pounds, the 1966 Big Boy surfboard represented the epitome of power and speed. Today, there's AE's new RamKeeper™.

Imagine. 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."

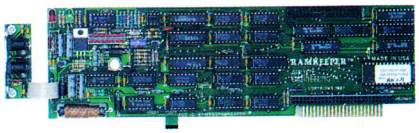
Applied Engineering's RamKeeper. A system that works like a hard disk, only better. It retains stored programs *and* data while your computer is turned off (like a hard disk), but gets up and running five times faster. RamKeeper is solid state, has no moving parts and, unlike a hard disk, has no heads 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 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.



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

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 efficiency 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.

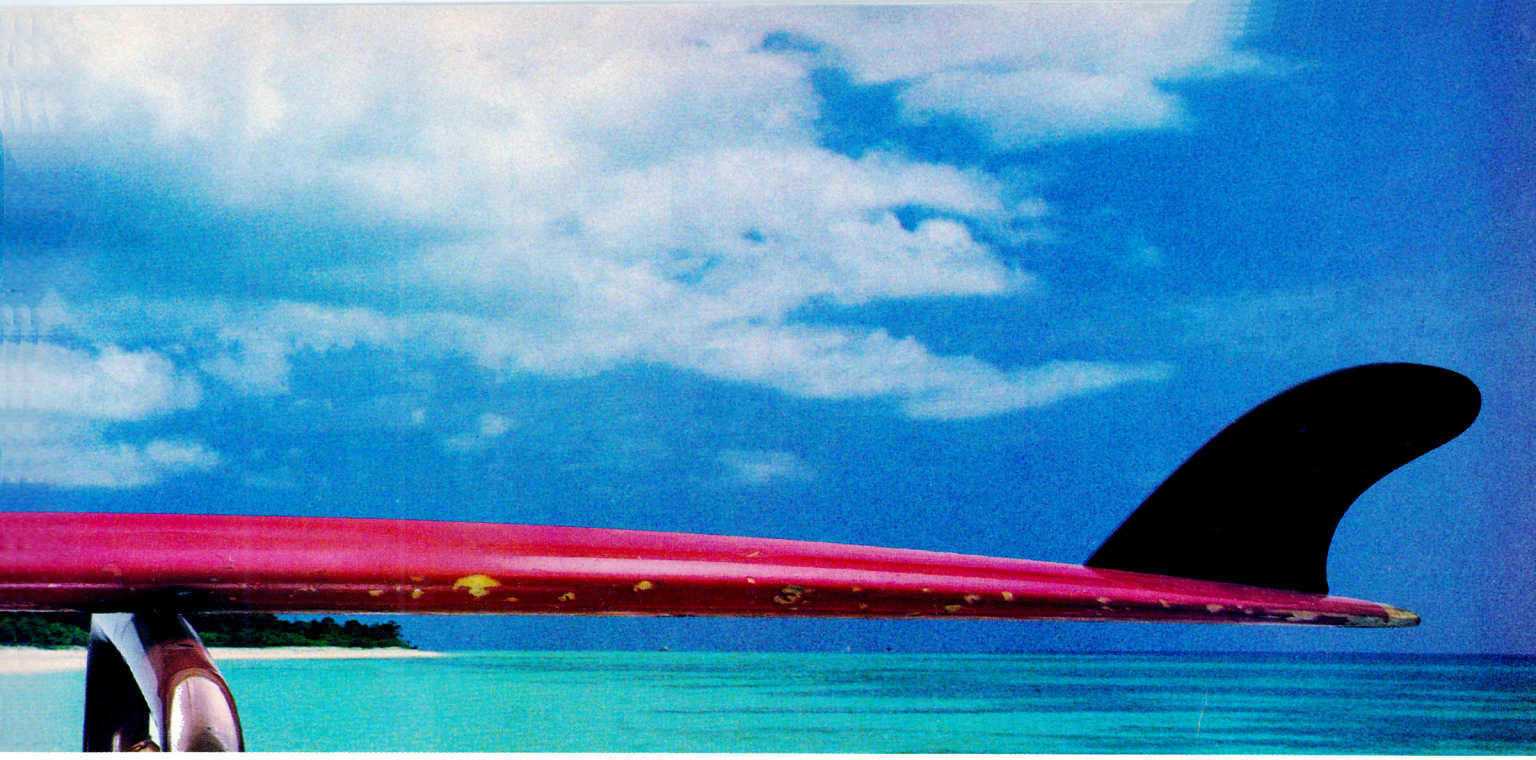
Makes all your memory usable memory.

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 Kilobytes 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.

Prices subject to change without notice. Brands and product names are registered trademarks of their respective holders.



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.

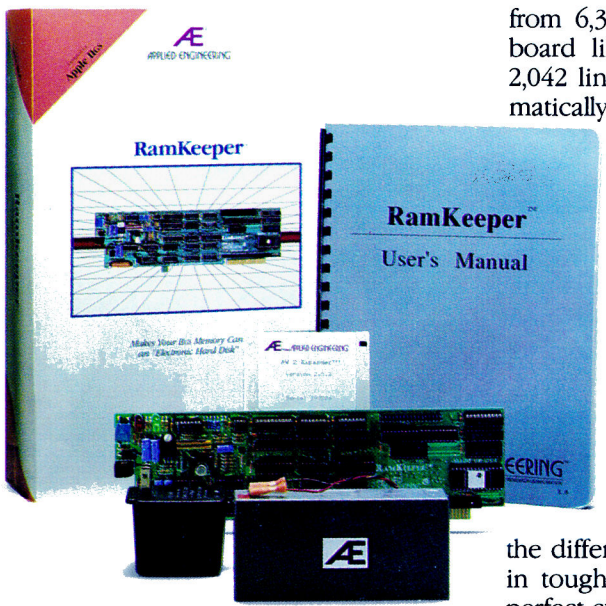
Verifies data security.

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, other use the shorter-life Ni-Cads and charge extra for them
- 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



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

- 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.* That's the difference between paddling out in tough chop and surfing in on a perfect curl.

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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Paintworks Gold; Managing Your Money 3.0; FingerPrint GSi; Mavis Beacon Teaches Typing 1.5; At a Glance; Games Editors Play: Anchorman, Club Backgammon, Soko-Ban, Short Takes

The Golden Palette

My 7-year-old son happened to wander past the computer one day when I was first experimenting with Paintworks Gold. Attracted by the bright colors on screen, he asked whether he could draw a picture. I watched in amazement as he pointed and clicked the mouse on the fattest line in the border palette, selected the gray from the color/pattern palette, and within moments after sitting down at the computer etched a ferocious-looking shark.

When the outline of the fish was complete, it was automatically filled in with the gray color he had selected. To finish up, he chose another color, clicked on the paintbrush icon from the toolbox, and gave his shark a big blue eye. Unfortunately, in my hurried efforts to get the program up and running, I neglected to format a data disk, so we couldn't save the picture: Paintworks Gold doesn't include a disk-formatting feature as one of its many options.

You'll certainly appreciate the power of the GS' enhanced graphics after using Paintworks Gold. This full-featured paint program is designed to bring out your creative talents in the uninhibited environment of computer art. What can you say about a program sophisticated enough to satisfy your need for stylized detail, yet simple enough to stimulate the creativity of a young child?

EXTRA EXTRAS

Paintworks Gold is currently the "Cadillac" of the GS paint circuit. True, its start-up screen resembles the work areas of other GS paint programs and many of its features are paint-program "standards." It also uses the Apple Human Interface with menu bar, pull-down menus, dialog boxes, alert boxes, icons, and point-and-click mouse control—the hallmark of "true" GS software—but its numerous other features set Paintworks Gold apart.

After spending some time with Paintworks Gold, it becomes clear that this program is capable of much more than simple two-dimensional painting. Several tools let you play with perspective, for instance. By changing the angle from which you view an image, you can manipulate object position and shape for some interesting three-dimensional effects. The art disk that comes with Paintworks Gold contains a number of files for 3-D experimentation.

The menu bar stretches across the top of the drawing board to display a number of functions to create new files, open existing files, and save your work. There's an autoload feature, too, which comes in handy if you know you're going to be working on a single picture for an extended period of time. If you choose a picture for autoload, it will appear on the screen automatically the next time you start the program.

Other functions accessible from pull-down menus include cutting, copying, or pasting your pictures, mixing colors, flipping and rotating images, and bending or distorting them for special effects. If you want to do animation, Paintworks Gold lets you compress a series of individually drawn pictures into a single file. Number each picture; when animation begins, it runs through the sequence until you stop it.

You can also create animation by color cycling. In this case, the software simulates animation by cycling through a ►

PAINTWORKS GOLD

Activision/Mediagenic Inc., 3885 Bohannon Drive, Menlo Park, CA 94025, (415) 329-7699
Paint program with simple animation capabilities; Apple IIGS with 1.25 megabytes, color monitor, new GS ROM and video chips
$99.95
Rating: ■■■■

inCider's Ratings

Excellent—remarkable, a must buy	■■■■■
Very good—impressive and recommended	■■■■
Good—average, solid performance	■■■
Fair—flawed but adequate	■■
Poor—unacceptable or unusable	■

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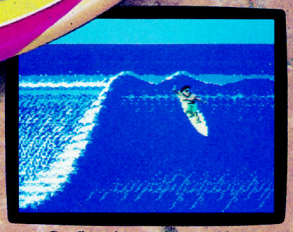


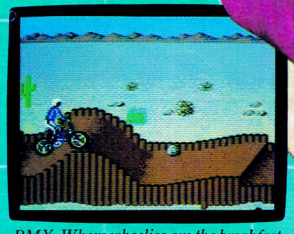
Surfing. A sport invented by half-baked Banzais with a fondness for ripping, grinding, and shredding.

It ain't beach blanket bingo. These are radical games. Games that take the honorable tradition of *Summer Games™ I and II, Winter Games,™* and *World Games,™* wax it down and load it on the roof.

Try shredding the face of a totally tubular wave. Join the airforce in a BMX bike race. Screech around on skates and then rocket off the skateboard ramp.

You'll be playing for sponsors like Ocean Pacific, NHS Santa Cruz, CASIO, Costa Del Mar, Kawasaki, and Spinjammer. For trophies and an overall championship.

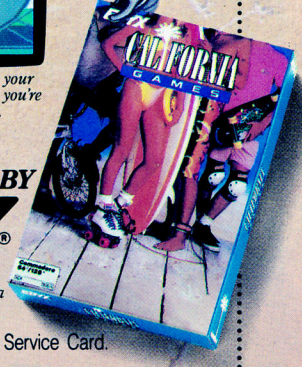
So get air. Go crazy. Welcome to the state of California.



BMX. Where wheelies are the breakfast of champions. And everyone else eats dirt.

Slalom the boardwalk obstacle course on roller skates.

Launch a few feet off-the-lip with your skateboard tucked high. And while you're up there, dance for the crowd.



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At a Glance

Zip Chip (September 1988, p. 28, by Paul Statt), Zip Technology, 11340 West Olympic Boulevard, Los Angeles, CA 90064, (213) 473-7662, approximately $179 (retail price undetermined at press time)
Rating: ■■■■

The wait for the Zip Chip was frustrating, but now it's over. The Zip Chip is here and it works. This microprocessor chip replaces the 6502 or 65C02 inside your Apple and makes your machine compute four times faster.

The Zip Chip uses RAM caching to keep power requirements low and VLSI (very-large-scale integration) to fit the needed RAM on a single chip. The more your application uses RAM, the faster the Zip Chip will make it fly. Any accelerator has to slow down, however, to let the computer report results to the video display or printer, to get information from the keyboard or mouse, and so on.

The Zip Chip's documentation is sketchy but adequate; the technical-support staff is able and willing to help with problems.

Where in Europe Is Carmen Sandiego? (September 1988, p. 40, by Eric Grevstad), Broderbund Software Inc., 17 Paul Drive, San Rafael, CA 94903-2101, (415) 492-3200, $44.95
Rating: ■■■■

Carmen Sandiego is on the loose again. Where in Europe follows the same basic plot as its predecessors, Where in the World and Where in the USA. Employed as a detective, you're sent off to the Continent after a mystery villain. At each stop along the route, you'll learn about the country you're visiting and pick up clues to the culprit's whereabouts.

You'll receive a map and an atlas, but the descriptions of the bandits are skimpy. The menu choices have been redesigned, combining See Connections and Depart by Plane under the logical Go to Airport. The Crime Lab also has a new feature: a computer database that helps you pick countries based on up to three criteria.

Where in Europe Is Carmen Sandiego? is a welcome addition. It should be as big a hit as the first two games in the series.

GEOS (September 1988, p. 31, by Tim Walsh), Berkeley Softworks, 2150 Shattuck Avenue, Berkeley, CA 94704, (415) 644-0883, $129.95
Rating: ■■■■

GEOS is Berkeley Softworks' 8-bit answer to the graphics environment you'll enounter in software designed for the Macintosh and the GS: a user-interface system consisting of screen icons you indicate with a pointer and activate by clicking a mouse button or other input device.

The GEOS system comes on three double-sided 5¼-inch floppies. The first disk contains the operating-system boot program and the geoWrite word processor, while the second disk holds a backup of the operating system and the geoPaint drawing program. The third disk contains a dictionary and spelling checker.

GEOS can be a little overwhelming—especially for new users. It's a large package with a lot of programs, procedures, and terminology. The *User's Manual*, however, is thorough, methodical, and 269 pages long.

With geoPaint, you can create finely detailed sketches with the wide range of brushes and fill patterns at your disposal. GeoWrite is more limited; you can't type faster than 30 words a minute. Overall, GEOS is a reliable software package that will complement any Apple IIc or IIe.

List Plus (September 1988, p. 34, by Owen Linzmayer), Activision/Mediagenic, 3885 Bohannon Drive, Menlo Park, CA 94025, (415) 329-0500, $99.95
Rating: ■■■■

List Plus is a Macintosh-style database manager and report generator for the Apple IIGS. It comes on a single 3½-inch disk and requires a minimum of 768K. The total number of possible records in a List Plus database is limited only by the amount of free memory in your Apple.

List Plus can display your data in either index-card or spreadsheet format. You can rearrange your list easily with the cut and paste options in the edit menu. You can use relational operators to pick out records featuring specific attributes (sales field *more than $500* and credit field *good*, for example). You can sort a list on any field. The program can also perform simple calculations on columns.

The List Plus documentation is excellent, including sample databases and a "guided tour." The program can read AppleWorks files directly, converting them to List Plus format as they load. Unfortunately, all near-letter-quality hardcopy is produced in graphics mode: You can't change the style or size of the font, and the printer drivers are very slow. You can avoid these problems by printing in draft mode. Overall, List Plus is powerful enough to satisfy all but the most demanding user.

WordPerfect IIGS 2.0 (July 1988, p. 28, by Cynthia Field), WordPerfect Corporation, 288 West Center Street, Orem, UT 84057, (801) 225-5000, $179
Rating: ■■■■

This is high-octane word-processing software worth taking out for a test drive. WordPerfect GS is designed for professional authors and businesspeople; it includes more than 100 features and numerous formatting options. Learning the program can be daunting.

WordPerfect GS includes built-in scroll bars, dialog boxes, option buttons, mouse support, and pull-down menus. Power users can choose a third alternative—memorizing keyboard-equivalent commands. Instead of using the mouse to pull down the File menu and click on "Save as," or typing Control-Save A Return to go through the Help menu's feature search, simply press the apple-S combination. You'll have to decide for yourself which interface works best for you.

WordPerfect GS features a large spelling checker (including word count) and a thesaurus. The program also lets you create and work with macros. In addition, WordPerfect GS supports plenty of printer alternatives to the ImageWriter II. It offers WYSIWYG (what you see is what you get) screen displays, although it doesn't support fancy fonts or color printing.

WordPerfect GS has lots of wonderful features, but it will challenge you to negotiate a steep learning curve.

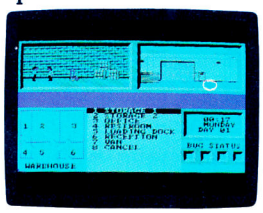
The Print Shop IIGS (March 1988, p. 28, by Cynthia Field), Broderbund Software, 17 Paul Drive, San Rafael, CA 94903, (415) 492-3200, $59.95
Rating: ■■■■■

The Print Shop is back. The GS 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. You can speed up the selection of your designs by choosing them by number. You can print text in black, purple, blue, green, yellow, orange, red, and "rainbow."

Creating signs, letterheads, banners, and cards is still easy. Use predrawn letterhead and banner images, or use the Graphic Editor to modify and create your own. Printing is also simple. 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 the printouts are among the best available. Print Shop GS is better than ever.□

TAKE THE LAW INTO YOUR OWN HANDS.

What can you do about the drug problem in America? Play *L.A. Crackdown.* That's what. You're the veteran detective. Your assignment is to uncover a major ring bent on distributing an evil synthetic drug.



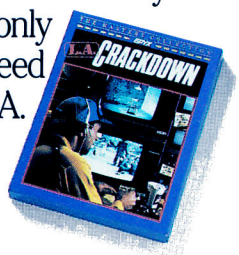
You can bug the thugs and watch the warehouse, both at the same time.

You've got the highest of high-tech surveillance vans to work from. You've also got a rookie to work with. We're talking "rookie" rookie. Zero experience.

You'll need to architect his every move. Watch him photograph clues. Plant bugs. Tail suspects. And question everyone from seedy thugs and crooked chemists to slick international heavies.

You'll also need to draw on every strategy brain cell available. If you're not thinking every minute, you might just spend all evening waiting on a street corner for a suspect who's never coming.

L.A. Crackdown. If you think your nervous system can handle the surprise action and tricky mental clues, there's only one thing you need to do. Move to L.A.



L.A. CRACKDOWN BY EPYX®

Commodore 64/128, IBM & compatibles, Apple II & compatibles

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number of color sets rather than going through a compressed file of individually linked pictures. Paintworks Gold lets you design up to four sets of colors, each holding 2–16 hues. By adjusting the kind and amount of color in each set, you can blend tones and create a gradient. When you select cycle timing from the animation menu, you set the speed at which the program cycles through your chosen color sets. There are 32 speed settings.

COLOR TRICKS

Many people find it difficult to lift objects from the "canvas" of a paint program and place them elsewhere on screen. When painted images are moved, they usually leave a hole in the drawing where they used to be. One innovative feature of Paintworks Gold is "slippy" color. If you select a background color as a slippy, the lasso tool can't pick it up. It slips right through the loop, letting you move your object without incurring unwanted changes.

Other color tricks include masking and transparencies. When you mask a color, you can't paint over it or change it in any other way. Objects superimposed on a masked color appear to be placed beneath it. Conversely, when you make a color transparent, it won't mask an object it covers. Instead, it lets that object show through.

In addition to the menu bar across the top of the screen, there's a paint toolbox extending down the left side with 18 features. Many of these are similar to those found in other paint programs. The lasso and marker box let you select an image to be moved, copied, or cut. The hand icon is suitable for moving your drawing around the easel. The text icon lets you activate the keyboard to type letters or words onto the canvas.

You can use the pencil to draw a thin line, or double-click on the paintbrush icon to select from 32 brush shapes, including broken lines. Select the paint bucket to fill an enclosed area with a color or pattern, the spray can to spray a color or pattern, and the unique cotton tool to achieve a smearing, shading, or smoothing effect.

"Paintworks Gold emphasizes that the G in GS stands for graphics. It's destined to become a classic."

The usual options are available for generating geometric forms such as straight lines, rectangles or squares (with or without rounded edges), ovals, arcs, polygons, and even free-form shapes. You determine the width of the straight line or the shape outline by choosing a border from the border palette. Once completed, the shape automatically fills in with a chosen color. If you'd like the shape to remain transparent, select the cell marked with an asterisk from the color window. Of course, if you don't like what you see, you can always use the eraser or select the fatbits palette to edit your picture pixel by pixel.

The color-palette window runs along the bottom of the screen, showing 16 colors and 15 patterns. If you want to change the colors currently available in the palette, choose "edit color" from the color menu and experiment with the three vertical scroll bars. You can alter the intensity of the red, green, and blue in your working color; you can also change the brightness. The toolbox contains a search-color cursor tool to identify the parts of your drawing matching certain colors in the palette.

Paintworks Gold lets you work with a screen width of 640 pixels (high resolution) or 320 pixels (low resolution). The default is 320. If you select 640 mode (something to consider if you'll be incorporating a lot of text), your color palette will still contain 16 colors, but they'll be blended rather than true.

To look at your picture without interference from the menu bar, toolbox, or color window, all you have to do is press the spacebar. Paintworks Gold also lets you use a second drawing screen as page 2. You can treat it as a separate picture with different color palettes, or as an extension of page 1. In this case, the two pages would share the same color palette and resolution. Whatever your choice, you can cut and paste from one page to the other or superimpose the picture on page 1 on top of the image on page 2.

The accompanying art disk is another added benefit. It contains many of the work files referred to in the manual, as well as an abundance of images you can import into your own artistic designs.

When you want to print a hardcopy, you can select from a variety of fonts and type sizes. One way Paintworks Gold distinguishes itself from other programs is that it allows printing on the Epson series (operating in draft mode), as well as the ImageWriter II and LaserWriter. I believe it's the first Apple IIGS ProDOS 16 program to recognize a non-Apple printer.

SILVER AND GOLD

While Paintworks Gold is an improved version of its predecessor Paintworks Plus, Activision/Mediagenic intends to market both products. Your decision to go with one or the other will depend in part on price (Paintworks Gold costs $30 more), the amount of time you want to spend mastering the program (it offers more options and will take longer to learn), and perhaps most important, the amount of memory in your GS. Paintworks Gold requires 1.25 megabytes of RAM, but Paintworks Plus needs only 512K.

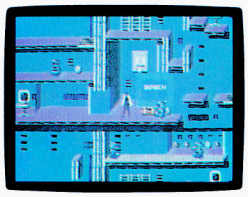
If you'd like to upgrade from Paintworks Plus or any other paint program to Paintworks Gold, send $43.50 (California residents add 6.5 percent sales tax) and the first page of your current paint-program manual to Mediagenic Upgrade Offer, P.O. Box T, Gilroy, CA 95021-2249.

Paintworks Gold emphasizes that the *G* in GS stands for *graphics*. It expands your capabilities by combining the features of standard programs with new painting options. Mediagenic's golden creation is destined to become a true GS classic.■

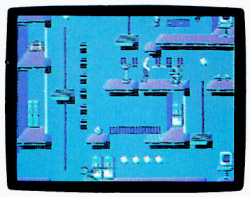
Carol S. Holzberg, Ph.D.
Shutesbury, MA

IF THIS IS THE FUTURE, THEN YOU'RE HISTORY.

Hold it. What's this? Human-seeking suicide robots? An evil mastermind bent on world annihilation?



There are 8 office towers to search, each with its own theme and level of difficulty.



Of course, Elvin's floor plans are almost as complicated as his global plans.

No wonder they call this mission impossible. Why, it's got even more strategy and action than the original top-selling Impossible Mission.™

The trick here is to collect the secret code numbers that will ultimately allow you to access Elvin's stronghold. And waste him before he wastes the world.

There are over 50 rooms to search for codes. Careful. The floors and catwalks in this place end a little abruptly. And of course, they're guarded by those pesky bots. But you've got an MIA9366B pocket computer to help you crack the security code. A working tape player to play music clues. And a map to show which towers you have or have not searched.

Go then. Elvin is preparing to launch his missile attack in less than ten hours. You must stop him. Or the world will be terminally late for dinner tonight.

IMPOSSIBLE MISSION II

Commodore 64/128, IBM & compatibles, Atari ST, Apple II & compatibles, Amiga

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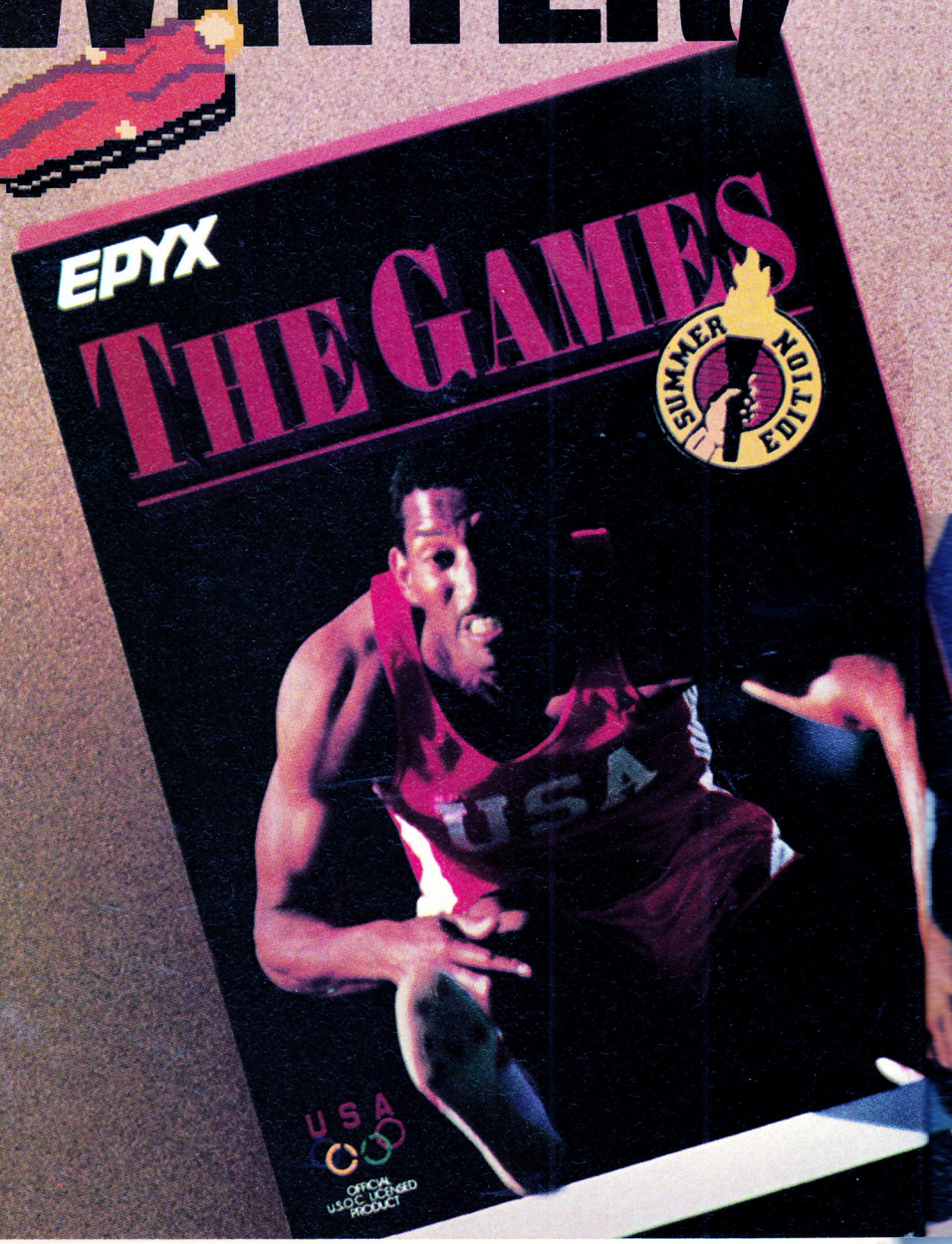
THE GAMES:™ SUMMER, WINTER,



You're in Seoul, Korea sweating alongside the world's greatest athletes. Or the Canadian Rockies facing finely-tuned challengers who've waited a lifetime for a shot at the gold.

You're geared up. You're set. You're playing The Games.

SUMMER EDITION:

Eight events that test your power, skill and guts.

Relive the heart pounding excitement experienced by the 1988 U.S. Olympic Team.

Sprint down a 110 meter track, clearing hurdles in a fraction of a second. Or jam your pole in the planting box and vault over a cross bar.

Hold a handstand in the Rings competition, straining every muscle in your arms. Follow up with a perfect triple twist in the diving event.

Then try for another medal or two in Sprint Cycling, HammerThrow, Uneven Parallel Bars or Archery. It's your chance to make history.

USA

The only computer games to earn an official license from the 1988 U.S. Olympic Team.

SPRING AND FALL.

WINTER EDITION:

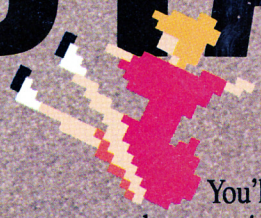
Set world records without leaving home.

Race down a snowy slope or jump off one. Ski a slalom or cross-country course. Speed skate, figure skate, cruise the luge at 95 mph. Then see what the judges think of your heroic efforts.

To keep your pulse racing regardless of temperature, The Games feature exciting sound effects, dramatic camera angles, first person views and 3-D imagery.

Plus the traditional pageantry — colorful flags, opening, closing and awards ceremonies — staged in realistic settings.

Take on the computer or your friends. (Up to eight can play, each representing a different country.) And to make the action even more heated, play with an EPYX high performance joystick.



You'll find that The Games will keep you in the mountains, in the water and on the edge of your seat all year long.

Commodore 64/128, Apple II & Compatibles, Macintosh, IBM & Compatibles, Amiga.

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Screens from Commodore and IBM.

Circle 204 on Reader Service Card.

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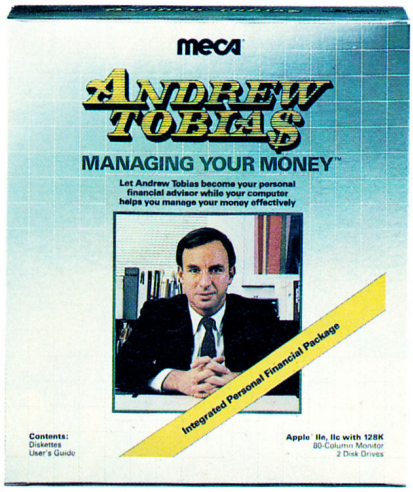
Money Matters

MANAGING YOUR MONEY 3.0

MECA Ventures Inc., 355 Riverside Avenue, Westport, CT 06880, (203) 222-9150
Financial-management program; Apple IIe, IIc, IIGS, 128K, two disk drives, 80-column monitor; hard drive or 3½-inch drive recommended
$149.95
Rating: ■■■■

When Managing Your Money first appeared, it drew rave reviews and quickly rose to the top of the best-selling-software lists. Here was a program that really did what it said it would, worked in a logical

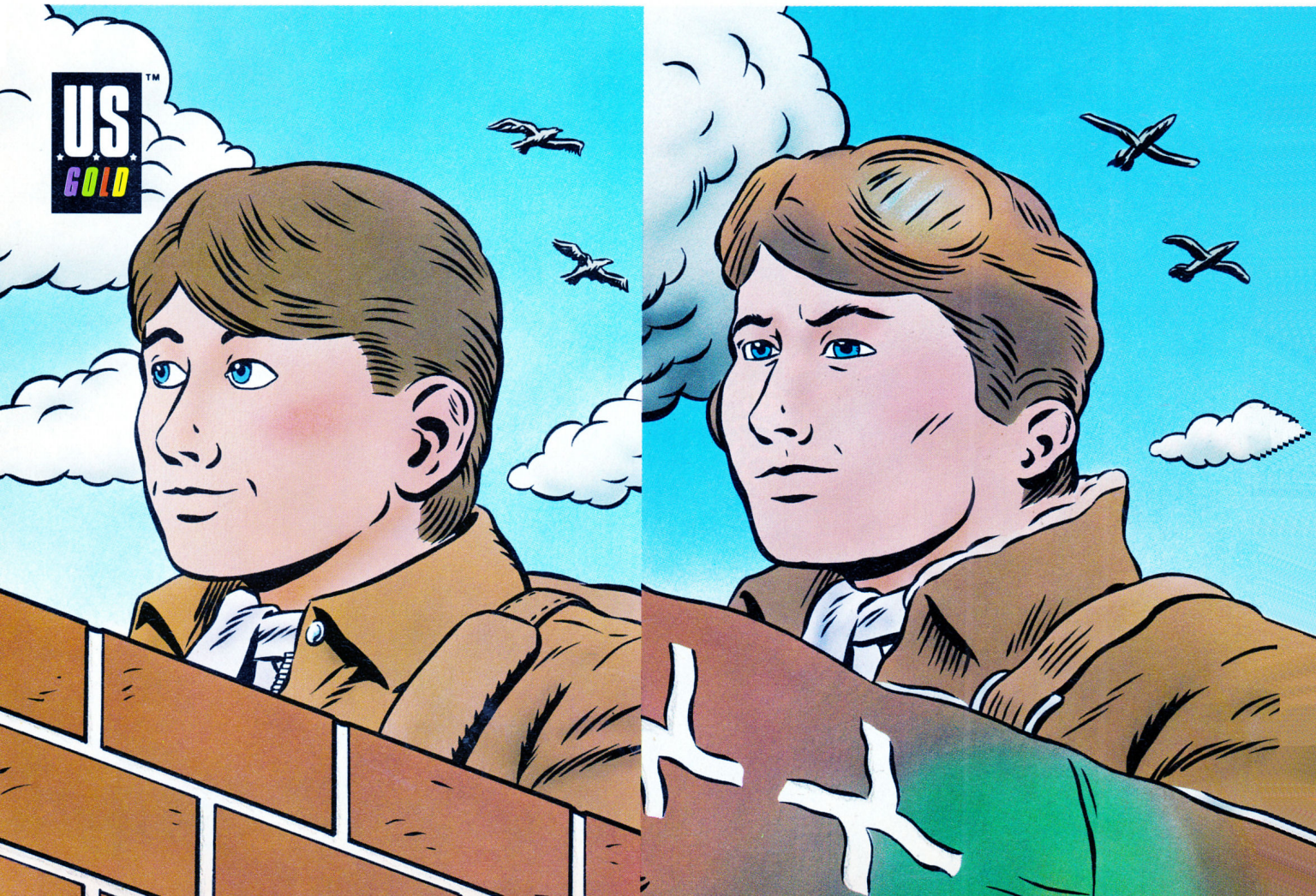


fashion, and, best of all, was easy and fun to use. You might not have any more money once you had entered all your figures into Managing Your Money's data files, but at least you knew where it had gone and what your budget forecast looked like.

The latest version of Managing Your Money (MYM) builds on the program's initial strengths and successes. MECA, the company that produces the program, and Andrew Tobias, its designer, have worked hard to bring MYM up to date: It now comes on both 3½- and 5¼-inch disks; you can now send your financial data to other programs, such as AppleWorks; and the latest tax laws have been incorporated. There's even a newsletter and update service to which you can subscribe, so your tax forecasts will always be current.

CHAPTER BY CHAPTER

The structure of Managing Your Money is similar to that of a book. Each disk is like a chapter as it focuses on one specific area—but there's one big difference. While a book can provide the instructions you need to put your financial matters in order, MYM not only tells you what to do, but gives you the tools to do it properly. ►



You might not save much time by letting the program write your checks, reconcile your checkbook, or calculate your budget. But you'll save time and effort in the long run, because every detail about the money you earned and the money you spent is distributed exactly as it should be. At the end of the year, the program summarizes all your transactions in as much detail as you need.

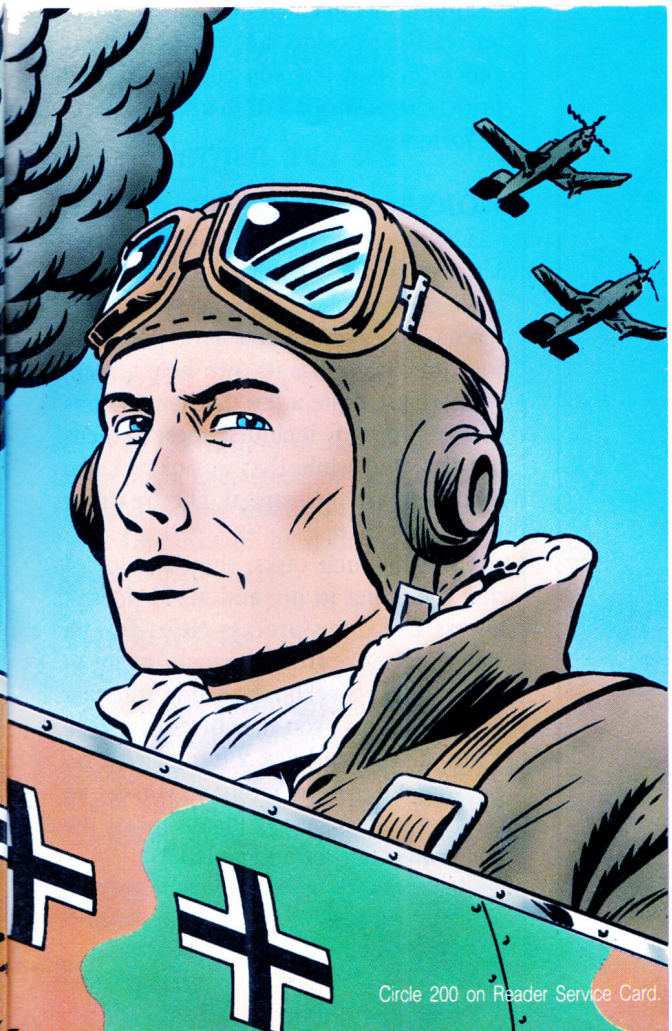
Managing Your Money comes on five disks. You copy both sides of all but one, so you end up with nine working disks. MYM is broken down into nine "chapters." The first is a good introduction to how things work and the figures the program sends from one section to another. Chapter 2 is a built-in note pad that automatically displays messages on screen reminding you of your mortgage, your anniversary, or whatever. Of course, you decide which messages appear and when. It's very flexible.

Chapter 3 is the heart of the program—this is where you manage your budget and checkbook data. When you write a check to make a home-mortgage payment, for example, that information is sent to your tax files (the interest is deductable); your checking-account balance is decreased by the amount of your check; the total of your mortgage loan is decreased by the principal payment; and so on.

This section provides for automatic payments; once you enter a creditor's name and address, the program will print checks when you want and remember all the details so you'll never have to enter them again. MYM makes it easy to use both program-generated and hand-written checks. Chapter 3 also tracks all your loans and handles variable-rate mortages (and the payments you make on them), your credit-card charges and payments, expense-account details, and other similar accounts.

Chapter 4 is a tax estimator. Fortunately, it's easy to adjust this part to compensate for the changes Congress makes to "simplify" the tax laws. This part of the program isn't designed to produce your tax forms (as is, for instance, HowardSoft's Tax Preparer), but rather to give you an overall guide to how much the government will nick you on April 15th.

Chapter 5 helps you calculate the amount of insurance you need, gives you advice on what type to buy, and suggests where to buy it least expensively. This is also where you record information about your homeowner, auto, and any other insurance policy you have, so it's all in one place. You can provide as much or as little detail as you need. For example, ►



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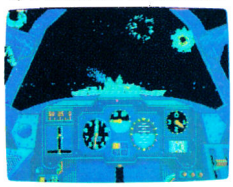

WELL CAPTAIN, IT LOOKS LIKE F-15 STRIKE EAGLE™ ISN'T SO STRIKING, AFTER ALL.

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Easy to use, fully detailed instrument panel	Of course	Nope
Look of enemy planes & ships	True to life	Stick figure
Pace of enemy attacks	Constant	Lagging
Takeoffs	Breathtaking	Nonexistent
Landings	Brace yourself	Limited

Note: Comparisons are based on current Apple, IBM, and Commodore 64/128 versions of the product.
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Chapter 6 is a financial calculator turned computer. It comes complete with real-world forms for figuring out things like payments, helping with lease-versus-buy decisions, determining how much you need to save each year so that your brood can go to college, and so on. All you do is fill in the blanks on the forms, so it's quick and easy to create various "what if" scenarios.

Chapter 7 keeps track of your stocks and mutual-fund shares, lets you know what kind of return you're getting on them, and so on. There's information and advice about tax-free and zero-coupon bonds, CDs, puts and calls, real estate, and other assorted investments. As with the insurance chapter, you can be as detailed and comprehensive (or as simplified) as you wish.

Chapter 8 gathers information from the other sections of the program and advises you on your net worth. When you write a check to pay for a birthday dress for your youngest daughter, your net worth drops by the amount of the check. When you purchase stock in Uncle Fred's new company, your net worth increases by the estimated value of that stock.

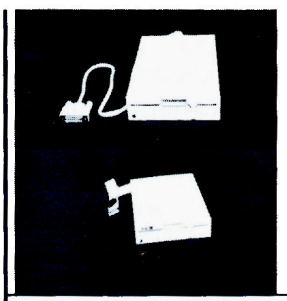
Chapter 9 provides a computerized card file, a place to store addresses and other information about friends, family, business associates—whatever you find useful. It can also retrieve and print selectively, so if you'd like the names and phone numbers of every friend you have in Chicago, MYM can instantly list them for you.

Finally, chapter 10 is not really a "chapter" in the software, but rather a report generator that lets you summarize and print your information in a wide variety of formats.

WORKING WITH MYM

This latest version of Managing Your Money includes a thick section at the back of the manual listing every help screen. Every screen you see as you work with the system has its own help screen, so there are quite a few. Earlier versions of the program included these screens on disk, and while that was okay, I like them better in the manual. They're easier to refer to there.

Using 5¼-inch disks, there's a lot of disk swapping to do, and MYM doesn't always make the process clear. For instance, to move from the main menu to your budget/checkbook section (the one you'll use most), you start by putting disk 1 into drive 1 and disk 2 into drive 2. So far, so good. After a moment, you get an on-screen message to "Please insert the current version of budget.DB."



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Because you're working with chapter 3, that's where you'd expect to find this file. But it isn't there—it's on disk 5. This reminder message also doesn't indicate the drive into which you're supposed to put disk 5. Try drive 1; it works. A few more seconds of disk whirring and the program asks you to please insert the current version of CHP.3. While that sounds like chapter 3, it's actually on disk 4, and again, it doesn't indicate a drive.

I'm probably being a little hard on the program here; the package does include a list of all disks and their respective files on pages 1-12 and 1-13 of the manual. So if you keep those pages handy, it takes only a second to figure out what's where. But clearer messages would be helpful.

MYM isn't always as speedy as I'd like it to be. Returning to the main menu from the budget/checkbook section takes about a minute and a half. Those of you with UniDisks or hard disks won't encounter these delays.

"You'll save time and effort in the long run, because every detail about the money you earned and the money you spent is distributed exactly as it should be."

THE BOTTOM LINE

Andrew Tobias, as always, is superb. His advice is unfailingly interesting and right on target. In all, version 3.0 of Managing Your Money is an effective, worthwhile, enjoyable way to keep track of where you spend your money.■

Gregory Glau
Prescott, AZ

Graphics Grabbing

FINGERPRINT GSi

Thirdware Computer Products, 4747 N.W. 72nd Avenue, Miami, FL 33166
Screen-dump graphics-utility card; Apple IIGS, compatible printer
$99
Rating: ■■■■

Have you ever seen an image on your monitor and wished you could save it quickly and easily by printing it? That's exactly what you can do with FingerPrint GSi, Thirdware's new graphics-utility card. The Apple IIe version has actually been around awhile, but now GS owners can also use this valuable graphics tool.

The phrase "quick and easy" applies to all aspects of FingerPrint GSi, from its installation to its operation. You can in- ►

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stall the card in as little as five minutes (most of that time spent removing and replacing the cover of the GS). The step-by-step instructions in the manual will help dispel some of the anxiety most people feel when they tinker inside their machines.

You can install the card in only one direction, so you needn't worry about putting FingerPrint GSi in backwards. While you can plug the card into any free slot, the manual recommends slot 3 because that position was previously reserved for the 80-column adapter normally installed in Apple IIes. Slot 3 is seldom, if ever, used by other GS cards.

The FingerPrint GSi card is *transparent*: The computer doesn't recognize that the card has been installed, nor does it need to. It won't interfere with machine operations or software programs.

Once you've inserted FingerPrint GSi into an appropriate slot, you simply thread the flat, blue ribbon cable out the front of the machine, attach the self-adhesive activator button (a red, one-inch-square, cardboard-like piece with a picture of a fingerprint on it) to the flat shelf on the GS, and replace the lid on your machine. At this point, you're almost ready to print your first screen dump.

You should run two installation tests before actually printing a screen. The first test assures you that you've installed FingerPrint GSi correctly by putting the FingerPrint menu on screen. The second test uses a selection from that menu to

make sure your printer is properly connected. If all's well, the message "This is the FingerPrint GSi test" will appear.

In the unlikely event that one or both of the tests indicate a problem, the manual troubleshoots you through a correction process. In 95 percent of these cases, fixing the card is a simple matter of adjusting a DIP switch on either the FingerPrint or your printer.

Now you're truly ready to print a screen. With FingerPrint GSi, one touch is all it takes (followed by a click of the mouse or a press of the return key). Load any program into your machine, find a screen you'd like reproduced on hardcopy, press the fingerprint on the activator button, click your mouse or hit Return, and your screen will start to print.

FINGERPRINTING

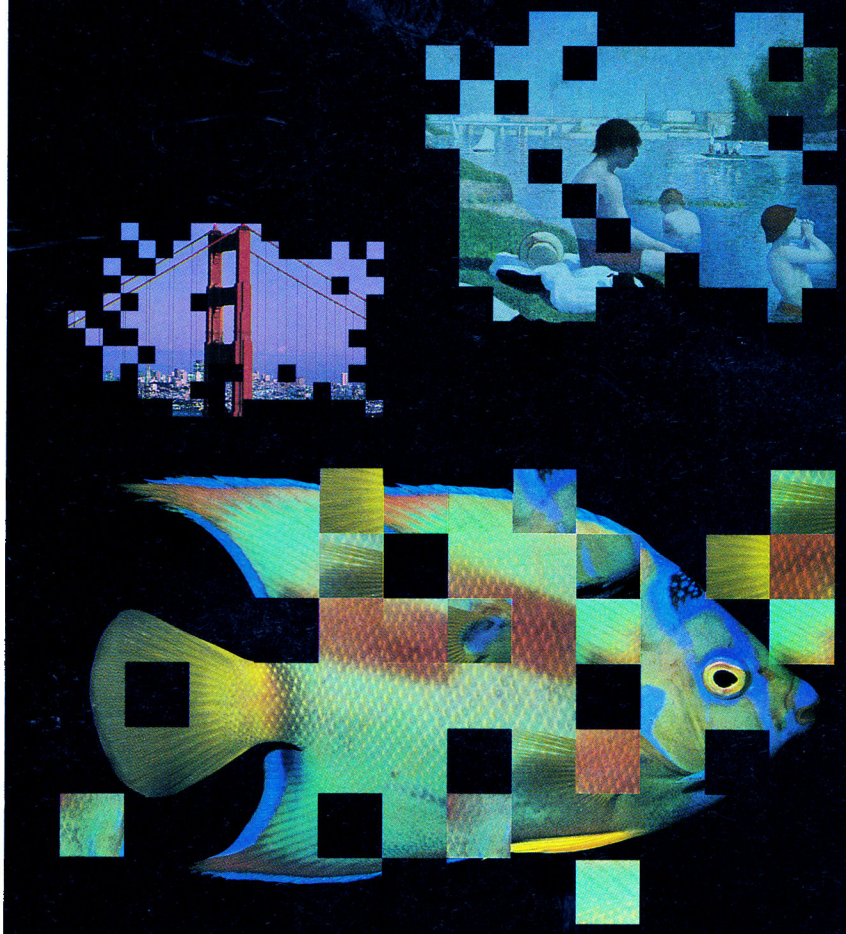
When you press the FingerPrint activator button, the FingerPrint menu appears on screen with the Print Screen option highlighted as the default selection. Click the mouse or press the Return key to start printing. Because of the simplicity of doing basic screen dumps, you'll soon want to explore all of FingerPrint's other options. FingerPrint GSi lets you manipulate the picture on your screen in a variety of ways before printing.

The Graphic Printing Tool option contains a seven-item submenu you'll find yourself using frequently. From this submenu, you can change from black-and-white printing to color printing, select colors, "zoom" in on your selection, or rotate it 90 degrees. The latter options are especially useful.

The Zoom command lets you enlarge the width and height of your picture up to eight times its original size. Because of certain programming techniques involving pixel density, some pictures on your screen print in direct proportion, while others print at only one-fourth their original size. The Zoom command assures you of a full-page image should you so desire.

The Rotate 90 command lets you print an image sideways. Not only does this let you print enlarged images in places you ►

Now you see it.



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Expanded RAM cards supported	Y	N	N
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Copy buffer	45K	17K	36K
Dial lists	unlimited	16	—
File transfer protocols	7	4	3
Copy files, Format disk	Y	N	N
Load/Save AppleWorks™ files	Y	N	N
Editor commands	42	12	14
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couldn't otherwise, it also lets you create banners.

Another option lets you crop a picture to virtually any size you want. The ability to select only a portion of a graphic gives you the freedom to customize materials to suit your individual needs. You can crop in two ways. First, you can use the Graphic Cropping option, which consists of moving and sizing a flexible box around the portion of the picture you want to dump. Or you could use the Coordinate Cropping option, which has the same effect, but uses X,Y coordinates to indicate the portion of the picture you want to print.

There is little difference between the two cropping methods. The advantage of using coordinate over graphic cropping is the exactness with which you can crop identical portions of different pictures. Simply set your x,y coordinates to the same values used previously, avoiding the trial and error you'd have to put up with using graphic cropping.

Once your picture is the color and size you want, FingerPrint GSi allows for certain page-formatting options. Left Margin lets you vary the column in which the printer will start typing. The Copies option allows for multiple printing of the same picture without redoing previous procedures. Printer Text lets you produce text in a variety of sizes and with a number of enhancements.

You can also add text to a picture with the Typewriter function, one of three utilities included on the GSi card. (The others are a calculator and a simple calendar.) The typewriter option is useful because it lets you print explanatory text along with the picture you've captured. It's a snap to position a graphic and then type text above, below, or beside it—headlines, captions, labels, or full paragraphs to enhance your FingerPrint creation.

Although you'll eventually want to dump your screen to a printer, you may want to save it to disk first. Then you could, for example, export it to a paint program like 816/Paint, or another graphics program, such as Print Shop.

You could modify the image with the sophisticated graphics tools available in those programs to create stationery, memo pads, posters, and so on.

Another reason for saving screen shots to disk is FingerPrint's slideshow program (not included with GSi), which links pictures together and presents them in slide-show fashion.

PRINT PRACTICALITY

Now all of this is well and good, but the question remains: How practical is a card of this type? More than you might think. If you're into any type of desktop publishing, consider the potential FingerPrint GSi offers. You could export a screen shot of a spreadsheet calculating batting averages to a sports newsletter, or use graphics from adventure games to enhance a fantasy magazine.

If you're in education, there are even more possibilities. One example mentioned in the manual perfectly illustrates the usefulness of FingerPrint GSi in the academic arena: Capture an image of the human body with the various organs labeled. Crop the image to get rid of the labels, then print the graphic of the body with lines pointing to the major organs. You've got a ready-made biology quiz.

Likewise, many educational programs fill the screen with problems to answer. Capture one of these screens and you have an instant worksheet at a touch of the FingerPrint activator button.

FingerPrint GSi is a useful, easy-to-use graphics card. It supports virtually all printers on the market and allows for complete control of the Apple IIGS serial ports or FingerPrint's compatible parallel interface. The card's use of pull-down menus, coupled with excellent documentation, makes FingerPrint an intuitive yet powerful utility. What's more, FingerPrint GSi is covered by a generous five-year warranty. If you need graphics, it's safe to say you need FingerPrint GSi.■

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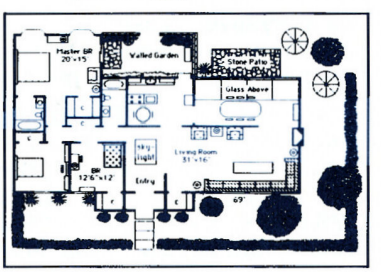

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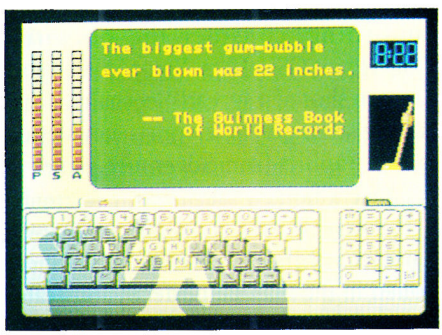

Do you stand in awe of those who type flawlessly while looking at a page off to the side of the keyboard? Are you among the many who believe that "spelling checkers" were invented to help poor typists, not weak spellers? If so, check out this new full-featured typing instructor for the Apple IIGS—Mavis Beacon Teaches Typing is sure to improve your keyboard skills.

THE FUNDAMENTALS

Mavis Beacon comes with a four-page primer on the program's operation and a manual that includes a marvelous chapter on the history of typewriting. The manual also lets you brush up on typing fundamentals, such as correct posture and finger position, keyboard basics, preparation of business letters, the Dvorak keyboard alternative, and common typing errors. The package even includes a Résumé Writer you can use when looking for a job.

The program itself sports a Macintosh-like user interface with pull-down menus, scroll bars, and dialog boxes; it includes lots of crisp, colorful graphics and a variety of lessons suitable for all levels of typists.

Circle 79 on Reader Service Card.

Mavis greets you with a dialog box offering three choices—Introduction, Help for New Users, and Start Program. After starting the program, you'll identify yourself so that Mavis can keep a record of your current status and cumulative progress. Type in your first and last names, your age group (under 9, 9–14, or over 14), typing skill (beginner, intermediate, or advanced), desired practice time (default time is 30 minutes), and target speed. Your personal record is kept on the data disk. When you quit the program, Mavis updates your file so that next time you can pick up where you left off.

Mavis uses a schoolhouse metaphor to teach typing fundamentals. The goals of each new lesson are explained on a chalkboard, and all instructions are presented in uppercase. This may not be the best approach to reinforce the reading skills of children younger than 14 or so, but it does make instructions easy to see. When younger children use the program, Mavis can present each lesson with minimal explanation to cut down on required reading.

New typing techniques are taught in a "classroom" on an on-screen keyboard that closely resembles the look and feel of the Apple IIGS keyboard. A pair of transparent hands rests in position on the home row. Words to be typed show up in yellow on the chalkboard. As you type, the letters appear in black if you're correct, red if you make a mistake. The hands type along with you to show correct finger position.

Drills give you practice on the keys. These exercises strive for accuracy—your speed score for these lessons isn't added to your record.

If you'd prefer to try something other than Mavis' lesson, select Alternative from the dialog box—check your typing progress on a number of graphs, get some extra "keys and fingers" practice, or sharpen your skills at the arcade race. You can even design a custom lesson. ►

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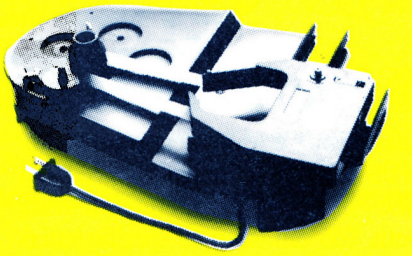

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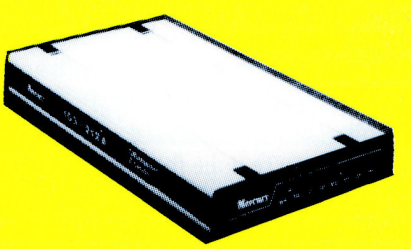

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Customizing a lesson lets you concentrate on improving the typing speed and accuracy of either your left or right hand, or both. You can focus on specific letters and symbols or go for Keyboard Hurdles—challenging letter combinations that make your fingers move and stretch all over the place. If you need to learn how to type on a Dvorak keyboard, pick that from the menu bar and all subsequent lessons will conform to that arrangement.

If you need a reminder of which finger to use on a specific key, select the Keys and Fingers tutorial from the menu bar. Press any key and Mavis responds by showing proper fingering. Pressing the escape key always returns you to what you were doing.

START YOUR ENGINES

If you get tired of those activities, head for the races where you'll have fun while you sharpen your typing skills. You sit behind the wheel of a blue racer and type words that appear as sky-writing messages. The letters and words you type appear on the dashboard of your car. The gauges on your dash check your typing speed and accuracy.

Your computer opponent is a red car traveling at the target speed of the lesson. If your typing speed is equal to or better than the target speed, the red racer is barely visible in your rear-view mirror. If you slow down or make too many errors, the red car moves up and begins to pull ahead. If you beat the target speed at the end of the race, you can set a higher speed goal.

PRACTICE MAKES PERFECT

From the classroom you proceed to the Workshop to practice your techniques. Monitors display your current speed and accuracy as you pound the keyboard. There's also a clock (analog or digital display) for optional timed lessons.

A metronome is set off to the right of the workshop screen. During early lessons, it teaches typing in rhythm. At low typing rates, keeping up with its rhythmic beat is easy, but at higher rates trying to match your keystrokes to its beat may reduce your accuracy. Lower the speed of the metronome or turn it off entirely.

GRAPH YOUR PROGRESS

More than 20 graphs chart your typing progress and display current and cumulative achievement. If you'd like more information about a particular graph, choose Explain from the graph menu. Graphs can be sorted five ways; you can choose the color of the bar display. While vertical bar graphs may not be the best way to inform you of your growing typing skills, they do let you know your percentage of correct typing for each key and the keys that need the most work.

Graphs show individual typing rates for each letter key (errors not taken into account) and adjusted typing speed per minute (subtracting one keystroke for each mistake). If your goal is increased speed and accuracy, though, adjusting your rate doesn't do anything about those errors you type.

HELP FOR NOVICES

A variety of help options are available throughout the program. New users can find out more about graph menus, proficient keys (keys you type at your target speed or better), temporary interruption of lessons, and changing lesson settings.

Mavis Beacon Teaches Typing is good software—it adjusts to your performance and tailors lessons to individual needs. Lessons are constructed to consider weaknesses and reinforce strengths. The Macintosh-like user interface makes program operation almost intuitive. If you prefer to use the keyboard instead of the mouse, you can access many of the menu-bar options by pressing the open-apple key in conjunction with a specific letter. You'll still need a mouse, though, to operate the program to its full capacity.

When you're done for the day, you can print a "report card" showing your results for current and past sessions. Check out what your progress report shows, and keep practicing—your speed and accuracy are bound to improve. Mavis most certainly ranks among the top typing instructors.■

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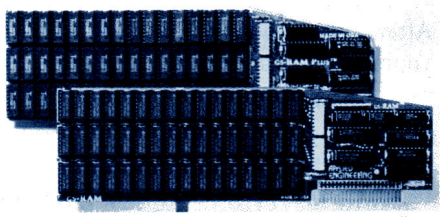

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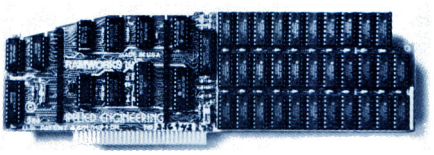

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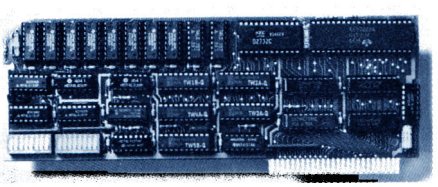

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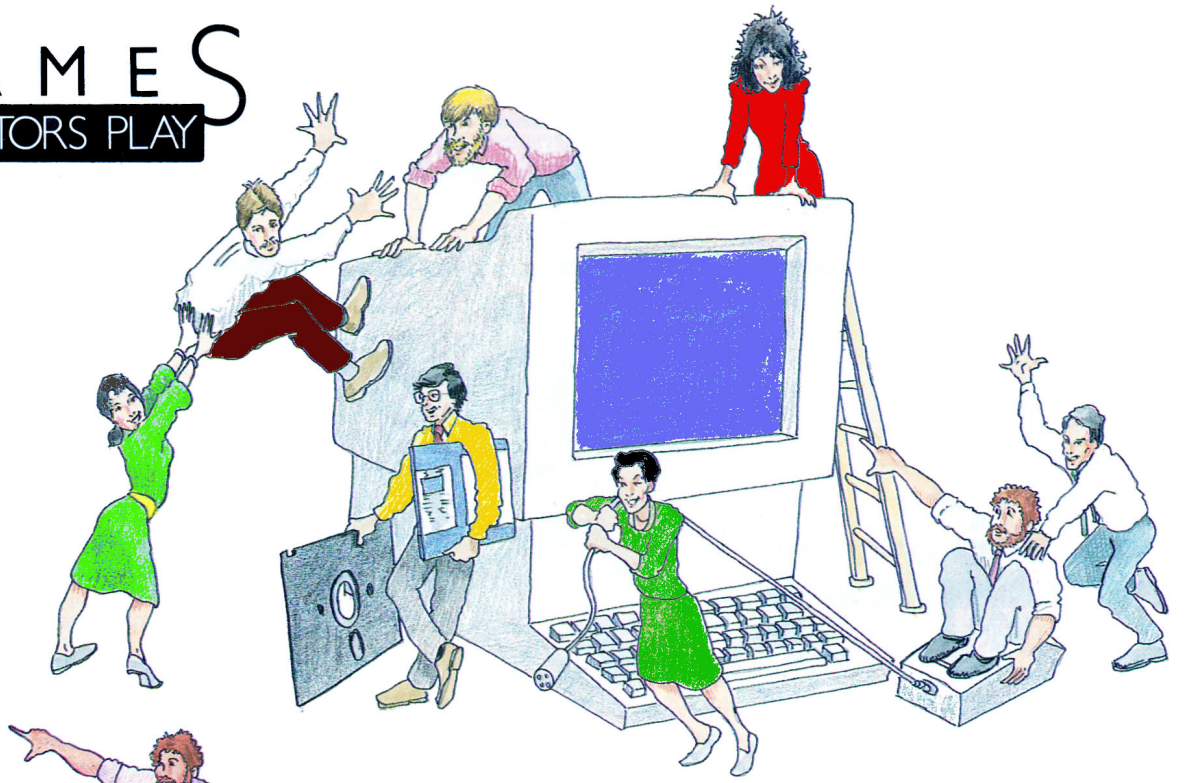

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I thought I'd seen *everything* simulated in computer games—air hockey, golf, darts, card games—you name it. I was wrong. Now I can bowl a few frames without having to leave my desk to head over to the local lanes.

In Anchorman (the last bowler, on whom you can always count for a good shot) you can bowl a game of Tenpins or Duckpins with your keyboard or joystick. With the keyboard, you aim your shot with the left- and right-arrow keys, and time your approach and release with a four-key sequence. It's not as easy as it sounds. You have to time it smoothly or your ball will go careening off the lane into the gutter.

Once you've bowled your ball, it looks just like the real thing. The ball tumbles down the lane, swerving to the left and right, and (you hope) mowing down a bunch of pins. If you just barely hit a pin, it'll wobble back and forth before falling. If your shot smacks right into the center, pins go spinning off to the side before they disappear. Of course, I didn't see that too often.

For some much-needed practice in solving bowling dilemmas such as spares, splits, and washouts, you can choose Sparetime, Do the Splits, or Do the Wash. These portions of the game present you with randomly chosen situations; practice sessions will come in handy when you're in tournament play.

Bowling has never been my strong suit. That I'm not so hot in Anchorman is an indication of its authenticity. It really is good fun—and you don't have to put on those silly-looking shoes.

Pat Payne plays . . .

Club Backgammon, *California Dreams, 780 Montague Expressway, Suite 403, San Jose, CA 95131, (408) 435-1445, $39.95*

Club Backgammon is a faithful replication of the board game of the same name, designed for the Apple IIGS. Backgammon is based on the laws of chance and how you react to them. As such, it lends itself well to computer gaming.

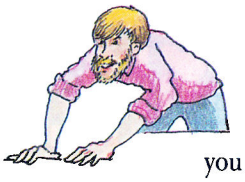
Club Backgammon lets you play against the computer or another person. You could also, of course, ask the computer to play against itself, but that wouldn't be very interesting. Choose your level (beginning, intermediate, or expert), then roll for order of play. From there, it's a race around the board.

You'll find your Apple opponent a worthy match, although it will ignore some seemingly classic strategies. Slowing down the speed of the computer's moves helps, because it gives you a chance to observe and improve your own playing.

My only complaint about Club Backgammon is its copy-protection scheme. Before you can play you must answer a question like "What is the third letter in the second word of line four on page 33?" It's irritating.

Club Backgammon is a good alternative when you lack a partner and still want to take a few turns around the board. It's fun and it's a good way to polish your backgammon skills.

Paul Statt plays . . .



Soko-Ban, *Spectrum Holobyte, 2061 Challenger Drive, Alameda, CA 94501, (415) 522-3584, $29.95*

Did you ever have to do a dull job—say, pushing heavy boxes around a dark warehouse—that you tried to enliven by "pretending it's a game"? *Soko-Ban* means "warehouseman" in Japanese—it's as entertaining as pushing boxes around can possibly be.

It's more fun than you think. Soko-Ban's a maze game. You push the boxes down narrow corridors and onto a loading dock. But one complication—you can push only forward—makes it a strategy game, too.

Limited mobility's not the only problem you'll face. I dealt with a screen of "credits," a choice between two elevators, and a selection of ten floors before I ever saw a maze. I didn't know that *Soko-Ban* was Japanese for "warehouseman" when I started, and didn't know enough to climb into an elevator and take it to the first floor.

At first it seems impossible to load all the boxes without backing up. But after several tries you catch on, and after several levels, you've learned a few tricks that make the work go faster, such as storing boxes in empty halls.

Soko-Ban bored me after 13 levels; there are 50 built in, and you can create 49 more. Inspired players can time themselves and count moves in competitions. I hear that happens in Japan, where Soko-Ban has been popular for years.

But once I got the tricks down—not just strategic tricks, but tactics such as using the arrow keys instead of the joystick—Soko-Ban became, if not easy, mindless. It simulates this type of work well—unfortunately, that's pretty weak praise for a game.■

Short Takes . . .

Tetris

■■■■■

Spectrum Holobyte, 2061 Challenger Drive, Alameda, CA 94501, (415) 522-3584, $39.95

The Soviets are just pretending to *perestroika* and *glasnost*, because Tetris is a subtle Commie plot to bury us with colored blocks. Once you start, you won't stop. As addictive as Shanghai, but takes more strategy and coordination. (See Editors' Choice, October 1988, p. 120.)

Superstar Ice Hockey

■■

Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667, (800) 221-9884, $39.95 (GS version $44.95)

We were excited about Mindscape's Superstar Ice Hockey . . . then we played it. The Apple II world is still waiting for a good ice-hockey game. Joystick required.

ZorkQuest

■■■■■

Infocom, 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000, (800) 262-6868 (orders only), $12

The final Infocomic of the three introduced, although Infocom promises more (in the form of sequels) to come. Maintains the same high level of quality and fun seen in the first two—buy it!

Alien Mind

■■■■

PBI Software, Inc., 1163 Triton Drive, Foster City, CA 94404, (415) 349-8765, $54.95

Everything's out to get you as you blast your way through the corridors and levels of a space station. Along the way you log onto terminals to get clues and passwords from your friend, who's hiding somewhere deep in the station. Alien Mind is exciting action that will keep you occupied for a good long time. Joystick recommended. (See Games Editors Play, September 1988, p. 42.)

L.A. Crackdown

■■■

Epyx, 600 Galveston Drive, P.O. Box 8020, Redwood City, CA 94063, (415) 366-0606, $49.95

You monitor the activities of another detective from the safety of your surveillance van. Have your colleague interrogate suspects, plant bugs, photograph clues, and make arrests. Make the right moves and you'll bust the drug ring. It's kind of like Leisure Suit Larry joins *The Rookies*.

Paperboy

■■■

Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667, (800) 221-9884, $44.95 (GS version)

Deliver *The Sun* while avoiding pedestrians, skateboarders, cars, and other hazards. You'll get bonus points for doing damage to noncustomers' homes along the way. A nice change from the missiles and fighter planes found in so many games. Joystick recommended. (See Games Editors Play, August 1988, p. 49.)

Border Zone

■■■

Infocom, Inc., 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000, (800) 262-6868, $39.95

Three short interactive stories about a spy trying to escape from behind the Iron Curtain. You can ask for hints if you get stuck, which is a big help for beginners. (See Games Editors Play, April 1988, p. 42.)

Street Sports Basketball

■■■

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

A game that brings back memories of playground glory. Lots of fun, but not as challenging as it might be—it doesn't quite live up to the concept. (See Games Editors Play, August 1988, p. 48.)

Ticket to Washington, D.C.

■■■■

Blue Lion Software, 90 Sherman Street, Cambridge, MA 02140, (617) 876-2500, $44.95

A game designed to educate children and adults alike about our capital. Along the way you'll earn clues to the identity of a famous American. They're confusing—plan to spend plenty of time with this one. (See Games Editors Play, September 1988, p. 42.)

Wings of Fury

■■■■

Broderbund Software, 17 Paul Drive, San Rafael, CA 94903, (415) 492-3200, (800) 527-6263, $34.95

In this World War II flight simulation you choose your rank, then fly the corresponding island bombing raid. Your final targets are enemy ships—but meantime, watch out for enemy planes looking for a fight! Joystick required. (See Games Editors Play, April 1988, p. 43.)□

Programs & Peripherals

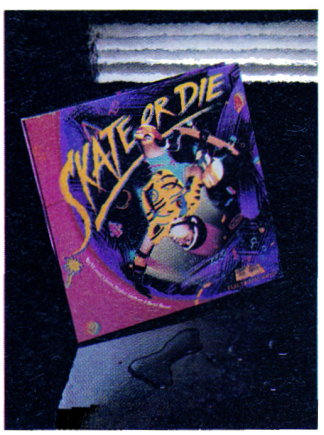
Specials good through November 30, 1988.

TimeOut QuickSpell by Beagle Brothers

TimeOut QuickSpell is the fastest, most powerful spellchecker available to AppleWorks owners. You can check your spelling while inside AppleWorks in seconds, saving valuable time for more productive tasks. *TimeOut QuickSpell* features in-context checking, alternate spelling suggestions, and double word correction. It relies on an 80,000 word dictionary that you can modify and update to your specific need. You can load the dictionary to hard disk or RAM disk to save even more time, and can clone it to create custom, multi-purpose dictionaries. Requires AppleWorks.

TimeOut QuickSpell ..... **45.**

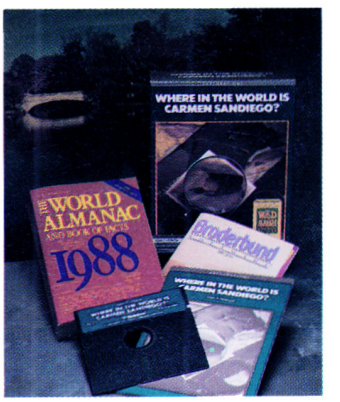
Skate or Die! IIGS by Electronic Arts



Skate or Die! is the skateboard simulator that gets to the guts of the sport, from freestyle ramp events to downhill. You can show off your fakies, aerials, ollies and 720s on the half-pipe, or challenge your friend to a joust in the pool. And after you've shown your stuff at the park, you can race through drainpipes and over grates racing for speed and points on the downhill course! *Skate or Die!* features freestyle ramp, downhill, high jump ramp, pool jousting, and freestyle downhill events for one to eight players. Requires Apple IIGS and joystick.

Skate or Die! ..... **30.**

Where in the World is Carmen Sandiego? by Broderbund



Where on Earth will you find the excitement of international travel combined with the intrigue of cloak and dagger sleuthing? In your Apple II — when you boot up Broderbund's ***Where in the World is Carmen Sandiego?*** As an Interpol agent you'll use clues, police dossiers, a computer database, and the World Almanac (included with the program) to pursue the world's most notorious criminals! This award-winning educational game teaches children (age 12+) geography and culture, and helps adults sharpen their reasoning skills. Graphics, animation, and sound maintain excitement. Combinations of 30 cities, 10 criminals, and almost a thousand clues assure new challenges in every chase! Requires joystick.

Where in the World is Carmen Sandiego? ..... **27.**

Ticket to Hollywood by Blue Lion Software

Take a trip to Tinsel Town without ever leaving your workstation with Blue Lion's ***Ticket to Hollywood***. You'll visit Hollywood's most famous spots, from Sunset Boulevard to Paramount Studios, travelling with the likes of Bogey and Gable. You'll pursue the answers to 25 perplexing trivial mysteries using six 3-D maps, visits to up to 35 famous locations, and information gathered from the database containing more than 2,000 facts! You can travel through eight decades of film history, learning about developments from the silent screen to the blockbusters of today. The possible combinations of places, people and facts insure that you'll never play the same game twice. Requires Apple IIc/IIe/IIGS with 128K RAM; joystick or mouse recommended.

Ticket to Hollywood ..... **27.**

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		Taxan	
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Beagle Brothers
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Timeout SuperFonts 45.
Timeout QuickSpell *Special* 45.
Timeout UltraMacros or SpreadTools 37.
Timeout SideSpread, FileMaster, or DeskTools 32.
Timeout Thesaurus, DeskTools II or PowerPack 32.
GS Font Editor or Program Writer 32.
Timeout MacroTools or MacroTools II 19.
BPI Systems
(Accounting Systems for the IIe, IIc & IIGs)
BPI General Accounting ProDos 139.
BPI AR/AP or Inventory ProDos *(ea.)* 139.
BPI Payroll ProDos 139.
Broderbund
On Balance 41.
Bank Street Writer *Plus* 55.
Claris
Apple Works *(IIe, IIc, IIGs)* 215.
Dac Software
Dac-Easy Accounting 68.
Datapak
Graphicwriter 2.0 *(IIGs)* 85.
Notes 'N Files *(IIGs)* 74.
Garde Footing To Finish 65.
Intuit Quicken 34.
Manzanita *BusinessWorks*
System Manager *(Required)* 69.
GL/AR/AP/ or Inventory Control 139.
Payroll Module 139.
BusinessWorks Bundle *(Sys. Manager, G/L, A/P, A/R, Inventory)* 299.
MECA
Managing Your Money 3.0 *(IIe, IIc, IIGs)* 96.
Mece Calendar Crafter *(IIGs)* 40.
Milliken Medley *(IIGs)* 126.
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Nolo Press Will Maker *(Version 2.0)* 39.
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Pinpoint Publishing Graphics Edge 55.
Pinpoint IIGs Starter Kit 92.
Pinpoint 50.
Pinpoint Spelling Checker or Document Checker 43.
Pinpoint Speller/Document Checker Combo 61.
Key Player 30.
ProFILER 3.0 74.
Roger Wagner Publishing
Mouse Write *(IIe, IIc, IIGs)* 84.
Sensible Software
Sensible Grammar ProDos *(3.5" & 5.25")* 61.
Sensible Speller ProDos w/3.5" & 5.25" 71.
Simon & Schuster
Webster's Spelling Checker *(ProDos)* 41.
Software Publishing
All Programs for IIe with 128K or IIc
PFS: Workmates *(File/Report/Plan/Write)* 119.
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StyleWare, Inc. Multiscribe GS 3.0 65.
Multiscribe 3.0 w/Speller *(128K IIe or IIc)* 52.
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Print-Quick 34.
Print-Quick Font Disk 1 or 2 15.
Timeworks Publish-It 69.
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Word Perfect Corporation
WordPerfect V1.1 w/Speller *(IIe & IIc)* 105.
WordPerfect *(Apple IIGs)* 105.

Educational Software

Activision/Mediagenic
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Barron's
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Where in the World is Carmen Sandiego? *Special* 27.
Where in the USA is Carmen Sandiego? 31.
Where in Europe is Carmen Sandiego? 31.
Compu-Teach
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Stepping Stones Level II 25.
See the U.S.A. 37.
Davidson & Associates
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Beagle Brothers Beagle Compiler 46.
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DataLink Modem 2400B *(Int II+, IIe or IIGs)* 185.
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Electronic Arts
Skate or Die! *(IIGs)* *Special* 30.
Bards Tale *(IIGs)*, Bards Tale II *(IIGs)*, Instant Music *(IIGs)*, Music Construction Set *(IIGs)*, Bards Tale II, Madden Football, Bards Tale III, or Wasteland 37.
ChessMaster 2000, Legacy of the Ancients, Deathlord, Chuck Yeager Flight Sim., Scrabble, Scruples, Zany Golf *(IIGs)*, Halls of Montezuma, Earl Weaver Baseball, or World Tour Golf *(IIGs)* 30.
Strike Fleet, PHM Pegasus or Marble Madness *(IIe or IIGs)* 26.
EPYX Sub Battle Simulator *(IIe or IIGs)*, Home Video Producer, The Games: Winter Edition, The Games: Summer Edition, or L.A. Crackdown *(IIe or IIGs)* 34.
California Games *(IIGs)*, Destroyer *(IIGs)*, Street Sports Soccer *(IIGs)*, Final Assault *(IIGs)*, or Impossible Mission II *(IIGs)* 31.
California Games, Dive Bomber, Street Sports Football *(IIe or IIGs)*, Destroyer, Street Sports: Baseball, Street Sports: Soccer, Sporting News Baseball or Sticker Maker 27.
Street Sports: Basketball 15.
Winter Games *(IIGs)* or World Games *(IIe or IIGs)* 15.
Movie Monster Game or Championship Wrestling 15.
World's Greatest Baseball or Football Game 15.
Winter Games, Summer Games II, or Death Sword 15.
Firebird Elite 12.
Garde
Blue Powder Grey Smoke or High Seas 35.
Hayden Software Sargon III 15.
Infocom Leather Goddesses Of Phobos, Nord & Bert or The Lurking Horror 25.
Hitchhiker's Guide to The Galaxy 15.
Sherlock 27.
Beyond Zork *(IIe or IIGs)* or The Zork Trilogy 34.
Zork Zero, Journey *(IIe or IIGs)* or Show Gun 34.
Zork Zero *(IIGs)* or Show Gun *(IIGs)* 41.
Intracorp
Murder on the Atlantic *(IIe & IIGs)* 24.
Micro League Sports Micro League Baseball 27.
General Manager/Owner Disk 21.
Team Disk 14.
Microprose
F-15 Strike Eagle or Silent Service 24.
Silent Service *(IIGs)* or Pirates *(IIe or IIGs)* 27.
Mindscape
Defender of the Crown *(IIGs)*, Rocket Ranger or The Three Stooges *(IIGs)* 34.
Infiltrator II or Bad Street Brawler *(IIe or IIGs)* 24.
Deja Vu *(IIe or IIGs)* 34.
Balance of Power *(IIe or IIGs)* or Super Star Ice Hockey *(IIGs)* or Gauntlet *(IIGs)* 31.
Super Star Ice Hockey 27.
Gauntlet or Paperboy *(IIe or IIGs)* 27.
Sinbad *(IIGs)*, S.D.I. *(IIGs)* or King of Chicago *(IIGs)* 34.
Indoor Sports or Xevious 21.
PBI Software
The Tower Of Myraglen *(IIGs)* or Alien Mind *(IIGs)* 34.
Strategic Conquest II *(IIGs)* or Cavern Cobra *(IIGs)* 31.
Sea Strike *(IIGs)* or Monte Carlo *(IIGs)* 25.
Share Data
Jeopardy, Family Feud or Wheel of Fortune 9.
Jeopardy II, Wheel of Fortune II, Concentration or Card Sharks 10.
Sierra On-Line Space Quest, Space Quest II *(IIe or IIGs)* or Space Quest *(IIGs)* 34.
Kings Quest I, II, or III *(IIe or IIGs)* 34.
Leisure Suit Larry *(IIe or IIGs)* 27.
Thexder *(IIGs)* 24.
3-D Helicopter Simulation *(IIGs)* or Police Quest *(IIe or IIGs)* 34.
Mother Goose *(IIe or IIGs)* 21.
Simon & Schuster
Star Trek *(Kobayashi Alternative)* 21.
Star Trek *(The Promethean Prophesy)* 12.
Sir-Tech Wizardry 34.
Legacy of Llylgamyn 34.
Return of Werdna 41.
Spectrum Holobyte Gato 12.
Gato *(IIGs)*, Soko-Ban *(IIe or IIGs)* or Tetris *(IIe or IIGs)* 25.
Orbiter *(IIGs)*, Wilderness or Dondra *(IIe or IIGs)* 31.
Strategic Simulations B-24 26.
AD&D Dungeons Mstr. Asst. Vol I 23.
Wizards Crown, Eternal Dagger, Shard of Spring, Roadwar 2000, Sons of Liberty or Phantasie I, 2 or 3 30.
Questron II, Roadwar 2000 *(IIGs)* or AD&D Pool of Radiance 33.
Chickamunga or Questron II *(IIGs)* 37.
Sublogic Flight Simulator II 39.
Jet 31.
Scenery Disks 1, 2, 3, 4, 5 or 6 16.
Scenery Disks 7 or 11 20.

Communication Software

Activision/Mediagenic Teleworks Plus *(IIGs)* 68.
Checkmate Technology
ProTERM *(IIGs, IIe, IIc)* *Special* 95.
Compuserve Compuserve Starter Kit 24.
Grolier On Line Encyclopedia 32.
Pinpoint
Point-To-Point 74.
United Software Industries
ASCII: Express Pro: Prodos or Dos 3.3 74.
ASCII: Express Mousetalk 1.5 74.

Printer Interface Cards

Apple
Apple Super Serial Card 119.
Applied Engineering
BufferPro 32K 105.
BufferPro 128K or 256K Call
Serial Pro *(II+, IIe, IIGs)* 119.
Parallel Pro *(II+, IIe, IIGs)* 85.
Orange Micro Grappler C/Mac/GS 84.
ProGrappler *(Apple IIe or IIGs)* 84.
Serial Grappler Plus 64.
Hot Link 54.
SMT
Envoy *(Super Serial Type Interface)* 67.
Printech II *(Parallel Interface)* 37.
Thirdware
Finger Print GSi Ver 2 *(Includes Desktop Accessories-IIGs)* 79.
Finger Print Plus *(Specify Cables: Parallel, Serial or ImageWriter II-II+ & IIe)* 89.
Fingerprint IIc *(Internal or External Ver.)* 74.
Finger Print G+ *(With Parallel Cable II+, IIe, IIGs)* 55.

Printers

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Microline 182*Plus (120cps Dot Matrix 10")* 275.
Microline 320*Plus (300cps Dot Matrix 10")* 385.
Microline 321*Plus (300cps Dot Matrix 15")* 539.
Panasonic
KXP-10801/M2 *(144 cps)* NLQ Mode 209.
KXP-10911/M2 *(192 cps)* NLQ Mode 229.
KXP-10921 *(240 cps)* NLQ Mode 349.
Seikosha
Seikosha SP 1000 *(Imagewriter Compatible)* 229.
Video Technology
Laser 190A *(Imagewriter Compatible)* 249.

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Bulk *(Sony)* 3½" DS/DD *(box of 10)* 17.
Centech 3½" DS/DD Color Disks *(box of 10)* 19.
Sony 3.5" DS/DD *(box of 10)* 18.
Fuji 3.5" DS/DD *(box of 10)* 19.
Maxell 3.5" DS/DD *(box of 10)* 20.
Verbatim DS/DD *(box of 10)* 19.
3M 3.5" DS/DD *(box of 10)* 20.
C. Itoh 3.5" DS/DD Color Disks *(box of 10)* 25.

Disk Drives & Hard Disk SubSystems

American Micro Research *(Micro Sci)*
A5 D Half Height 5¼" Drive *(IIGs Daisychain)* 165.
A.5 Half Height *(II+ & IIe)* 139.
A.5C Half Height *(IIc)* 139.
Micro Sci C2 Controller 52.
Applied Engineering Transdrive 360K 219.
Transdrive Dual 360K 305.
Transdrive Half Height 360K 119.
CMS
"SD Series - Stack" Platinum IIe, IIGs
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Full Height 5¼" Drive for Apple IIe *(Beige)* 139.
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Half Height 5¼" Drive for Apple IIe or IIc *(Platinum)* 149.
Half Height 5¼" Drive Platinum for IIGs 169.
Apple IIc Drive Adaptor 15.
Mitac
AD-3C Slimline IIc 129.
Rodime
Rodime 20Plus Ext HD *(IIe, IIGs)* 629.
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Rodime 100 Plus Ext HD *(IIe, IIGs)* 1169.
Rodime 140 Plus Ext HD *(IIe, IIGs)* 1319.
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Universal Disk Controller 79.
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A LITTLE MORE FOR A LITTLE LESS

Will turbo speed and a reasonable price tag give Apple's new IIc Plus an edge in the race for entry-level home-computer sales?

Apple's new IIc Plus: Built-in 3½-inch disk drive, SmartPort, great speed, and an internal power supply bring an old favorite up to date.

If for less than the price of the current Apple IIc you could buy a new *IIc Plus* with a built-in 3½-inch disk drive, a microprocessor that ran applications such as AppleWorks four times faster than the old IIc and IIe, a color composite monitor, and a few other little goodies, would you settle for less than an Apple IIGS—if you could save almost a thousand dollars, that is? Would you forget about buying an MS-DOS clone?

Apple's betting you will. Its money is on the Apple IIc Plus. The IIc Plus is Apple's answer to critics who have been asking for an inexpensive (in Apple terms) entry-level, plug-in-and-go home computer.

The $1099 price tag—for computer, color monitor, and monitor stand—is as close as Apple gets to aggressive pricing. But if $1099 still sounds steep, you can get a IIc Plus with a monochrome monitor and stand for $829. The rock-bottom price for a IIc Plus without monitor is $675. It's interesting, and odd, that while Apple shaved about $125 off the list price of the IIc, it increased the price of its monochrome monitor from $129 to $159.

While Apple has in effect cut the IIc's price by $100–$125, depending on configuration, it has added some features that are necessary to the computer's survival. First of all, the IIc Plus is fast—faster than a IIGS. The faster processor makes the IIc Plus the fastest Apple II on wheels—faster than the GS, faster than the speedy 128EX/2, and according to our early tests, slightly faster than a IIe with a Zip Chip.

If you're looking for a machine that will fly through AppleWorks documents—crunching numbers, replacing text, sorting databases three times faster than the former IIc and IIe—the IIc Plus has the horsepower.

The IIc Plus doesn't have a GS-like Control Panel to let you control its speed. When you turn it on you're running at 4 megahertz (MHz); you bring it back to 1 MHz by typing Open apple-Control-Escape-Reset simultaneously. A warm boot (Open apple-Control-Reset) or cold boot (shutting off the machine and turning it on again) brings it back to high speed.

IS SOFTWARE GETTING SMALLER?

The second significant change in the IIc is the addition of an internal 3½-inch disk drive. That's a little more controversial

by Dan Muse, Editor in Chief

Photography by Mark Johanr

AN UNDERDOG'S NEW TRICKS

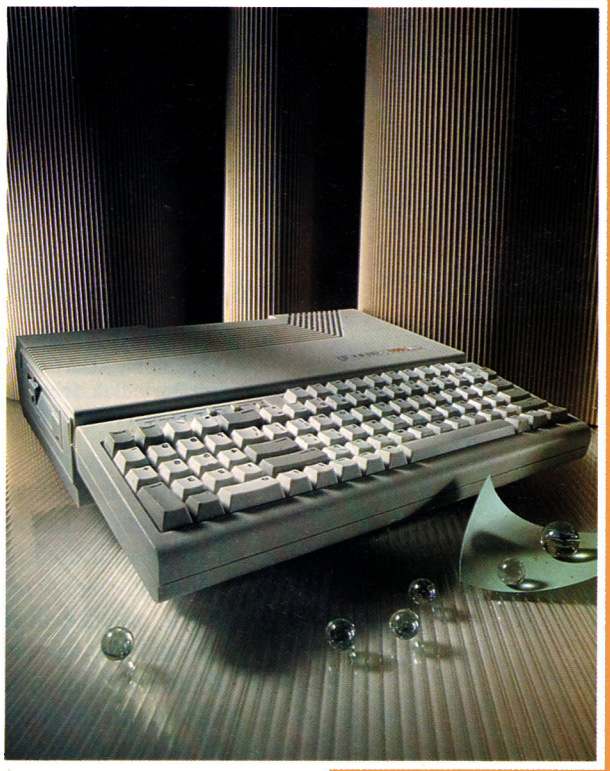
Introducing the fast, flexible Laser 128EX/2, the best II compatible yet. Has the new Apple IIc Plus met its match?

For an underdog, Laser Computer has the instincts of a pit bull. While Apple concentrated on the IIGS, leaving the IIc to grow old, underpowered, and overpriced, the Apple-compatible Laser 128 and 128EX were nipping at its ankles with more standard equipment at much lower prices.

Now Apple has finally uncorked the IIc Plus (see "A Little More for a Little Less," previous page), but Laser is ready to whisper in customers' ears: "You want a built-in $3\frac{1}{2}$-inch drive? We've got one. You want a machine that runs faster than a GS? Ours already did. You want more standard features? The IIc Plus still doesn't have some of our old ones."

The new top-of-the-line Laser 128EX/2 has everything you can possibly put into an 8-bit Apple II: a souped-up central processing unit, the latest drive technology, plenty of input/output ports and expansion abilities, even conveniences such as a ProDOS clock. It's surely the best Laser yet; in terms of standard equipment, it's more than a match for the IIc Plus.

On the other hand, Laser's claim to top-speed honors has slipped—power users will find the new Apple is slightly quicker—and its all-important price advantage has narrowed. While Laser President David Gish declares, "We will be price-competitive [with Apple]," the EX/2's tentative price is $126 under that of the IIc Plus—a savings, to be sure, but less than half that between the old IIc and Laser 128.



The Laser 128EX/2: faster than a GS in 8-bit mode, plus new internal $3\frac{1}{2}$-inch drive, SmartPort, Control Panel, RAM card, and MIDI interface.

WHAT SIZE DRIVE?

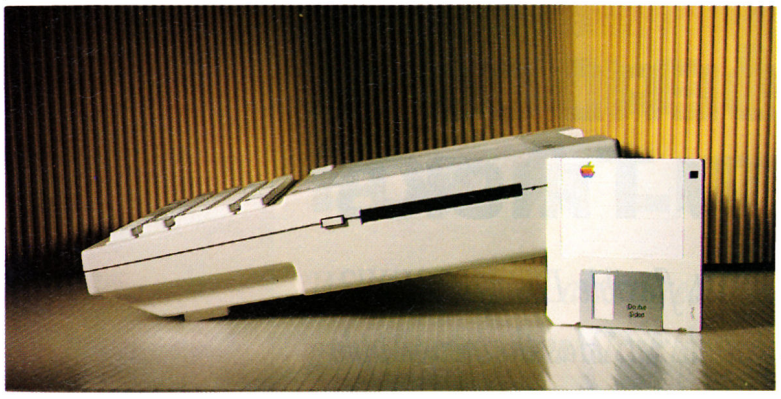
Like the IIc Plus, the 128EX/2 represents several small changes from a previous model instead of an all-new design. (Last year's 128EX is itself an upgrade of 1986's first-generation Laser 128.)

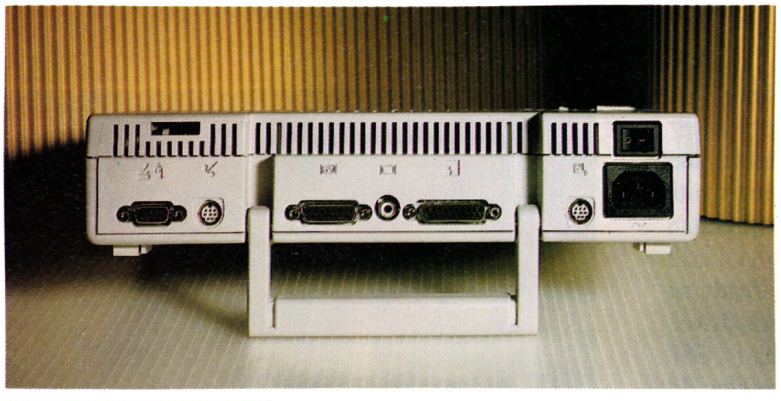
One nontechnical change involves sole instead of joint custody of U.S. sales: Laser Computer, the new name for the relevant branch of the Hong Kong- and Illinois-based home-electronics firm Video Technology, has bought a majority interest in Central Point Software, the Oregon workshop that continues to do ROM coding and other development for the Laser line, but no longer offers machines by mail. Laser's own dealer network, from small shops to Sears, now handles all sales.

The most obvious technical change involves disk storage.

by Eric Grevstad, Contributing Editor

Photography by Larry Dunn





IIc Plus ports, left to right: joystick/mouse, modem, RGB video, composite video, SmartPort disk drive, printer, and power-cable outlet.

than the machine's faster speed. The market trend is toward the smaller disk format, but we're not quite there yet. What the IIc buyer gains in convenience, he or she loses in software availability.

Apple has been nudging program developers to adopt the 3^1_2-inch format, so by the time you read this there will probably be plenty of software options available. There are hundreds of older, inexpensive programs, however, that will never see a 3^1_2-inch disk.

If you're familiar with the Apple UniDisk 3.5, you know how superior 3^1_2-inch disk drives are to their bigger and louder 5^1_4-inch relatives. The former hold five times as much data. So if you think of the new microprocessor as giving you speed, think of the internal 3^1_2-inch disk drive as giving you good mileage. If you're using a UniDisk 3.5 with your IIc or IIe, you'll find the IIc Plus internal drive a little faster because it doesn't have to scan the 5^1_4-inch disk first.

If one 3^1_2-inch drive isn't enough—and it probably won't be—the IIc Plus' SmartPort lets you "daisychain" as many as three 3^1_2- and 5^1_4-inch disks in any combination: That is, you attach one drive to the IIc Plus, then another drive to that drive, and so on.

A IIc FACELIFT

One change that will go unnoticed by new IIc users is the machine's internal power supply. It's a small but welcome revision. It's surprising that even with the power supply on the inside, the IIc Plus feels lighter than the IIc with its 5^1_4-inch drive and external power supply. The IIc Plus follows Apple's platinum color scheme, and sports a mini-DIN 8-pin serial port, as do the GS and the Macintosh. It will make life a lot easier when you're buying printer cables. Apple also decided that its new IIc didn't need a 40/80-column switch, and wisely opted for the 80-column default. The volume control is on the front, where the 40/80 switch used to be. The return key is now the more traditional backward-L shape, and, in general, the keyboard has a better feel to it.

The IIc Plus isn't everything it could be. While going to the trouble of increasing speed and storage capacity, Apple neglected to increase the RAM (random-access memory). If you want to push AppleWorks or use a desktop-publishing program effectively, 128K doesn't quite cut it.

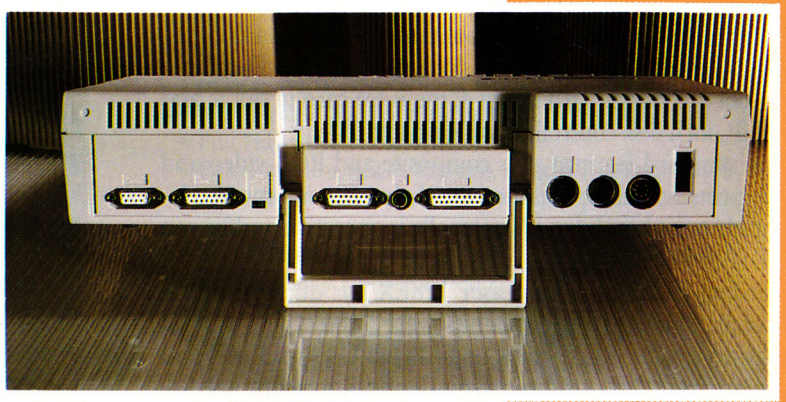
It wouldn't be so bad if the IIc weren't a closed, slotless system. Unlike the trusty old IIe and chic IIGS, adding memory to the IIc Plus is tricky at best. Also, older IIc memory-expansion boards won't work with the IIc Plus.

From a technological point of view, the IIc Plus isn't revolutionary. It's disappointing that a company as technologically sophisticated as Apple couldn't have gone a step further and, for example, made the IIc Plus a truly portable Apple II. It's encouraging, though, that Apple has cut the IIc's price—even if by only a small amount—while adding features that make the computer more attractive. Here's the big question: Is the IIc Plus cheap enough to make people shopping for an Apple II sacrifice the GS' compatibility with virtually every Apple II program ever written—and the promise of tomorrow's exciting software? The IIc Plus is a nice system, but it's too little, too late.■

Other Lasers, like the original IIc, have a built-in 5^1_4-inch (143K) drive. So does one EX/2 model, priced at $499, for schools or other customers with lots of software in the older disk format—a choice Laser feels is a selling point against the IIc Plus. But the "real" 128EX/2, priced at $549, has a 3^1_2-inch (800K) internal drive for faster, sturdier, more spacious storage.

You can plug in an external 5^1_4-inch drive, or a second 3^1_2-inch drive, and two more besides: The rear-panel drive port now works like a IIGS SmartPort, supporting up to three of Laser's new daisychainable drives (or Apple drives) for a total of two drives of each size.

As with the GS, 3^1_2-inch units come before 5^1_4-inch drives in the chain. The 5^1_4-inch drives are always assigned to slot 6 and the smaller drives to slot 7—actually a logical improvement on the GS, which can put one microfloppy in slot 5 while the other shows up in slot 2.



Laser 128EX/2 ports, left to right: joystick/mouse, parallel printer, MIDI/modem, video expansion, video out, external drive, MIDI/modem 2, serial printer, power plug, on/off switch.

FAST AND FLEXIBLE

Do you want your EX/2 to always boot from its external 5^1_4-inch drive, instead of first looking for a 3^1_2-inch disk in the internal drive? That's one of the choices on the ROM-based Control Panel, reached by pressing P during power-up or a Control-Reset.

In addition to picking a boot slot (5, 6, or 7), the Control Panel menu lets you set serial or parallel port parameters; broad or coarse mouse scaling; the date and time for the clock/calendar, whose NiCad (nickel/cadmium) battery is recharged during use and should never need replacement; and one of three system speeds, shifting the Laser into first, second, or third gear.

Like the 128EX, the EX/2 uses a 65C02 processor that runs at either an old-fashioned 1 megahertz (MHz), an intermediate 2.3 MHz to add some extra challenge to games, or a quick 3.6 MHz. The top speed more than triples the performance of the original IIc and runs 8-bit software faster than a IIGS. But the 4-MHz Apple IIc Plus means that for those who want to shave the final tenths of seconds, Laser can no longer claim to offer the ultimate AppleWorks engine. (See the accompanying sidebar, "AppleWorks Speed Shootout.")

Disk-spinning AppleWorks users, however, will tell you that expanded memory boosts performance more than a slightly faster CPU. Both the EX/2 and IIc Plus have 128K of standard RAM, but the Laser has the advantage of a built-in ProDOS and AppleWorks-compatible memory card (socketed for up to 1 megabyte), so users need only plug in chips instead of installing a board. (The clock/calendar is a tiny AppleWorks time saver, too.)

MIDI MUSIC, MAXI INTERFACES

Laser representatives don't seem worried about the IIc Plus' fractionally greater speed; in fact, Central Point President Michael Brown told *inCider*, "We're really happy Apple's announcing it, because it's going to put Apple's stamp of approval on a high-speed machine. We've sold a lot more 128s than EXs, frankly, because people seem to feel apprehension—they say, 'Well, the real Apple doesn't run at the fast speed.' "

While Apple helps promote faster chips and 3^1_2-inch drives, you can expect Laser dealers to point to EX/2 features not found on the IIc Plus, such as the RAM card and parallel

port—and the most exotic EX/2 feature, a standard MIDI (Musical Instrument Digital Interface) port that connects to MIDI keyboards or other instruments to record and play back electronic music. The Laser comes with simple sequencer and sound-demo software, and Brown says that Passport Designs' popular, professional-level MIDI software will support the machine.

While Laser Product Manager Michael Wagner admits MIDI is "not a strong selling point" for many customers, he sees the synthesizer port as an extra edge in the increasingly sound-conscious Apple II market. Adds Brown, "Most musicians don't have a ton of money, and a lot don't want to spend $2000 or $3000 for a music controller."

Even without MIDI, components are crowded under the Laser label. Software sees the 128EX/2 as having either a serial or parallel printer card (depending on the position of a switch) in slot 1; either a serial or MIDI card (ditto) in slot 2; an extended 80-column card in slot 3; a mouse card in slot 4; the RAM card in slot 5; and $5\frac{1}{4}$- and $3\frac{1}{2}$-inch disk controllers in slots 6 and 7.

These standard features plus composite and RGB video and joystick ports actually preclude use of the side-mounted, IIe-compatible peripheral slot; it's normally inoperative, unless you flip a DIP switch to assign it to slot 5 or 7.

According to Wagner, the Laser 128EX/2 is due for release in October. Our early-August units were prototypes, without production-version ROM chips or finalized Control Panel and MIDI software. (Also, our direct-from-Hong-Kong external disk drives, like Apple drives, worked perfectly with our 128EX/2, but we'll wait to test production drives for IIGS compatibility. Ours ran smoothly with one GS, but had trouble reading $5\frac{1}{4}$-inch directories with another.) Along with the similar lack of a final, off-the-shelf Apple IIc Plus for this issue's report, that's one reason this story's not finished.

The other is our eagerness to observe the marketing wars ahead. Laser will never sell as many computers or have as big a distribution network as Apple, but there's no doubt that the 128 and 128EX have won a place in the Apple market, and irritated Apple in the process. (Central Point's Brown cheerfully says of the IIc Plus, "We're very gratified that Apple decided they had to build a machine to compete with the 128EX.")

But with the IIc Plus, Apple has backed its reassuring, "safe buy" image with much-improved engineering at an aggressive price—$675 (without monitor), compared to Laser's tentative $549 for an EX/2 with $3\frac{1}{2}$-inch drive and monitor. While both machines will surely be discounted by dealers, the days when the difference between the brands exceeded $300 may be over.

The 128EX/2 is a slick machine, the most fully loaded II compatible you can buy. Continuing to offer $5\frac{1}{4}$-inch models is a good idea, too. In fact, depending on where prices end up, the $5\frac{1}{4}$-inch EX/2—or, for the many who don't need MIDI or more than one external $3\frac{1}{2}$-inch drive, the mid-range Laser 128EX—may be bargain hunters' best bet.■

Eric Grevstad is a political columnist and free-lance journalist specializing in computers and technology. Write to him c/o inCider, *80 Elm Street, Peterborough, NH 03458. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*

AppleWorks Speed Shootout

What's the standard for productivity performance benchmarks? Right: AppleWorks—and the IIc Plus is the new AppleWorks champion, with the Laser 128EX/2 close behind.

We put our test machines through more than 500 search-and-replace repetitions in AppleWorks' word processor, then recalculated a 1000-cell spreadsheet. Both the IIc Plus and 128EX/2 beat Apple's IIGS, let alone the original IIc, but the new Apple edged the new Laser—although by less than the 10 percent you'd expect from their CPU speeds (Apple 4.0, Laser 3.6 MHz).

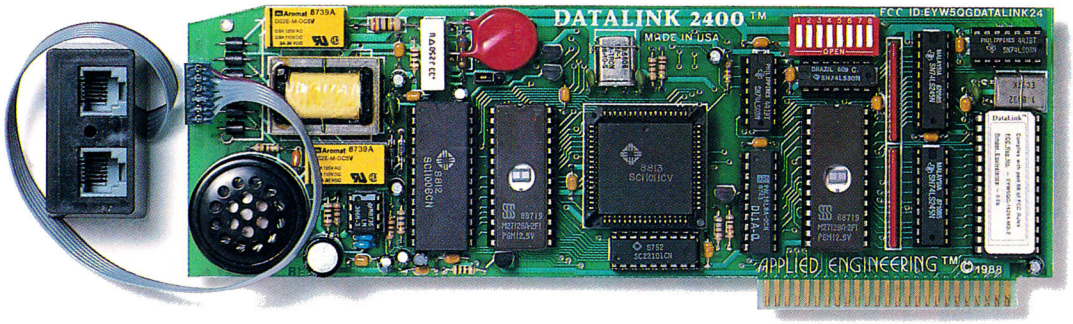
A Laser representative we know claims that the IIc Plus manages a full 4 MHz only for data stored in its 8K high-speed memory cache, not that in conventional memory. Still, Apple's cache seems more efficient than the 4-MHz Zip Chip, which squeezed between the IIc Plus and EX/2 in our tests. Note also that the new IIc's "slow" (1 MHz) mode is slightly quicker than an old IIc, while the new Laser's is slightly slower.

Who'd have thought that the IIGS would be only the fourth fastest AppleWorker in our office? Hope Applied Engineering hurries up with TransWarp GS.□

—E.G.

	Word Processor	Spreadsheet
Apple IIc Plus (fast)	19.7	10.4
Zip Chip (in Apple IIe)	20.2	10.9
Laser 128EX/2 (fast)	21.0	11.4
Apple IIGS (fast)	25.0	14.5
Apple IIc Plus (slow)	66.9	34.9
Apple IIc	67.7	35.4
Laser 128EX/2 (slow)	70.2	38.1

The new DataLink™ 2400 modem from Applied Engineering, it's a lot more than just twice as fast.



Applied Engineering's new DataLink™ 2400. Simply put, the finest modem on the market for your Apple IIGS, IIe or II+.

Bring home a world of information . . . from up to the minute flight information to whole libraries of resource materials. Even download free software and games.

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At transmission speeds up to 2400 bps (bits-per-second), Applied Engineering's new DataLink 2400 is capable of putting text on the screen faster than the human eye can follow. That means you can capture a great deal more material in less time than with 1200 bps modems. And *unlike other modems*, the DataLink 2400 comes complete with powerful, easy-to-use communications software.

Complete communications software included.

Both our new DataLink 2400 and our DataLink 1200 modems feature AE's exclusive communications software —on disk and in ROM—everything needed to get you immediately up and running. Our powerful DataTerm software for the IIGS and IIe supports VT-52 screen emulation, macros, file transfers, on-line time display, recording buffer and more. It even stores hundreds of phone numbers for auto-dialing and log on. And for II+ and 64K IIe owners, our OnLine 64 software has many of the same powerful features.

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- Super Serial Card "Front End" for highest software compatibility (unlike others)
- Adaptive equalization and descrambling
- Hardware configuration for DSR and DCD
- PC Transporter (MS-DOS) compatibility
- FCC certified design

$204.90 in freebies.

We also throw in a nice collection of goodies—a free subscription to the GEnie network worth $29.95, $60 of free on-line time from NewsNet, a free $50 subscription to the Official Airline Guide and a fee-waived membership to The Source worth $49.95 plus $15 of free on-line time.

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DataLink 1200.....$179
DataLink 2400.....$239

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Souping up the GS: Apple announces GS/OS, a 16-cylinder engine for a high-performance machine.

by Jeff Cable, Contributing Editor

For the last two years, the Apple IIGS has amazed computer users with beautiful graphics and sound. If you own a GS or have visited your local computer store, your first reaction to the computer may have been "Incredible!" or "How does it do that?" But although what you see on the GS screen is spectacular, the time it takes to load a program to get that image is something *less* than amazing.

Since Apple released the IIGS in 1986, the company has promised a real 16-bit operating system that takes advantage of the machine's 65816 microprocessor. It's finally here and it's called GS/OS. Although the name is different, don't worry about having to relearn your GS' operating system. GS/OS incorporates a number of changes, but it stills looks and acts like the ProDOS 16 you've been using—it just acts *faster*.

A CACHE OF FEATURES

Unlike the original ProDOS 16 (which is no more than a variation of ProDOS 8 with a different name), GS/OS is a true 16-bit operating system. That alone makes it fast and efficient. The boot time of the GS/OS-based System Disk has been cut in half, with a final loading time of about 35 seconds. Programs that used to take a minute to load now boot in less than 30 seconds. (See the accompanying "Road Test" table for the results of *inCider*'s benchmark tests. Your "acceleration" figures may vary.)

When developing GS/OS, Apple made speed its first priority. To achieve that goal, the programmers had to rewrite the entire operating system; they developed some code from scratch, implementing new techniques not available earlier.

For example, ProDOS 16 has to constantly check the status of volumes on line. Each time you ask your GS to perform an operation, ProDOS polls all attached devices to look for the correct volume before executing the task—and that takes extra time. To make GS/OS more efficient, Apple cleverly designated an area of the GS' RAM (random-access memory) as a storehouse for all ProDOS directory information. The technique is called *RAM caching*; it polls RAM much faster, and the result is speedier disk access.

From the first spin of the disk, you'll know that a much more powerful operating system is in control. When you first boot it, the GS/OS "thermometer" appears in the middle of your screen—a small white rectangle that slowly fills with red as the program loads. About 35 seconds after you start up your GS, the GS/OS System Disk has the Finder up and running.

The new Finder (or Desktop) on System Disk 4.0 looks almost identical to Disk 3.1's, but it's hiding some nice features. For instance, the familar menu bar at the top of the Finder's screen is now also in RAM-cached memory, so each pull-down menu appears more quickly. The first time you select an item you watch the software draw it on screen; when you select it a second time, the window appears instantly, because it's

now RAM-cached. This function not only enhances the Finder, but also works with *any* IIGS program using pull-down menus.

"Shut Down" is one feature that until now has been available only in the Macintosh environment. Selecting "Special" from the GS/OS menu bar gives you the option of turning your system off (ejecting the 3½-inch disks and parking some hard-disk drives), restarting, or returning to the launch application. It's a comfortable way to exit the operating system.

How compatible is GS/OS with software written for the earlier ProDOS 16? At the time of this writing, only a beta copy of the operating system was available, but *inCider* tested more than 20 different software packages and found only two that didn't run. These incompatibilities will most likely be eliminated in the final shipping version of the software. Keep a copy of the old System Disk around just in case.

WAVE OF THE FUTURE

The new GS/OS operating system actually comes on two disks. The first contains the operating system and Finder; the second disk holds System Tools. The first disk carries many of the same files and folders as System Disk 3.1, but no longer has the System Utilities program. Apple decided to eliminate it and instead put all utilities into the Finder.

You can now validate, duplicate, and verify files and volumes without leaving the desktop environment. The new copying procedure is faster and uses the graphics thermometer so that you're continuously informed of its progress.

The System Tools disk includes a new Advanced Disk Utility (ADU) and an Installer program. The ADU lets you initialize and erase disks, and partition your hard disk into multiple volumes. For the first time in Apple II history, you're not limited to 32 megabytes of ProDOS storage. The installation program, which closely resembles the Mac's Font/DA mover, lets you customize each system disk with the particular drivers you need. For example, if you have a CD-ROM drive or a MIDI keyboard connected to your IIGS, you can install those drivers on a system disk. GS/OS even comes with an Epson printer driver to support models other than the ImageWriter II.

Along with adding a couple of new icons, GS/OS introduces one advanced feature: translation modules, which make it possible for the operating system to understand data from non-Apple systems. Currently, the only modules available are written to recognize information from the new Apple CD-ROM drive. This option, however, opens the door for Macintosh and IBM conversion modules, from Apple or from third-party developers.

After waiting two years for a "real" operating system, it's refreshing to see the power and versatility of GS/OS. But what does all this mean to the average Apple IIGS owner? There's at least one real advantage: Now when you load your favorite program, you won't have time to make a quick sandwich.■

ROAD TEST

Media type: two 3½-inch floppy disks
Manufacturer: Apple Computer, 20525 Mariani Avenue, Cupertino, CA 95014, (408) 996-1010
Price as tested: not available
Options: manuals
Standard accessories: pull-down menus, installer program, new device drivers, RAM caching, hard-disk partitioning, Epson printer driver, new icons, shut-down feature, translation modules, thermometers

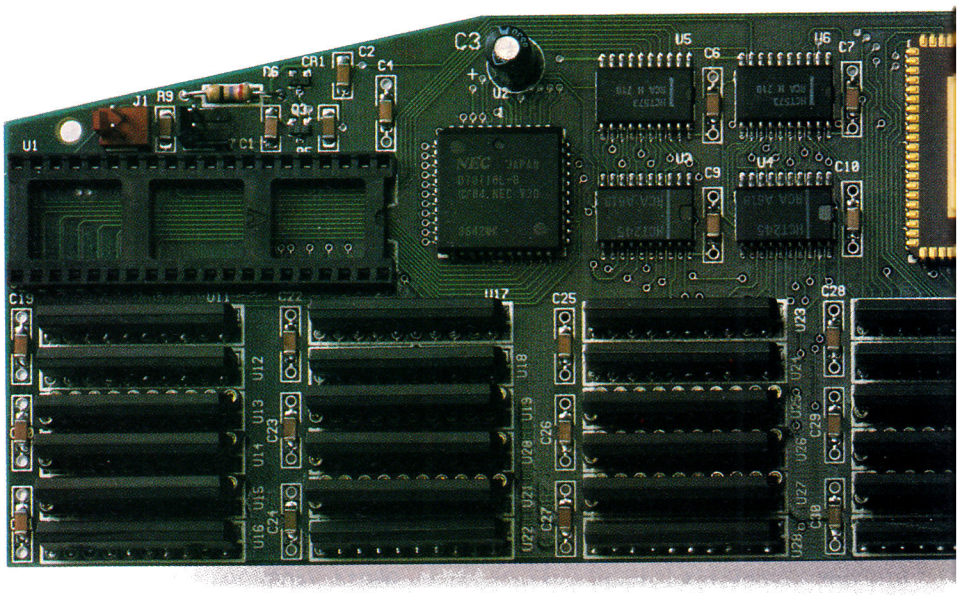
ENGINE	**Type**	16-bit native
	Drive train	Apple 3.5 Drive
	Power	more than System Disk 3.1
CHASSIS/BODY	**Type**	magnetic media
	Body material	plastic covering
	Size	3½" × 3¼"

ACCELERATION	**1988 GS/OS beta**	**Minutes**
	Zero to Finder	0.42
	Paintworks Plus	0.21
	GraphicWriter	0.31
	DeluxePaint II	0.57
	MultiScribe 3.0	0.24
	1986/87 System Disk 3.1	
	Zero to Finder	1.22
	Paintworks Plus	0.27
	GraphicWriter	1.16
	DeluxePaint II	1.22
	MultiScribe 3.0	0.58

Table. *GS/OS (beta version) benchmark tests.*

Jeff Cable is an application specialist and free-lance computer consultant. Write to him at Wolf Computer, 105 North Santa Cruz Avenue, Los Gatos, CA 95030. Enclose a stamped, self-addressed envelope if you'd like a personal reply.

It's not what we think of PC



Actual Size

it's what every

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— InCider

Applied Engineering's PC Transporter gives your Apple IIGS, IIe or II+ the power to speak IBM's MS-DOS. Run MS-DOS programs on your Apple at more than *three times the speed* of an IBM XT.

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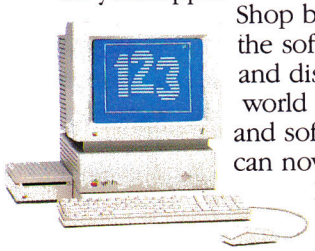
Bring your MS-DOS work home from the office and use your Apple to get caught up . . . or get ahead.

Run Lotus 123, dBASE III PLUS, Symphony, Microsoft Word, Flight Simulator and thousands of other business and entertainment titles - on your Apple!



Shop both sides of the software aisles and discover a new world of programs and software that you can now enjoy.

Exchange ProDOS and MS-DOS files with your MS-DOS friends and co-workers. Even transfer your own files from ProDOS to MS-DOS and back again.

Store IBM programs on any ProDOS storage device including the Apple 3.5 Drive, Apple UniDisk™ 3.5, Apple 5.25 Drive, SCSI or ProDOS compatible hard drives.

You don't have to be a programmer.

PC Transporter was designed by experts, so you don't have to be one to use it. The design team includes the former project managers for the Apple IIe and IIc, the co-designer of the Apple II disk controller and the author of ProDOS.

We include clear, understandable installation instructions, "pre-boot" software and even an installation video to help.

PC Transporter acts as a universal disk drive controller, enabling your Apple 3.5 Drive to run MS-DOS or ProDOS and to shift instantly from ProDOS to MS-DOS.

"Extremely versatile . . . one of the most ingenious and exciting products we've seen."
— Classroom Computer Learning

Tailor your configuration.

What do you need to get up and running? That depends on what equipment you already own and what you'll be running. For example: if you plan to use strictly 3.5 format MS-DOS, an Apple IIGS disk drive does the job. If you need 5.25 IBM capability, you'll need one of our IBM-style disk drives which will also store ProDOS.

There's even a socket on PC Transporter for an 8087-2 Math Co-processor chip to speed you through spreadsheets.

Call Applied Engineering or ask your dealer for more details on your specific needs.

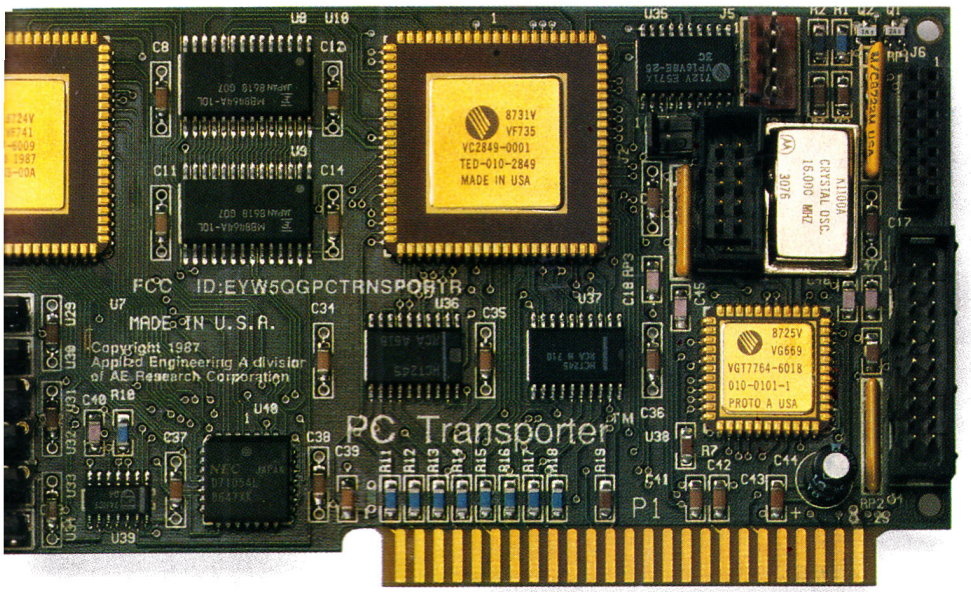
"An excellent solution for at least half a million people who enjoy Apple II computing at home and endure MS-DOS at work."
— MicroTimes

A few words about cost.

Compare the price of a PC Transporter — you'll find it about on par with even the cheapest, stripped-down IBM clones.

Then consider that your PC Transporter gives the Apple peripherals you already own the power to work

Transporter™ that counts . . .



one else thinks.

with MS-DOS programs.

You won't need two of everything. And you won't have to crowd your desk with an extra CPU, an extra monitor, an extra disk drive or two, an extra mouse, an extra modem, an extra hard disk or an extra printer.

Your Apple peripherals and PC Transporter will not only work, you'll get *faster operation* and *better quality graphics.*

Add in the cost of the peripherals you'd need for that "cheap" clone, and you'll see the price of a PC Transporter start to look very attractive indeed.

"PC Transporter has created quite a stir. It's accuracy guarantees a whole host of uses . . . a masterpiece of engineering."
— Apple Soft

And consider one more thing — a fully-equipped PC Transporter's 768K of RAM is useable as a RAMdisk or as memory expansion to any program that follows the Apple Memory Expansion Card protocol (most do).

So you're not only giving your Apple MS-DOS capability, you're adding more than $500 worth of memory expansion to your Apple system.

"When you buy a PC Transporter, you're not just giving your Apple the ability to act as a PC clone, you're upgrading your computer in a big way for all your Apple II computing."
— Nibble

PC Transporter comes with our exclusive AppleWorks Expander™ program that dramatically enhances the capacity, speed and capabilities of AppleWorks.

And PC Transporter is available in configurations from 384K to 768K in 128K increments. So if you elect to start small, you can add more memory later.

PC Transporter memory choices

RAM in Apple mode	RAM in IBM mode	Price
384K	**256K**	**$489**
768K	**640K**	**$699**

Note: The IBM mode is 128K less because the PC Transporter uses 128K for system memory.

IIGS Installation Kit	**$49**
IIe/II+ Installation Kit	**$39**

Optional 5.25 IBM Format 360K Drive Systems

Single-Drive System	**$269**
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Turn your Apple into a fast, powerful, work-at-home tool. The incredible combination of ProDOS and MS-DOS means a computer that'll run practically anything. And know that Applied Engineering stands behind PC Transporter with our 15-day money back guarantee* and a full one-year warranty.

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POLISH YOUR WORDS

Proper words in proper places make the true definition of a style.

—Jonathan Swift

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

The writer's goal hasn't changed much since Swift penned that phrase more than two and a half centuries ago. But writing tools *have* changed. And we're not just talking about Bic ballpoints.

Among the eight Apple II word-processing programs reviewed here, half are components of integrated packages: **AppleWorks**, **DoReMe**, **Easy Working**, and **Trio**. Each can work in partnership with a database-management program and a spreadsheet planner.

The remaining four word processors—**Bank Street Writer Plus**, **MouseWrite**, **Sensible Writer**, and **WordPerfect**—place the emphasis on the written word, pure and simple. (See the accompanying sidebar, "The Compleat Writer," for a preview of **Wordbench**, "the tool for people who write.")

Integrated or not, all eight programs handle routine word-crunching chores such as numbering pages in sequence, moving or copying blocks of text, and formatting title pages. Some do more: check spelling, flag typos, suggest synonyms, organize footnotes, or generate near-typeset-quality laser printouts.

Whether your writing projects are personal, business-oriented, or academic, the following mini reviews, together with the accompanying feature-comparison chart, can help you find the writing tool that's just your style.

APPLEWORKS—PLENTY OF ADD-ONS

Even beginners feel at home with this integrated workhorse's stacking-file-card menu interface and mnemonic open-apple commands. Want to rename a document? It's as simple as pressing Open apple-N.

The AppleWorks word processor may not be as full-featured as some others, but it offers all the tools necessary to create letters, reports, chapters—even magazine articles like this one. You can send personalized form letters, too, thanks to AppleWorks' mail-merge capability.

Independent software developers continue to create enhancement tools and templates for the word-processing, database-management, and spreadsheet sections of this ripe-for-improvement program. Though not the only companies to help boost AppleWorks' popularity, Beagle Bros and Pinpoint Publishing are examples worthy of mention. Programs in the Beagle Bros' **TimeOut** series let you check spelling, perform word counts, and print documents with pleasing typefaces. **Pinpoint Desktop Accessories** for AppleWorks include an appointment (or deadline!) calendar and a spelling checker.

BANK ST. WRITER PLUS—IT ONLY MAKES SENSE

With its menu bar and drop-down menus (File, Edit, Spell, Options, Disk, and Quit), Bank Street Writer Plus is even easier to use than AppleWorks. Press the cursor keys or move the mouse to make selections. Power users who tire of selecting options this way can create custom commands.

Broderbund's program offers some mnemonic apple-key commands, too, such as Apple-C (to center text). But instead of using cryptic codes or nondescript style markers, Bank Street Writer Plus displays formatting selections in inversely highlighted plain English: CENTER (centered text), BFON (boldface on), or ULOFF (underline off).

Beyond these common-sense features, Bank Street Writer Plus offers worthwhile writing aids: a 60,000-word spelling checker, line-number and word-frequency lists, and (depending on the version) a 45,000- or 90,000-synonym thesaurus.

Although Broderbund has retained copy protection on Bank Street Writer Plus, the free backup provided in the package lessens the fear of trashing a program disk the night before your research paper's due.

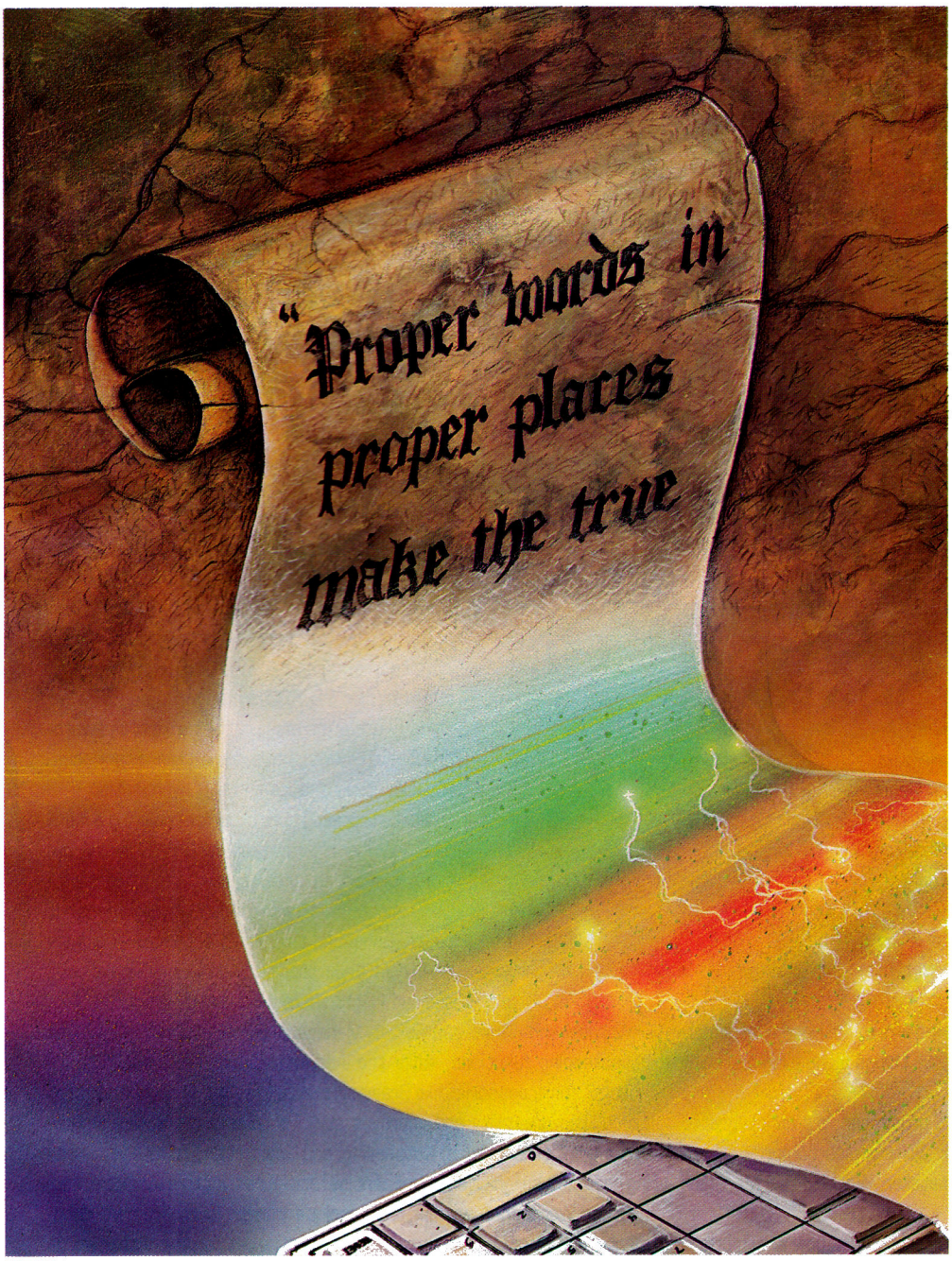


Illustration by Bob Eggleton

DOREME—PACKED WITH OPTIONS

AppleWorks gets so much attention that you may begin to think it's the be-all-and-end-all of integrated programs. Yet, for about one-third the price, Multisoft's DoReMe offers more built-in features overall.

Crunch numbers on DoReMe's spreadsheet, graph the resulting relationships with the charting module, and incorporate those charts into a business or academic report written with the word processor. DoReMe's 50,000-word spelling checker even helps proof the report for you.

DoReMe lets power users write their own macros, and print high-quality documents on laser printers supporting Hewlett-Packard's Printer Control Language.

Capable as it is, DoReMe Word won't suit everyone's writing style. Text-creation and command modes are separate, and type-over is the default typing mode. The delete key doesn't function as a destructive backspace, as it does in most Apple II word-processing programs—a quirk that takes some getting used to.

EASY WORKING: THE (NO-FRILLS) WRITER

What do you get in a word-processing program retailing for $9.95? Just what you pay for: a basic text editor that's adequate for low-budget friendly letters or homework assignments.

The program's features are hidden in drop-down menus—Edit, Option, Print, Storage, Setup, and Quit—accessed via a menu bar. Use the cursor keys and Return to first highlight and then activate the item you want.

Easy Working offers an elephantine spelling checker. Curiously, it seems to alphabetize the words in a document first, then flip through the dictionary "pages" one by one in search of matches or mismatches. It took nearly 12 minutes to check the spelling of a "z" word I threw at it!

The manual, an IBM/Apple/Commodore three-in-one job, is guilty of errors and omissions, and you may have to enter printer-configuration data by first digging out your manual and looking up codes for turning features like underline on and off. Doing this for an off-brand printer is acceptable, but for an ImageWriter II?

MOUSEWRITE—FAST MAC

By opting for mousetext instead of double-hi-res graphics, Roger Wagner Publishing and the MouseWrite design team have ►

combined the ease of use of the Macintosh interface with the performance speed of other Apple II text-screen-based word processors like AppleWorks.

In fact, for GS owners who like the Mac/mouse environment but not slow typing, MouseWrite offers an alternative to WYSIWYG (what you see is what you get) programs such as MultiScribe GS and Writer's Choice Elite. (For a review of these ProDOS 16-based word-processing programs, along with WordPerfect for the Apple IIGS, see the accompanying article "A Rhapsody of Words," p. 72.)

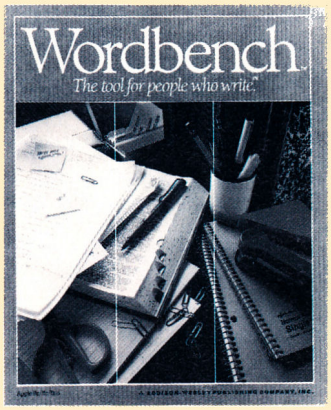
MouseWrite's menu bar sports nine intuitively named pull-downs: MouseWrite, File, Edit, Find, Move, Style, Page, Windows, and Colors. You don't have to use the mouse, but getting around the screen, scrolling through a document, and marking text for formatting are often easier with one.

Standard open-apple commands—such as Open apple-X for cutting text and Open apple-S for saving—help power users speed up some operations. MouseWrite lets you write your own macros and is equipped with an accessory called Multi-Printer, which lets you print a series of documents without opening them onto the desktop first.

The program comes with 15 downloadable dot-matrix printer fonts—including Byte, Gothic, Roman, and Stencil. You can emphasize all or part of your document's text in any of six ►

The Compleat Writer

Students and professional writers who'd like to do more than just process words or run an occasional spelling check should investigate Wordbench, a new "writing environment" from Addison-Wesley Publishing.



Wordbench, dubbed "the tool for people who write," was designed by the Bank Street College of Education and Franklin E. Smith, who in the early 1980s brought to the Apple II the first virtually commandless word-processing program, Bank Street Writer.

Wordbench's keyboard-based interface is no less congenial than that of its predecessor. Use the cursor keys to highlight a desired program option from menu bars or drop-downs; hit Return to activate it or simply press its first letter. Power users can move things along even faster by creating their own "Shortcuts."

But Wordbench isn't just another word processor. It's an integrated package, a writer's toolchest, if you will. Six modules comprise Wordbench's major components: Outliner, Notetaker, Writer, Print Manager, Folder Manager, and Add-In Manager.

Outliner lets you create story lines or report plans (how about prioritized "to do" lists?) of up to four levels. Select any of three labeling styles (I.A.1.a.; 1.1.1.1.; or Blank), collapse outlines, expand them, or swap sections. Move a collapsed outline into Writer for ready-made section headings or, depending on the level of merge, for paragraphs in draft form.

Notetaker is well named, too. Not only can you keep track of research notes and literature citations, you can search or sort notes and link them dynamically to your outline.

Writer is, of course, central to Wordbench's performance. This easy-to-learn word processor *cum* reference set—a 70,000-word spelling checker and 90,000-synonym thesaurus included—performs most of the tricks of the word-processing trade, and a few extraordinary ones, too, like sticky spaces and soft hyphenation.

Most surprising for a program requiring a mere 128K, Writer offers a truly WYSIWYG display option. Formatting choices and type-style selections appear on screen exactly as they appear on paper. Enhanced text looks enhanced—boldface text, bold; underlined text, underlined; italic text, slanted—right there on the Apple II screen.

Wordbench's Print and Folder Managers perform printing and disk housekeeping functions, while the Add-In Manager provides software "hooks" for accessories like Brainstormer, a four-in-one application that stimulates creativity and improves style. It gives you practice in Free Writing, Invisible Writing, Nutshelling, and Goal Setting to help your writing become less inhibited, more concise, and increasingly reader-directed.

Other Wordbench writing tools include Viewer (compare two documents) and Word Lists (create a dictionary of sexist terms or other words you want to avoid and Wordbench will flag them in your work).

Documentation is thorough: Three separate manuals (*Reference*, *Tutorial*, and *User's Guide*) and a laminated quick-reference card are included with the program.

Wordbench's design is logical; its interface, intuitive. Best of all, its approach to writing is comprehensive. Look for an in-depth review in an upcoming issue of *inCider*. □ **—C.F.**

We'd Show You The New Laser 128EX/2, Only We Don't Want Apple To See It.

They could get ideas. For years our 128EX® has set records for being three times faster than an Apple®//c. It offers memory expansion to 1 MB and so many other built-in features *inCider* calls it a "fully loaded, souped-up" computer.

Now, we've done it again.

The LASER 128EX/2® surpasses even the 128EX. It offers you a choice of a 5¼" or a 3½" disk drive. It includes a ProDOS®-compatible real-time clock. It comes with serial, parallel, joystick and video expansion ports, plus MIDI capabilities for devices using the Musical Instrument Digital Interface standard. And, like the IIGS,® the 128EX/2 daisy chains up to four disk drives, mixing both 5¼" and 3½" drives.

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Just promise us one thing. You won't show it to Apple.

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colors. The program supports printing on an Apple LaserWriter.

MouseWrite's built-in spelling checker doesn't dawdle, and the program provides an assessment of the reading level required to understand your prose. Low-level telecommunications software supporting 300-baud modems is built in.

SENSIBLE AND SOPHISTICATED

At first glance, Sensible Writer looks a lot like MouseWrite. This program also organizes its features in pull-down menus—Sensible Writer, File, Edit, Page, Style, Locate, and Options—and sports a Mac-like interface.

As in MouseWrite, Sensible Writer has vertical and horizontal scroll bars to help you maneuver your way through a document. The mouse isn't required, but it's recommended.

Rulers, both master and local, are somewhat more sophisticated than MouseWrite's: You can set justification as well as margins, tabs, and line spacing this way and avoid typing any embedded commands. Sensible Writer supports color printing (blue, red, green) and laser printing on the Hewlett-Packard LaserJet printer.

At $99.95, Sensible Writer is less expensive than MouseWrite, but offers no built-in spelling checker or telecommunications software. Sensible Software offers two enhancement products, though: **Sensible Speller**, a spelling checker with three optional

Product Information

AppleWorks 2.0
Claris Corporation
440 Clyde Avenue
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(619) 442-0524
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Sensible Writer, $99.95
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335 East Big Beaver
Suite 207
Troy, MI 48083
(313) 528-1950

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MacroTools, $25
PowerPack, $49.95
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SuperFonts, $69.95
Thesaurus, $49.95
UltraMacros, $59.95
Beagle Bros
6215 Ferris Square
Suite 100
San Diego, CA 92121
(800) 345-1750
(800) 992-4022 (CA)
(619) 452-5500

Reader Service No. 327

Trio
Softsync Inc.
162 Madison Avenue
New York, NY 10016
(212) 685-2080
$29.95

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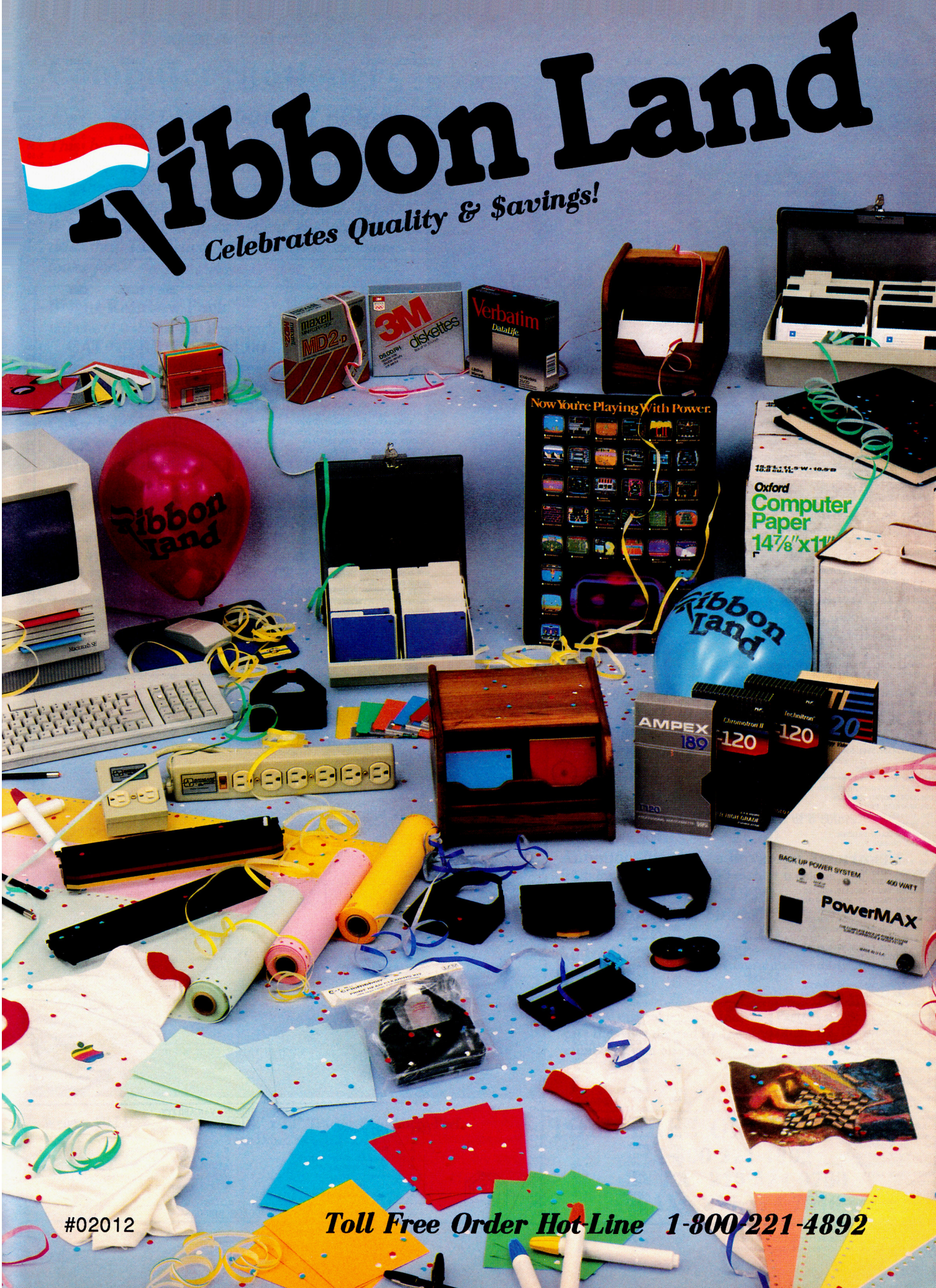
Wordbench
Addison-Wesley Publishing
Software Division
6 Jacob Way
Reading, MA 01867
(617) 944-3700
(800) 447-2226
$149

Reader Service No. 329

WordPerfect Corp.
288 West Center Street
Orem, UT 84057
(801) 225-5000
$179

Reader Service No. 330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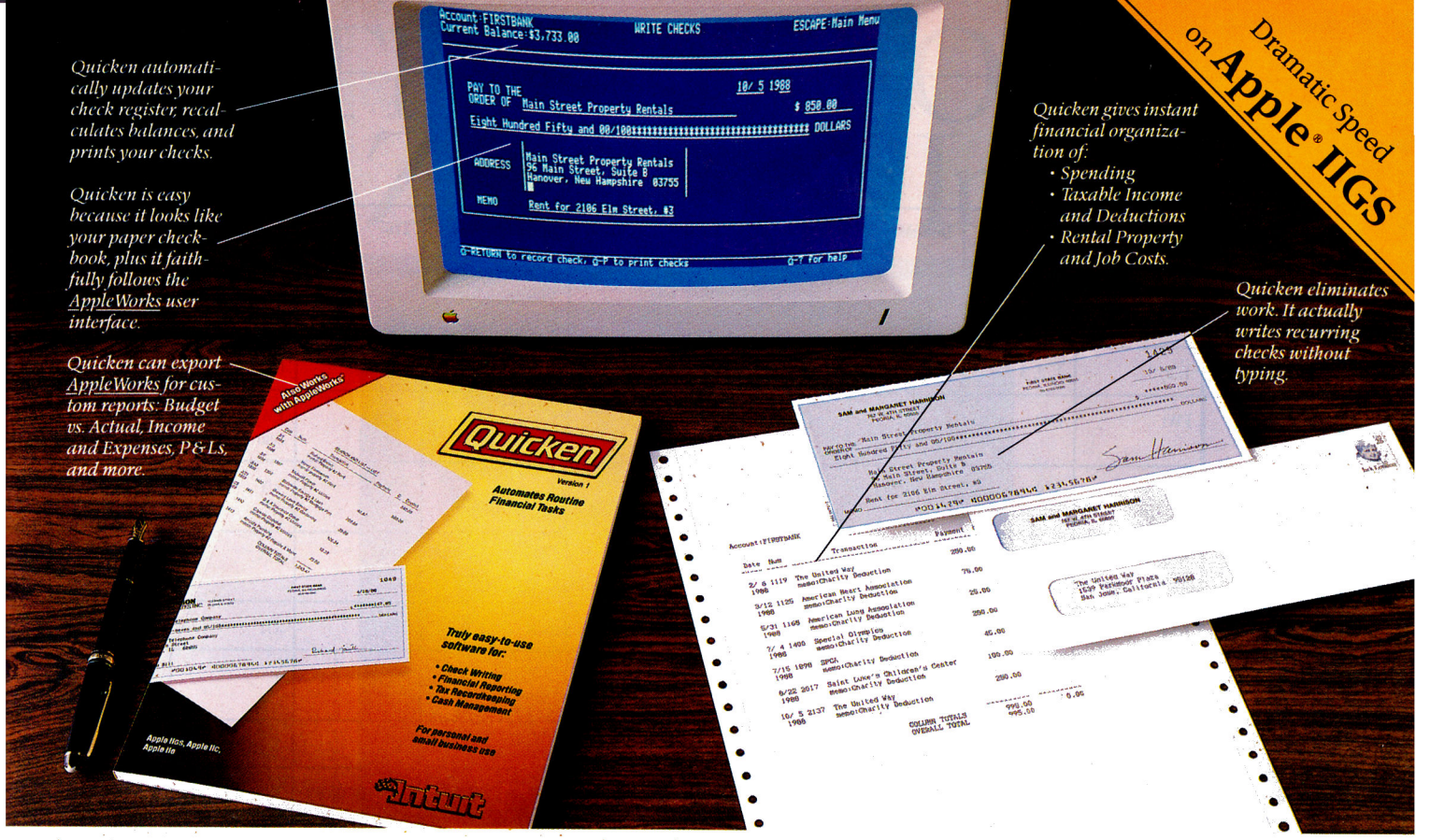
NINE IIE/IIC WORD PROCESSORS COMPARED

Program	AppleWorks	Bank St. Writer Plus	DoReMe	Easy Working Writer	MouseWrite	Sensible Writer	Trio	WordPerfect	Wordbench
Version	2.0	1.2 (5¼"), 1.0 (3½")	2.1	1.03	2.6.8b	1.02	1.2	1.1	7.21 beta
Retail price	$249	$79.95	$79.95	$9.95	$149.95	$99.95	$29.95	$179	$149
Operating system	ProDOS 8 1.3	ProDOS 1.2	ProDOS 8 1.4	ProDOS 1.1.1	ProDOS 8 1.4 (3½"), 1.1.1 (5¼")	ProDOS 8 1.2	ProDOS 8 1.4	ProDOS 8 1.4	ProDOS 8 1.4
Copy protection?	N	Y (program, free backup)/N (dictionary, thesaurus)	N	N	N	N	N	N	N
Hardware required	128K IIe/c/GS	128K IIe/c/GS	128K IIe/c/GS, Laser 128	128K IIe/c/GS, Laser 128 series, Franklin 500 and 2000 series	128K enhanced IIe/c/GS, Laser 128 series, Franklin 500 and 2000, 384K RAM card for expanded desktop	128K enhanced IIe/c/GS	128K enhanced IIe/c/GS, Laser 128 series, all Franklin models	128K IIe/c/GS, Laser 128 series, Franklin 2100 and 2200	128K IIe/c/GS
Input devices supported	keyboard	keyboard, mouse	keyboard	keyboard	keyboard, mouse	keyboard, mouse	keyboard, some mouse features	keyboard	keyboard
Package disk format	3½", 5¼"	5¼" (3½" swap $5)	5¼"	5¼"	3½", 5¼"	3½", 5¼"	3½" or 5¼" (swap)	3½", 5¼"	3½", 5¼"
Hardware recommended	2nd drive	2nd drive, high-capacity drive, or hard drive	2nd drive, hard drive, 1MB RAM	—	mouse, 512K RAM card, modem	mouse	—	2nd drive	2nd drive
Dot-matrix printers supported	11 drivers, custom	virtually all	12 drivers, other	unspecified models (Apple parallel default)	10 drivers, 3 custom	9 drivers, custom	virtually all	virtually all	20 drivers, create new
Built-in type styles	b, u, sb, sp	b, u	b, sb, sp, u	b, u	b, i, sb, sp, u, c	b, i, sb, sp, u, c	none	b, sb, sp, u	b, i, sb, sp, u, special text
Pitch supported	4–24 cpi, 4–10, 12, 15, 17 cpi ImageWriter II	5–15 cpi	10, 17 cpi	normal, compressed, expanded	10, 17, 5 cpi	10, 12, 17 ImageWriter II	macro-defined	varies with printer	8, 10, 12 cpi
Custom printer commands?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Print-quality modes	1	1	1	1	2 (draft, high)	2 (draft, correspondence)	1	2 (draft, NLQ)	1
Color printing?	N	N	N	N	Y (RGBYOP)	Y (RGB)	N	N	N

Program	AppleWorks	Bank St. Writer Plus	DoReMe	Easy Working Writer	MouseWrite	Sensible Writer	Trio	WordPerfect	Wordbench
Print spooling?	N	N	N	N	Y (expanded desktop)	N	N	Y	N
Print screen?	Y	N	Y	N	N	N	N	N	N
Print preview/ view page breaks?	N/Y	Y/Y	Y/Y	Y/Y	N/Y	N/Y	N/N	N/Y	Y/Y
Multiple copies printed?	Y	Y	Y	N	Y	N	N	Y	Y
Daisywheel printers?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Laser printers?	N	N	Y (HP)	N	Y (Apple LW)	Y (HPLJ)	N	N	Y (Apple LW)
Display 20/40/80 columns?	N/N/Y	N/Y/Y	N/N/Y	N/N/Y	N/N/Y	N/N/Y	N/N/Y	N/N/Y	N/N/Y
Format data disk?	Y	Y	Y	Y (5¼")	Y	Y	Y	Y	Y
Import/export ASCII files?	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y
Import/export AppleWorks wp files?	Y/Y	N/N	Y/N	N/N	Y/N	Y/Y	N/N	N/N	N/N
Import graphics?	N	N	Y (file-type $F4 noncompressed HGR)	N	N	N	N	N	N
User interface	stacking file card, OA commands	pull-down menu bar	menu bars, OA commands	pull-down menu bar, OA and control commands	Mac, mousetext, OA and control commands	Mac, mousetext, OA and control commands	command bar, OA and control commands	clean screen, keyboard template, OA and SA commands	drop-down menus, OA commands
On-line help?	Y	Y	Y	Y	N	Y	Y	Y	Y
Toll-free phone support?	N	Y	N	N	N	N	N	Y	N
Money-back guarantee?	N	Y (90 days)	N	N	Y (30 days)	N	N	N	N
Documentation	GIQRST	GIQRST*	EIRST	R	IQRST	EIQRST	EIQRS	EGIQRST	IQRST
On-line status display?	Y (available RAM)	Y (available RAM, RAM used)	Y (document size: words, pages)	Y (available RAM characters)	Y (available RAM, document size: K, lines)	Y (available RAM, document size: K, pages)	Y (remaining characters, lines)	Y (remaining disk space)	Y (available RAM and disk space)
Multiple documents on desktop?	Y	N	N	N	Y (12, expanded only)	Y (2)	N	N	Y (2)
Typical document capacity	18 ssp, 511 pages absolute	6 ssp	25 ssp on 128K	12 ssp	16–18 ssp	8–10 ssp	9 ssp	80 ssp 5¼", 16MB absolute max	15 ssp, 500 dsp absolute max
Link files (printing long documents)?	N	Y	Y	Y	Y	Y	Y	Y	Y



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Martin Blumenthal, **inCider Magazine**

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Ken Landis, **A+ Magazine**

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Program	AppleWorks	Bank St. Writer Plus	DoReMe	Easy Working Writer	MouseWrite	Sensible Writer	Trio	WordPerfect	Wordbench
Tabs/decimal tabs	Y/N	Y/Y	Y/N	Y/N	Y/N	Y/N	Y/N	Y/Y	Y/Y
Line spacing	1, 2, 3	1, 2, 3	1, 2, 3	1, 2	1, 2, 3	1, 1½, 2	1, 2, 3	0.5, 1, 1.5, etc.	1, 2, 3
Search/replace	FWt	FWt	FWtc	FWt	FWtc	FWtc	FWt	FWtc, BWtc search	FWBWtc
Headers/ footers?	Y/Y	Y/N	Y/Y	Y/Y	Y/Y	Y/Y	Y/N	Y/Y	Y/Y
Footnotes/ endnotes?	N/N	N/N	N/N	N/N	Y/Y	N/N	N/N	Y/N	Y/Y
Protection?	N/N	N/N	Y/Y	N/N	N/N	N/N	N/N	Y/Y	N/N
Force page break?	Y	Y	Y	N	Y	Y	N	Y	Y
Spelling check?	N	Y	Y	Y	Y	N	N	Y	Y
Dictionary word search?	N	Y	N	N	Y	N	N	Y	Y
User dictionary?	N	Y	Y	N	Y	N	N	Y	Y
Word count/ frequency?	N/N	Y/Y	Y/N	N/N	Y/N	N/N	N/N	Y/N	Y/N
Thesaurus?	N	Y	N	N	N	N	N	N	Y
Mail merge?	Y	N	Y	N	Y	Y	Y	Y	N
Macros?	N	Y	Y	N	Y	N	Y	Y	Y
Integrated modules	db, ss	—	db, ss, charting	—	—	—	db, ss	—	outliner, notetaker, reference tool
Desk accessories	—	calculator	calendar, typewriter	—	clock, alarm, puzzle, multiprinter	envelope typer	calendar, calculator, notepad	—	brainstormer
Add-ons	scores of accessories	—	—	filer, planner	DMP utilities**	grammar, speller, dictionaries	—	—	file-conversion utilities

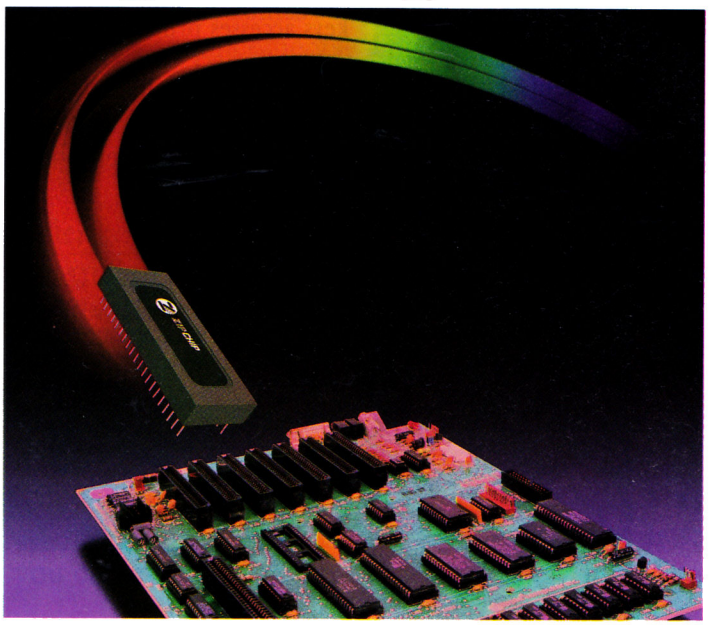
* tutorial on disk only
** custom fonts available from Vilberg Brothers Computing, P.O. Box 971119, Miami, FL 33197

Y yes
N no
K kilobytes
MB megabytes
cpi characters per inch
RGB red, green, blue
YOP yellow, orange, purple
b bold
i italic
sb subscript
sp superscript
u underline
c custom

NLQ near-letter-quality
HP Hewlett-Packard Printer-Control Language
HPLJ Hewlett-Packard Letterjet
LW LaserWriter
HGR high-resolution graphics
wp word processor
OA open-apple key
SA solid-apple key
ssp single-spaced pages
dsp double-spaced pages
E error message/troubleshooting section
G glossary

I index
Q quick-reference card
R reference section
T tutorial
S samples on disk
max maximum
FW forward
BW backward
t text
c codes
db database manager
ss spreadsheet
DMP dot-matrix printer

The Word Is Out
Zip Chip Is In



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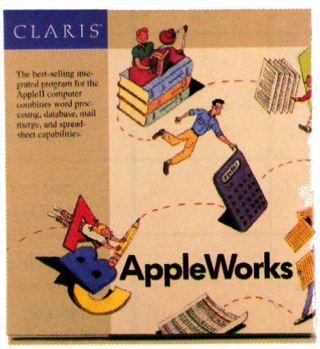
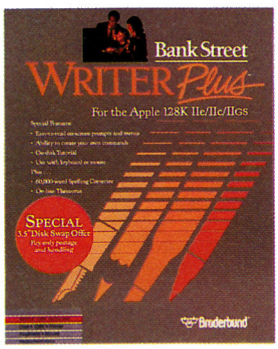
add-on dictionaries (Technical, Stedman's Medical, and Black's Law), and **Sensible Grammar**, a grammar, style, and punctuation checker.

Registered owners of Sensible Writer, Sensible Speller, and Sensible Grammar can receive a free, three-in-one, 3½-inch disk containing all three programs especially configured to run on a GS with at least 1 megabyte of RAM (random-access memory).

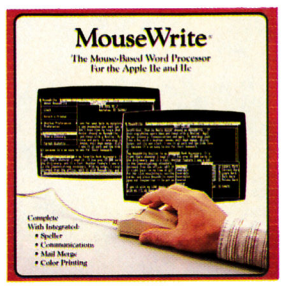
Open apple-5, for example, is the underline toggle. Solid apple-6 lets you activate a macro. Pressing the open-apple and hyphen keys accesses printer-control features.

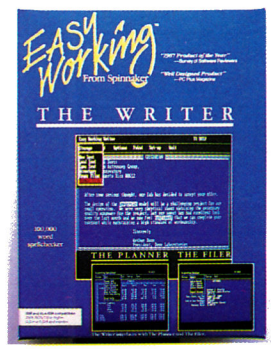
WordPerfect uses virtual-memory management to process files. As a result, the size of a document you can work on at any one time is limited not by your computer's RAM (an increasingly expensive proposition in these days of skyrocketing





Left, Claris' classic AppleWorks features an integrated word processor/database manager/spreadsheet combination, plus room for add-on tools and templates. Right, Bank Street Writer Plus from Broderbund offers an easy-to-use menu-bar interface plus spelling checker and thesaurus.





Left, Roger Wagner's MouseWrite provides a Mac-style mouse interface, downloadable fonts, color printing, and basic telecommunications software. Right, Easy Working: The Writer from Spinnaker is bare-bones and inexpensive.

TRIO—LIGHT DUTY

Believe it or not, you can get an integrated program (word processor, database manager, and spreadsheet planner) with macro and mail-merge capabilities *and* desk accessories (calendar, calculator, notepad) for $30. Sounds like Joe Isuzu talking, doesn't it?

Softsync has beefed up its latest version of Trio—even added mouse support for certain features—and slashed the price in half to sell the program in stores like KMart and Sears.

The Trio word processor doesn't share AppleWorks' expandability, Bank Street Writer's friendliness, DoReMe's power, MouseWrite's versatility, or Sensible Writer's solid performance, though. It isn't especially feature-filled—you have to use the return key repeatedly to force a page break, for example—but its rudimentary functionality should prove adequate for light-duty, personal tasks.

WORDPERFECT POWER

Last, but by no means least, WordPerfect for the Apple IIe/IIc offers more power features than you're likely to find anywhere in the Apple II world. Despite its capabilities, the program isn't especially difficult to learn, thanks to an adhesive-backed plastic "cheat sheet" template that fits neatly above the number row.

WordPerfect turns keys in the number row into function keys when used in conjunction with the open- or solid-apple key. chip prices), but by the amount of storage space available on disk—about 80 single-spaced pages on a floppy disk and up to 16 megabytes on a hard disk. Working with such large files can be a mixed blessing, however: Editing speed sometimes suffers.

One of WordPerfect's nicest features—aside from its nearly cosmopolitan printer support—is its "clean screen" appearance. Except when you display formatting codes (Solid apple-2), the screen is essentially devoid of distractions.

STAMP OUT WRITER'S BLOCK

Whether your writing projects are limited to everyday personal and business correspondence or extend to professional manuscripts, technical reports, and doctoral dissertations, Apple II word processors offer something for nearly everyone. Programs like AppleWorks, MouseWrite, and WordPerfect may not turn you into a Jonathan Swift, but they'll probably help you communicate better to some degree or another—even if only more confidently and efficiently.■

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

Æ Update . . .

A new line of Apple IIc Plus memory cards will be introduced soon from Applied Engineering. An exciting array of features is planned, including RAM disk capability and automatic AppleWorks enhancements. The cards will also be compatible with the latter versions of the original IIc. AE's Z-RAM Ultra series, compatible with the original IIc, is currently available for delivery. Contact Applied Engineering sales for further information on IIc Plus and original IIc expansion products.

The TransWarp accelerator card is available for immediate delivery. In addition to accelerating both the Apple IIe and II+ approximately 3½ times, the card has 256K of on-board memory (used for acceleration purposes) that can be utilized as Apple standard language card memory or extended 80 column card type memory and is priced at $219. AE is much closer to finalization of its accelerator card for the IIGS, but will not advertise the product until it is immediately available.

A lowercase ROM chip for the II+ is now available from AE. This chip plugs directly into the motherboard and allows your II+ to display lowercase letters. With the font shift modification, you can even switch serif and sans serif fonts. The chip retails for $24.

Applied Engineering now supports AppleWorks 2.1 with all its memory cards, including PC Transporter. The latest version of AW 2 Expander, AE's own AppleWorks enhancement package, is 3.01 and includes a full-color Super Hi-Res graphic test for GS-RAM and GS-RAM Plus. It also features a CAS before RAS memory chip test for GS-RAM, GS-RAM Plus, RamWorks, Z-RAM and RamFactor. The modified AE Cache included with 3.01 works with any GS specific memory card connected to RamKeeper and with system 3.2 and ProDOS 8 v1.6. The update is available for $15.

PC Transporter's software upgrade is now available. The upgraded PCT software provides additional capability and easier operation. New capabilities include: additional printing functions for the ImageWriter printer, higher data rate (up to 4800 bps) for some communications programs and improved operation for games and other copy-protected programs. The software also handles a wider variety of IBM software now on the market. The update is available from AE for $15.

DataLink 1200's EPROM has been upgraded, to allow sending and receiving files using the X-modem protocol—even without software. The new 2.0 version replaces the 1.0 version of the EPROM firmware. For existing DataLink 1200 owners, the upgrade for the new EPROM is $20.

Applied Engineering now makes 1 MEG and 256K expansion modules for the Macintosh Plus, SE and Macintosh II. But don't worry—we remain fully committed to the Apple II and have no plans to reduce activities in the development of Apple II products.

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A RHAPSODY OF WORDS

Biting my truant pen, beating myself for spite:
Fool! said my Muse to me, look in thy heart and write.

—Sir Philip Sidney

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

Your GS is a master of composition—in all *three* senses of the word. This Renaissance machine can of course help you create original music and artwork of all descriptions. Don't be fooled, though: *GS* may stand for *graphics* and *sound*, but the GS is no slouch as a wordsmith, either.

Sure, you can choose among virtually all 8-bit word processors for the Apple II family, including those described in the accompanying articles, "Polish Your Words" and "Word Processors Make the Grade" (pp. 60 and 78). But if you want a word processor designed to take advantage of the GS' native talents, check out **MultiScribe GS** from Claris, **Writer's Choice Elite** from Activision/Mediagenic, and **WordPerfect for the Apple IIGS** from WordPerfect Corporation.

For additional information and in-depth reviews of these programs, see "Color My Words" (November 1987, p. 73), "The Last Word" (July 1988, p. 28), and "The Well-Dressed Desktop" (August 1988, p. 38).

The following "nutshell" reviews, and the accompanying feature-comparison table, can help you decide which word processor will bring out the best in your GS—and in you.

MULTISCRIBE GS—THE HANDSOME ONE

MultiScribe GS is so good that even Apple Computer bought it! Technically, Claris Corporation, Apple's software spinoff, purchased the rights to the program; no doubt what impressed the "powers that be" were MultiScribe GS' potpourri of friendly features.

The program adheres strongly to Apple Human Interface standards, making it among the easiest to learn and most WYSIWYG (what you see is what you get) of Apple II programs. You access features by mouse from MultiScribe GS' ten pull-down menus. Dialog boxes assist you in fine-tuning your options.

A number of alternative keyboard commands—combinations of the open-apple key and another key, usually mnemonic—let you rest the mouse during moments of heavy concentration and still perform functions such as finding a specific word.

MultiScribe GS adheres to "writer's standards," too, offering once-heralded, but now expected, word-processing features, such as the addition of headers and footers, a text clipboard, and full formatting of documents.

Set left and right margins with the program's graphics ruler. Use the mouse to pick up tabs from the "tab well" and slide them into place. Click on icons for spacing and justification.

What writer can't use a spelling checker and thesaurus at least once in a while? MultiScribe GS' "dictionary" has 80,000 entries; its thesaurus can generate up to 40,000 head words.

MultiScribe GS' graphics appearance makes it handsome to look at with its array of 11 typefaces. It also makes the program logy in scrolling, reformatting, and keeping up with zippy typists. But the slowest feature is the program's printing, a nevertheless necessary inconvenience for producing the ultimate in quality graphics hardcopy.

MultiScribe GS offers some features you won't find in other word processors. It supports object-oriented and bit-mapped graphics, for one thing. Create simple illustrations or borders with the program's drawing tools or import original or canned artwork from GS drawing or paint programs.

MultiScribe GS lets you both type *and* print in color. At any one time, you can select (or custom mix) any 16 of the GS' 4096 possible colors. Warning: Some hues don't look crisp on screen and appear even soggier in print.

WRITER'S CHOICE ELITE—A POOR RELATION?

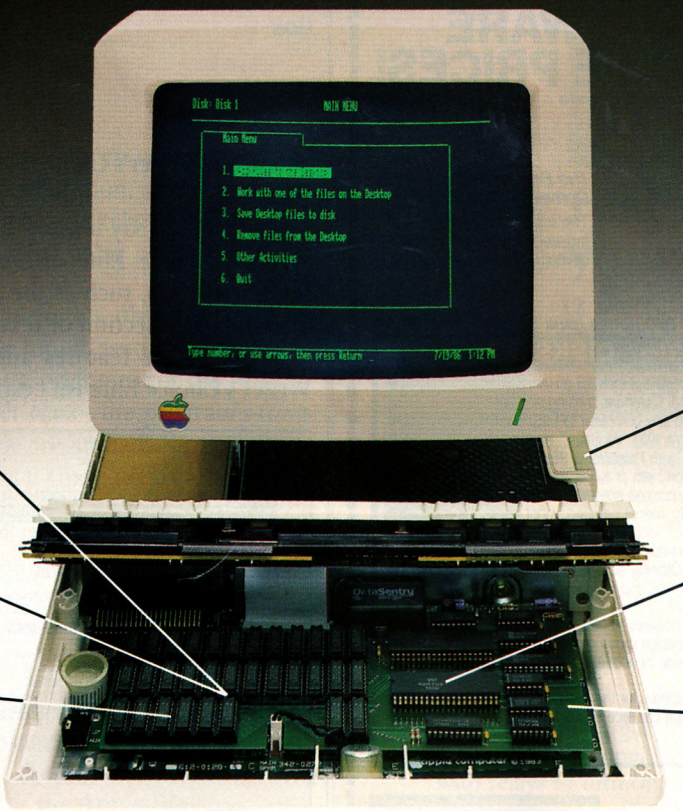
This one's also WYSIWYG, also ruler-based, also mouse-ori-

THREE GS WORD PROCESSORS COMPARED

Program	MultiScribe GS	WordPerfect GS	Writer's Choice Elite
Version tested	3.01	2.0g	1.1
Retail price	$99.95	$179	$89.95
Operating system	ProDOS 16	ProDOS 16 1.3	ProDOS 16 1.2 all versions
Copy protection?	Y* key disk	N	N
Hardware required	512K, 3½" drive	512K, 3½" drive	512K, 3½" drive
Hardware recommended	768K	2nd drive or hard disk	1.25MB
Input devices supported	mouse	mouse, keyboard	mouse
Dot-matrix printers supported	ImageWriter, Epsons above RX	few dozen popular brands	ImageWriter
Daisywheel printers?	N	Y	N
Printer interfaces supported	many popular interface cards	parallel and serial	GS only
Print selected text/pages?	N/Y	Y	N/Y
Multicopy printing?	Y	Y	Y
Paper feed	C, H	C, H, SF	C, H
Color printing?	Y	N	Y
Program-controlled print-quality modes	3 (draft, faster, special NLQ), 5 using darker command	1 (print quality as printer options, or fonts)	3 (draft, better text, better color)
Special print effects	SW, RD	N/A	SW, RD
Laser printing?	Y	Y	Y
Format data disks?	N	Y	N
Import graphics?	Y	N	Y
Import/export ASCII files?	Y/Y	Y/Y	Y/Y
Import AppleWorks files directly?	Y	N (only with conversion program on separate utilities disk)	N
On-line help?	N	Y	N

Program	MultiScribe GS	WordPerfect GS	Writer's Choice Elite
User interface	graphics screen, 10 pull-down menus	text screen, 10 pull-down menus, help and feature search	graphics screen, 9 pull-down menus
Documentation	200 + pages spiral, TRGIQ	500 + pages slipcase binder, TRGIQS	170 pages spiral, TRGI
Typefaces	11	any supported by DMP selected, varies with daisywheels available	13
Type styles	10	8 plus others supported by DMP	10
Sizes (in points)	6–48	6, 8, 10 standard, user-selected font/pitch, varies with DMP or daisywheel	6–32
Document length	varies with RAM	varies with disk medium (about 800K on 3½" disk), 6MB absolute	varies with RAM (512K: 3–5 double-spaced pages in default font)
Page formatting	rulers	traditional	rulers
Status (memory)?	N	N	Y (# characters remaining)
Graphics toolkit?	Y	N	N
Multiple documents on screen?	Y (8 max)	Y	Y (16 max)
Search/replace	FW (text only)	FW, BW (text and codes)	FW (text only)
Auto time/date stamp?	Y	Y	Y
Headers/footers	1/1	2/2	1/1
Footnotes/endnotes?	N/N	Y/Y	N/N
Spelling checker?	Y (80,000 words)	Y (115,000 words)	N
Thesaurus?	Y (40,000 entry points)	Y (10,000 head words)	N
Mail merge?	N	Y	N
Redefine keyboard commands?	N	Y	N
Macros?	N	Y	N
Desk accessories	clock	supports, does not include	clock
Protect widows/orphans?	N	Y	N
Hyphenation help?	N	Y	N
Append files?	N	Y	N
Show clipboard?	Y	Y	Y
Supports RAM disk?	Y	Y	N
Toll-free support?	N	Y	N

* unprotected backup $20
Y yes
N no
K kilobytes
MB megabytes
DMP dot-matrix printer
C continuous
H hand-fed
SF sheet feeder
NLQ near-letter-quality
SW sideways
RD 50% reduction
N/A not available
T tutorial
R reference
S troubleshooting
G glossary
I index
Q quick-reference card
RAM random-access memory
max maximum
FW forward
BW backward



Multiply memory — Add up to 1 MEG with Z-RAM Ultra.

Multiply speed — Run and load programs up to 30 times faster.

Multiply production — Printer buffer lets you keep working while the system prints AppleWorks files.

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Multiply efficiency — Optional 65C816 16-bit processor plugs in easily with no other component changes.

Multiply applications — Run CP/M programs with built-in Z-80B microprocessor.

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There's an AppleWorks printer buffer so you keep working while files are printed.

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For more information or to order your Z-RAM Ultra, see your dealer or call 214-241-6060 between 9 am and 11 pm, 7 days. Or send check or money order to Applied Engineering.

Prices

Z-RAM Ultra 3 (with memory, clock and CP/M)
256K — **$399** 512K — **$549**
1 MEG — **$849**

Z-RAM Ultra 2 (with memory and clock)
256K — **$319** 512K — **$469**
1 MEG — **$769**

Z-RAM Ultra 1 (memory only — expandable to 512K)
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16-bit 65C816 Upgrade **$79**

Z-80c Card to run CP/M software (no memory upgrade) **$159**

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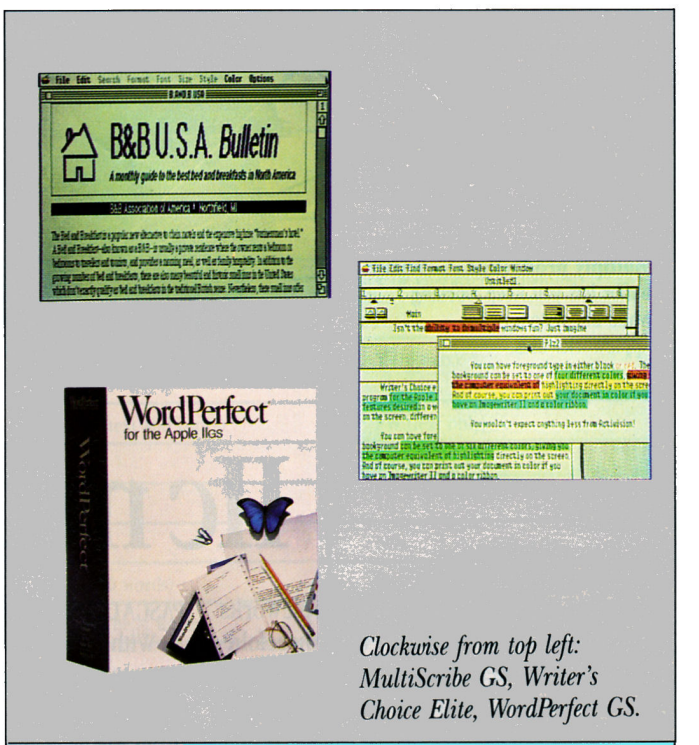
ented, but Writer's Choice Elite is clearly MultiScribe GS' "poor cousin."

That's not to say it's not the program for you. For one thing, Writer's Choice Elite offers a few features not available in MultiScribe GS, such as the ability to color the "background" or cross out a section of text.

Besides these features and the ability to type text in red, Writer's Choice Elite isn't especially colorful in the MultiScribe



Clockwise from top left: MultiScribe GS, Writer's Choice Elite, WordPerfect GS.

Product Information

Clip Art Gallery, $29.95
Draw Plus, $89.95
Paintworks Plus, $69.95
(includes Clip Art Gallery)
Writer's Choice Elite, $89.95
Paintworks Gold, $99.95
Paint Write Draw, $129.95
Activision/Mediagenic
3885 Bohannon Drive
Menlo Park, CA 94025
(415) 329-0800

Reader Service No. 310

MultiScribe GS
Claris Corporation
440 Clyde Avenue
Mountain View, CA 94043
(415) 960-1500
$99.95

Reader Service No. 311

WordPerfect for the Apple IIGS
WordPerfect Corporation
288 West Center Street
Orem, UT 84057
(801) 225-5000
$179

Reader Service No. 312

Circle 269 on Reader Service Card.

GS sense of the word. There's no pull-down color palette, no RGB (red, green, blue) or HSI (hue, saturation, intensity) sliders. When you think about how often you're likely to type in taupe or print in puce, you may decide that color printing isn't for you anyway.

Mediagenic's program doesn't include a disk-based spelling checker or thesaurus. Maybe you've found, as some writers have, that paperback versions serve just as well most of the time.

One gripe focuses on—or rather *blurs*—the program's fonts. On screen, and even in print, some are unreadable. Still, if you pick and choose among them, you'll find at least a half-dozen that are clear both on screen and on paper.

Writer's Choice Elite doesn't "do" art. You have to create illustrations with Mediagenic's other programs, **Draw Plus** or **Paintworks Plus** (**Paintworks Gold** is compatible, too), then import it.

WORDPERFECT GS—WORD POWER

If you eschew fancy fonts and sluggish graphics screens and routinely put extraordinary demands on your word-processing program, test-drive WordPerfect for the Apple IIGS.

For mouse advocates WordPerfect GS sports pull-down menus and dialogs. For those who prefer the keyboard, the program offers an alternative route: Help and Feature Search options. Power users can redesign some commands and create their own command shortcuts in the form of macros.

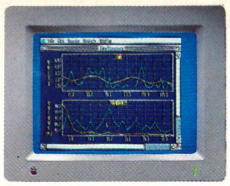
WordPerfect GS isn't nearly as graphics-oriented and colorful as MultiScribe GS or even Writer's Choice Elite. You format the traditional way by entering values—not by clicking icons.

To ease eyestrain and to facilitate editing, you can use the program's RGB sliders to change background, text, boldface, and inverse-boldface colors. But WordPerfect GS doesn't support color printing, nor does it handle object-oriented or bit-mapped graphics. It does support a wide assortment of dot-matrix and daisywheel printers and lets you configure as many as three.

Other special features let you automatically center text vertically on a page, alternate margins to accommodate report or book binding, manage footnotes and endnotes, format mailing labels and envelopes, perform mail-merge functions, and fill in forms. To complete its vast library of features, WordPerfect GS comes with a 115,000-word spelling checker and a 10,000-headword thesaurus.

WORDSPINNING DECISIONS

If you run a GS-assisted business for which word-processing performance is a top priority, WordPerfect GS is the program for you. If you're willing to sacrifice some of WordPerfect's power features for the sake of a graphics working environment, check out MultiScribe GS or Writer's Choice Elite. Of the two, MultiScribe GS has the edge in font clarity, print quality, and graphics capability, but Writer's Choice Elite—as part of the $179.95 **Paint Write Draw** bundle—may be too good a deal to pass up.■



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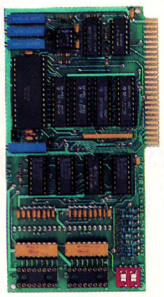

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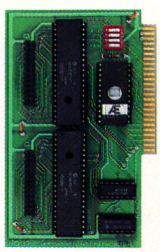

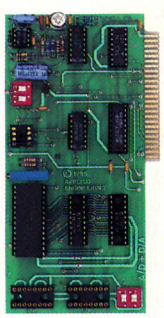

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WORD PROCESSORS MAKE THE GRADE

There is an art of reading, as well as an art of thinking, and an art of writing.
—Isaac D'Israeli

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

Whoever said the electronic age would transform us into a paperless society was probably just trying to placate the activists at Save the Trees. Committing thoughts to paper still remains the best way to share many kinds of information.

Top educational-software publishers such as Random House, Scholastic, MECC, and Sunburst Communications know that today's students must hone their writing skills if they want to succeed in tomorrow's professions. Each of these companies publishes a variety of language-arts programs to ensure that, as well as at least one educationally oriented word processor: Random House's **II Write**; Scholastic's **Bank Street Writer III**; MECC's **MECC Writer**; and Sunburst's **Magic Slate**, **Magic Slate II**, and **Muppet Slate**. (See the accompanying **table** of features for a comparison of these essential writing tools.)

SIGNS OF THE TIMES

Most of the educational word processors described here run on out-of-the-box Apple IIs. Naturally, a printer is strongly recommended. A second disk drive can make the writing process more convenient, but beyond these necessary luxuries, educational word-processing programs are no more finicky than other kinds of school software.

Despite their reasonable cost and modest hardware demands, the majority of these products have managed to keep in step with Apple II evolution. Often available in 3½-inch disk versions—as well as the old 5¼-inch standby—most are based on the ProDOS operating system.

Many are at least partly WYSIWYG (what you see is what you get), so students can get a good picture of what a book report or essay will look like even before they turn on the printer.

Most of these programs come with extensive support materials for teachers, including plenty of lesson plans and reproducible handouts. All four companies offer exemplary support services—free backup disks (sometimes free upgrades and lifetime disk warranties, too), toll-free telephone assistance, and a 30-day program-preview option.

II WRITE: COMMITTED TO WRITING ACHIEVEMENT

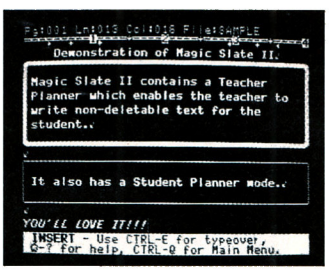
This graphics-oriented, Mac-like program from Random House Software features Apple Human Interface niceties such as pull-down menus for selecting program features, a scroll bar for getting around easily from page to page, and attractive typefaces for giving short stories and reports a professional touch.

You can use the mouse, but as Random House's Kris Ronningen-Fenrich emphasizes, the program's developers put an extraordinary amount of effort into II Write's "mouseless" mode. The result? Your classroom would probably be none the worse for not having those critters rolling around on desktops. Still, the mouse can make II Write fun to use and more Mac-like.

II Write offers ruler-based formatting. Rulers are graphics-based guides that make it easier to set left and right margins, place tabs, choose double spacing, or center a title. The program also accommodates headers and footers, options that let you determine top and bottom margins and place page numbers wherever you want. If rulers on screen become too distracting, II Write lets you shrink them to "skinny" size.

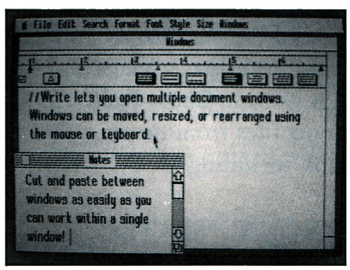
Another unique feature lets you copy the format of a ruler from one place in your report to another—before and after a long quotation, for example—or from one report to another. II Write allows as many as four movable, resizable windows open at one time.

In one window, you can have your composition; in another, your outline; in still another, a list of personal spelling demons.



Magic Slate II

Muppet Slate



II Write

Students can keep teacher-written story starters, style sheets, or worksheets in one window while they write or edit their compositions in a second.

Unlike graphics word processors designed specifically for the Apple IIGS (see the accompanying feature "A Rhapsody of Words," p. 72), II Write won't slow down nimble typists. Printing—even in high-quality mode, one of three available—is also reasonably fast.

A series of II Write-compatible programs from Random House Software helps students develop and improve their writing skills. **Mystery Writer's Club** (with an assist from Sherlock Holmes) helps kids develop stories in Dr. Watson's favorite genre. **Young Writer's Workshop** provides a complete writing curriculum; **Young Writer's Toolchest** is a series of template files that include a mini-thesaurus, a dictionary of commonly misspelled words, and lessons on résumé writing and footnote formatting. **Family Toolchest**, another series of templates, is designed for use with the home version of II Write. Templates include thank-you notes, a letter of complaint, a résumé, a personal dictionary, a list of commonly misspelled words, and story starters.

To underscore its commitment to II Write and to your children's or students' writing achievement, Random House is offering two freebies: an interactive II Write **demo disk** that lets you test-drive most of the program's features (including compatibility with your printer) and ***Random Notes***, a newsletter about the writing process for parents and teachers.

BANK STREET WRITER III: TOOLS TO POLISH YOUR SKILLS

This third-generation program, the most inherently well-rounded of those reviewed here, is easy to learn. Glide the mouse or use the cursor keys and the return key to select from the menu bar at the top of the screen. Pull-down and pop-up menus contain program options.

Bank Street Writer III emphasizes good writing with its series of tools to help students edit their work: a word-frequency list feature, a 50,000-synonym thesaurus, and a 60,000-word interactive dictionary. Teachers can turn off the dictionary's "automatic replacement" feature—students have to type each corrected word instead of just having the program do it for them. Use Bank Street Writer III's wildcard or anagram dictionary-search features to find words that fit a specified pattern or to "cheat" on crossword puzzles.

At press time, Scholastic Software was putting the finishing touches on another writer's treasure trove, **Success with Writing**. According to Scholastic's Paula Weinberger, Success with Writ- ►

ing isn't just a word processor—it's a *writing* processor for "prewriting," arranging, composing, editing, and evaluating a written work. It assists students in brainstorming ideas, creating free-form outlines, deciding the kind of piece they'll create (essay, story, report, letter), composing the text, checking spelling, zooming in on specific lines or sentences, flagging certain grammatical errors, and counting words.

MECC WRITER: PLAIN BUT EFFECTIVE

A bare-bones educational word processor, MECC Writer probably appeals most to beginners who appreciate its clean-screen interface. According to MECC's Patricia Kallio, the program has been implemented successfully in special-education settings.

A command-driven word processor, MECC Writer has no pull-down menus, no command bars, no graphics interface. Instead, use control-key commands and dot commands (like *.LM10* to set the left margin) to perform editing or formatting tasks such as underlining text.

MECC Writer enhancements include **MECC Speller** and **MECC Editor**, a grammar checker. **MECC Write Start**, a writing curriculum with lesson plans and student activities, has MECC Writer at its core. **Ghost Writer**, another MECC editing toolkit, can import files from nearly a dozen popular word-processing programs, including MECC Writer.

ELECTRONIC "SLATES"

Donna Stanger, a former educator and the driving force behind Sunburst's Magic Slate, Magic Slate II, and Muppet Slate, recalls the early days of word processing on the Apple II Plus, when "state of the art" meant "all uppercase" Apple Writer or the 40-column version of Bank Street Writer. Teachers often found the first too cumbersome; the second, too easily outgrown.

What Stanger and the design team at Sunburst Communications set out to do was create a word processor that grows as your students do. The result: Magic Slate, a three-in-one word-processing program offering 20-, 40-, and 80-column working modes. The 20- and 40-column versions, both of which have picture menus, are geared toward younger students or older ones with visual impairments. The full-featured, 80-column version is appropriate for junior-high and high-school students and teachers.

Magic Slate II's commands are more or less consistent with those of the original Magic Slate, but Sunburst Communications' new word processor has been improved in a number of ways. Among its latest features are a "quick" printing format, the ability to save formatted ASCII text files for easier transfer by modem, more customizing options for teachers, and more built-in type styles.

In addition, Sunburst Communications has developed **Magic Slate Typestyles**, add-on font disks for both Magic Slate and Magic Slate II. With this design tool kids can even create their own typefaces.

Among Magic Slate II's unique features are Teacher Planner

Product Information

Bank Street Writer III,
$99.95, $79.95 educators
Corvus network version
$499.64, $399.75 educators
lab pack $162.45, $129.95 educators (5 program disks, dictionary disk, handbook)
Activity Files, $74.95 each, $59.95 educators
lab pack $112.45 each, $89.95 educators
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Writing Skills Bank
Writing Lab
Activity Book, $66, $49.50 educators
BSW III, Files, Book set,
$399.80, $279 educators
Success with Writing,
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Scholastic Software
730 Broadway
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(800) 325-6149
(800) 392-2179
(212) 505-3561

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$69.95 school edition,
$269.95 AppleShare edition,
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Young Writer's Toolchest,
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Young Writer's Workshop,
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201 East 50th Street
New York, NY 10022
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(800) 492-0782
(212) 751-2600

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St. Paul, MN 55126
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lab pack $297 (10 disks)
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Magic Slate II, $65
20-, 40-, 80-column versions pack $99
lab pack $195
$297 complete
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EDUCATIONAL WORD PROCESSORS COMPARED

Program	II Write	Bank St. Writer III	Magic Slate	Magic Slate II	MECC Writer	Muppet Slate
Version	2.00	N/A	1.4	1.0	1.2	1.0
Suggested grade level	4–12	2–12	2–12	2–12	6–12	Kn–2
School-edition price	$69.95	$79.95	$99.95	$65	$55	$75
Home-edition price	$59.95	$99.95	N/A	N/A	N/A	N/A
Operating system	ProDOS 8 1.6	ProDOS 8 1.2	ProDOS	ProDOS 8 1.4QB	DOS 3.3	ProDOS 8 1.4QB
Disk format	3½", 5¼"	3½", 5¼"	5¼"	3½", 5¼"	5¼"	3½", 5¼"
Hardware required	128K IIe/c/GS	128K IIe/c/GS	64K II Plus/e/c/GS	128K IIe/c/GS	64K IIe/c/GS, 80-column card	64K II Plus/e/c,GS
Input devices supported	keyboard, mouse	keyboard, mouse	keyboard	keyboard	keyboard	keyboard, MLK
Recommended	mouse	—	—	—	—	MLK, color monitor
DMP support?	Y	Y	Y	Y	Y	Y
Laser printing?	N	N	N	N	N	N
Color printing?	N	N	N	N	N	N
Multicopy printing?	Y	Y	Y	Y	N	N
Print-quality modes	3	1	1	4	1	1
Import/export ASCII?	Y/Y	Y/Y	Y/Y	Y/Y	N/N	N/N
Import AppleWorks wp?	Y	N	N	N	N	N
User interface	Mac	command bar, pull-down menus	picture menu (20/40), control commands and pop-up menus (80)	picture menu (20/40), control and OA commands, pop-up menus (80)	clean screen, control and dot commands	picture menu and icons (MLK)
WYSIWYG?	Y	N	Y (20/40), N (80)	Y	N	Y
Typefaces/styles	9 bf, it, pl, sb, sp, ul	pl, bf, ul	bf, it, ot, pl, sb, sp, ul	bf, it, ot, pl, sb, sp, st, ul	pl, ul	—
Typical max document	12 dsp	12 dsp	limited (disk space)	limited (disk space)	6–8 dsp	3 pages
Multiple documents on screen?	Y	N	Y (80-column, requires 128K)	N	N	N
20/40/80 columns?	N/A	Y/Y/Y	Y/Y/Y	Y/Y/Y	N/N/Y	N/A
Search/replace?	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	N/N
Headers/footers?	Y/Y	Y/N	Y/Y (40/80)	Y/Y (40/80)	N/N	N/N
Footnotes?	N	N	N	N	N	N
Macros?	N	Y	Y	Y	N	N
Spelling checker?	N	Y	N	N	N	N
Thesaurus?	N	Y	N	N	N	N
Force/view page breaks?	Y/Y	Y/Y	Y/Y (40/80)	Y/Y (40/80)	Y/N	N/N
Other writing aids	—	word frequency, dictionary search, line numbers	—	student planner boxes	—	—
Print chaining?	N	Y	N	Y	N	Y
Frozen text?	N	Y	N	Y	N	Y

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Y yes
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DMP dot-matrix printer
N/A not available
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Registered owners of 64K Magic Slate are in for an unusual surprise when they learn that Sunburst Communications offers free upgrades to Magic Slate II. Besides the program itself, you receive three manuals chock full of "lesson ideas."

"Despite reasonable cost and modest hardware demands, most of these programs have kept in step with Apple II evolution."

Magic Slate and Magic Slate II are designed for children aged 7 and up, but what about wee writers who are only 5 and 6? They have their very own electronic slate! Muppet Slate, an adorable "word and picture" processing program, features Kermit and Miss Piggy and the rest of your favorite make-believe friends. This program works with either the regular Apple keyboard or the children's keyboard **Muppet Learning Keys**. A color monitor is recommended.

Muppet Slate's interface is graphics-based; its large text, proportionally spaced. The program comes with ten borders for framing your "stories" and 126 clip-art pictures organized into familiar categories such as Animals and Body Parts. It's enough to make a GS owner drool with envy. (And Muppet Slate even runs on the Apple II Plus.)

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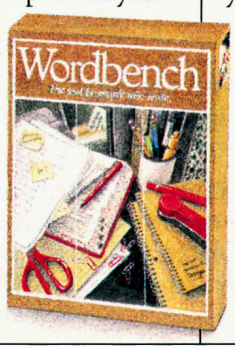

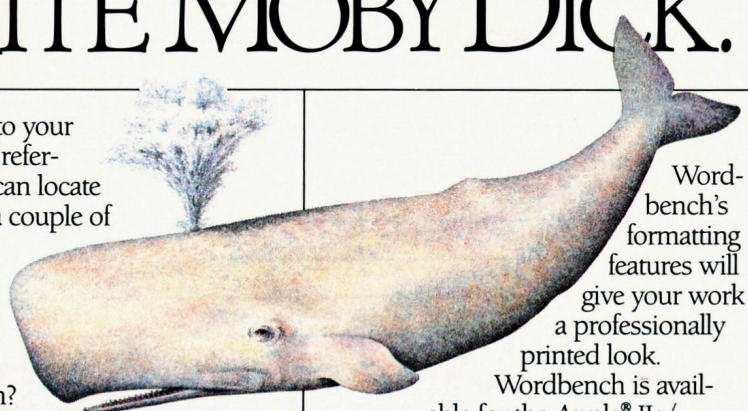

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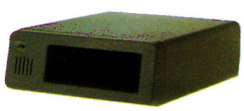

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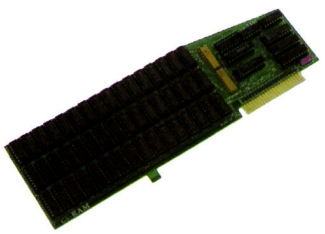

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Cash-Flow Trilogy: Part 3

"Cut and paste" last month's spreadsheet into a word-processor memo to create an information-packed document.

by Ruth K. Witkin

When is the whole greater than the sum of its parts? When it's two diverse documents mixed on a single page. A case in point: the seamless "superdocument" shown in **Figure 1**. The spreadsheet is the result of the last two AppleWorks in Action sessions ("Cash-Flow Trilogy: Part 1," September 1988, p. 80, and "Part 2," October 1988, p. 74).

In this session, you're head of a sports-equipment company; you'll compose a memo to your engineering manager, get a good workout in editing, practice cutting-and-pasting, and learn about formatting techniques. If you haven't created the spreadsheet yet, now is a good time to do it.

A MEMO FROM SCRATCH

Use the Startup and Program disks to bring up a new AppleWorks word-processor screen. Name this file **MEMO**. So that you don't have to switch data disks in midstream, work with the data disk containing the CASHFLOW file.

With such keystrokes as OA-M, hold down the open-apple key and type M. Other open-apple combinations move the cursor. When you see OA-left arrow (8 times), for example, hold down the open-apple key and tap the left-arrow key eight times.

ENTERING THE TEXT

The first task is to create the memo shown in **Figure 2**, which shows the text before editing. Press OA-Z to see the on-screen blots (hard-carriage-return markers) indicating where you press Return to end a paragraph or insert a blank line between paragraphs. Refer to the bottom of your screen to see the the number of the line on which you're working.

Now enter the text according to the instructions in the **Table**. If you make a typo, press the delete key to back up the cursor. Your cursor is in line 1 column 1.

MEMO TO: Nick Ferdinand

FROM: Harvey Crane

DATE: September 12, 1988

SUBJECT: CASH FLOW PROJECTIONS

The next few years will see the survival of the fittest in this industry, and this company is going to be among them. Based on my latest cash flow projections, we have a good shot at having the funds to expand our R&D operations.

	YEAR 1	P/Sales	Proj YEAR 2	P/Sales	Proj YEAR 3	P/Sales
Cash Sales	450,000	100.0%	20% 540,000	100.0%	20% 648,000	100.0%
Cost of Goods Sold	157,500	35.0%	35% 189,000	35.0%	35% 226,800	35.0%
Gross Profit	292,500	65.0%	351,000	65.0%	421,200	65.0%
Cash Disbursements:						
Salaries	75,000	16.7%	10% 82,500	15.3%	10% 90,750	14.0%
Payroll Taxes	15,000	3.3%	16,500	3.1%	18,150	2.8%
Rent	18,000	4.0%	15% 20,700	3.8%	15% 23,805	3.7%
Advertising	27,500	6.1%	15% 31,625	5.9%	15% 36,369	5.6%
Loan Repayment	20,799	4.6%	20,799	3.9%	20,799	3.2%
Insurance	15,000	3.3%	8% 16,200	3.0%	8% 17,496	2.7%
Office Expenses	9,000	2.0%	10% 9,900	1.8%	10% 10,890	1.7%
Utilities/Phone	7,500	1.7%	8% 8,100	1.5%	8% 8,748	1.3%
Maint & Repairs	2,000	.4%	5% 2,100	.4%	5% 2,205	.3%
Professional Fees	12,000	2.7%	10% 13,200	2.4%	10% 14,520	2.2%
Total Cash Disbursements	201,799	44.8%	221,624	41.0%	243,732	37.6%
Cash Flow Before Taxes	90,701	20.2%	129,376	24.0%	177,468	27.4%
Less: Income Taxes	22,345	5.0%	11,238	2.1%	16,103	2.5%
Cash Flow After Taxes	68,356	15.2%	118,138	21.9%	161,365	24.9%

At our meeting on the 15th, please be prepared to discuss the following topics and give specific recommendations:

1. The numbers breakdown on direct labor.
2. Where disbursements can be reduced.
3. Under what circumstances.

Figure 1. *Cash-flow spreadsheet combined with memo.*

EDITING THE TEXT

Figure 3 shows you where the memo could use some finishing touches. These changes are handwritten to make them easy to see. Chances are you won't ever hand-edit a printout because on-screen editing is so easy. First, a primer on cursors and keystrokes:

•To insert, place the insert cursor (a blinking underline) on the character to the right of the insertion. To overtype, place the overtype cursor (a blinking rec-►

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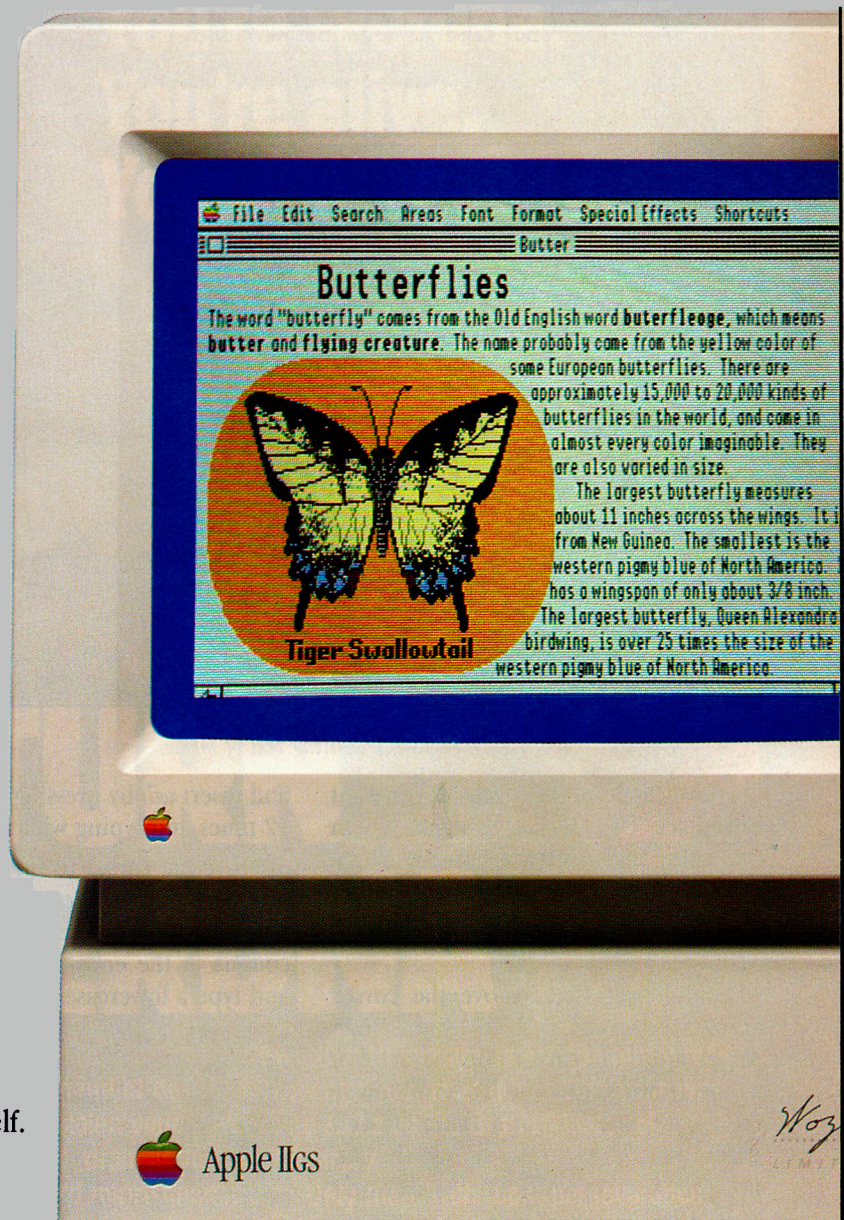

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MEMO TO:        Nick Ferdinand
FROM:           Harvey Crane
DATE:           September 12, 1988
SUBJECT:        CASH FLOWS PROJECTIONS

The next few years are going to see the survival of the
fittest. And this company is going to be a survivor. Based
on my latest cash flow projections, we have a good shot at
having the funds to expand our R&D operations.

At the meeting on the 15th, please be prepared to report on
the following topics:

1.  Where disbursements can be reduced.
2.  Under what circumstances.
3.  The numbers breakdown on direct labor.
```

Figure 2. *Text of memo.*

```
MEMO TO:        Nick Ferdinand
FROM:           Harvey Crane
DATE:           September 12, 1988
SUBJECT:        CASH FLOWS PROJECTIONS
(in this industry,)
The next few years are going to will see the survival of the
fittest. And this company is going to be a survivor mongthem. Based
on my latest cash flow projections, we have a good shot at
having the funds to expand our R&D operations.

At the our meeting on the 15th, please be prepared to report on discuss
the following topics: and give specific recommendations

2. Where disbursements can be reduced.
3. Under what circumstances.
1. The numbers breakdown on direct labor.
```

Figure 3. *Editing text of memo.*

tangle) directly on the character you want to replace. Use OA-E to switch between the insert and overtype cursors. When you delete text, place the cursor (either one) to the right of the doomed character and press the delete key.

•The following keys move the cursor around the screen: Left Arrow and Right Arrow move the cursor one character at a time; Down Arrow and Up Arrow move the cursor one line at a time; OA-Left Arrow and OA-Right Arrow hop the cursor from word to word. The AppleWorks Ruler, OA-1 through OA-9, jumps the cursor vertically through the document in proportional increments.

Now start editing. The numbers will help you keep your place.

1) Delete the *S* in *FLOWS*: Press OA-3 to jump the cursor to line 5. Move the cursor to line 4 column 26 and press the delete key.

2) Move the cursor to line 6 column 32 (the space between *to* and *see*). Working with the insert cursor, delete *are going to* and insert *will* by pressing the delete key 12 times and typing **will**.

3) Move the cursor to line 6 column 56 (the period after *fittest*). Press the spacebar, and type **in this industry,** (with a comma at the end). Press the spacebar and type a lowercase **a**.

4) Move the cursor to line 7 column 20 and press the delete key three times to delete the uppercase *A*, space, and period.

5) Move the cursor to line 7 column 49 (the space between *a* and *survivor*). Press OA-E to switch to the overtype cursor and type **mong them**. (The existing period ends the sentence.) Leave the overtype cursor active.

6) Move the cursor to line 11 column 4 (the *t* in *the*) and type **our**.

7) Move the cursor to line 11 column 51 (the *r* in *report*). Type **discuss**. Press OA-Y to delete the rest of the line (the word *on*). Press OA-E to switch to the insert cursor and press the spacebar.

8) Move the cursor to line 12 column 21 and press the spacebar. Type **and give specific recommendations** and leave the cursor where it is.

9) Shifting information is one of the true joys of word processing. Sentence 3 (*The numbers breakdown . . . .*) makes more sense as the first item in the list, so move the cursor to line 16 column 55. Press OA-M to start the Move command and hit Return to confirm *Within document*. Press OA-Left Arrow eight times to highlight the sentence, and hit Return again. Press Up Arrow twice to move the cursor to the new location, and hit Return again.

10) Now correct the item numbers. The cursor is on line 14 column 1. Press OA-E to switch to the overtype cursor. Type **1** and move the cursor to line 15 column 1. Type **2** and move the cursor to line 16 column 1. Type **3** and leave the cursor where it is.

The memo is complete, so press OA-S to store it on disk.

LOADING THE SPREADSHEET

It's time to "cut-and-paste" the spreadsheet (CASHFLOW), so load it from your data disk: Press Escape to return to the Main Menu; hit Return to confirm *Add files to the Desktop*; at the Add Files menu, hit Return to confirm *The current disk*; at the AppleWorks files menu, move the highlight to CASHFLOW and hit Return again. You now have MEMO and CASHFLOW on the Desktop, with CASHFLOW on screen.

You don't need a spreadsheet filename and date in this document, so tell AppleWorks to avoid printing them. Press OA-O to bring up the Printer Options screen. Type **PH** and hit Return. Now press Escape to return the spreadsheet to the screen.

PRINTING TO THE CLIPBOARD

Now get set to "cut" the spreadsheet. You want the information in rows 2 through 30 in the memo, so print only those rows to the clipboard. Press OA-1 to jump the cursor to row 1, then place your cursor on A2. Press OA-P to start the Print command, and type **R** to select the *Rows* option. Now press OA-6, then ►

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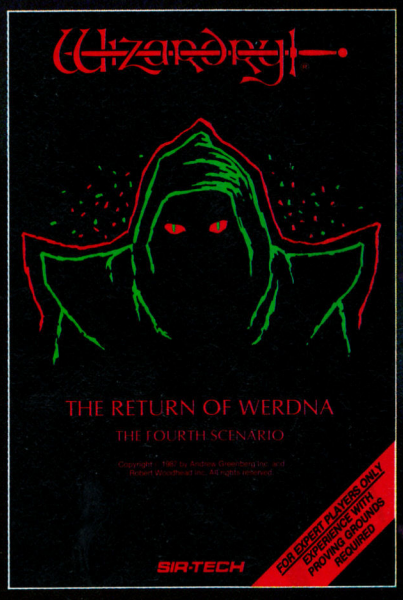

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PLAY IT TO THE HILT!

Line	Action to take
1	Type **MEMO TO:** and press Tab twice. Type **Nick Ferdinand** and press Return. The cursor moves to line 2.
2	Type **FROM** and press Tab twice. Type **Harvey Crane** and press Return. The cursor moves to line 3.
3	Type **DATE:** and press Tab twice. Type **September 12, 1988** and press Return. The cursor moves to line 4.
4	Type **SUBJECT:** and press Tab twice. Type **CASH FLOWS PROJECTIONS** and press Return twice. The cursor moves to line 6.
6	Refer to **Figure 2** and type the entire paragraph starting *The next few years . . .* (press the spacebar only once between sentences). Wordwrap causes a word that can't fit at the end of a line to move down to the beginning of the next line. After you've finished, press Return twice. The cursor moves to line 11.
11	Type the entire paragraph starting **At the meeting on the 15th . . .** and press Return twice. The cursor moves to line 14.
14	Type **1.** and press the spacebar twice. Type the sentence **Where disbursements can be reduced.** and press Return. The cursor moves to line 15.
15	Type **2.** and press the spacebar twice. Type the sentence **Under what circumstances.** and press Return. The cursor moves to line 16.
16	Type **3.** and press the spacebar twice. Type the sentence **The numbers breakdown on direct labor.** and leave the cursor where it is, which should be in line 16 column 43.

Table. *Entering text of memo.*

Down Arrow four times to move the highlight to row 30, and press Return.

Type 2 to select *The clipboard (for the Word Processor)* and hit Return again. AppleWorks confirms that the spreadsheet is indeed on the clipboard and you can now copy it to a word-processor document.

MERGING SPREADSHEET AND MEMO

"Pasting" the spreadsheet into the memo is just as easy. Press OA-Q to switch to the Desktop Index. Move the highlight to MEMO and hit Return. The memo is now back on screen. Move the cursor to line 11 column 1. Press OA-M to start the Move command, and type **F** to select *From clipboard (paste).*

Ah, sweet success. AppleWorks brought the spreadsheet from the clipboard and inserted it into the memo instantly. It transfers only the formula results, not the formulas themselves, so you can't recal-

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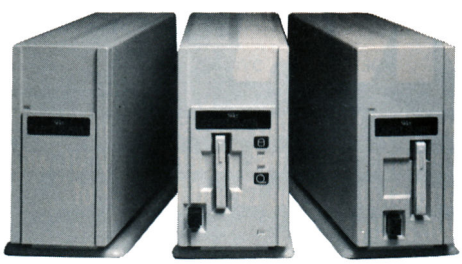

Let's be blunt. The best praise comes from the pocketbook. It's when an Apple II user pulls out his or her wallet, points at our product, and says "I'll take that one."

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culate the spreadsheet any longer. That's no problem.

The big problem is this spreadsheet's bad case of "wraparounditis." It's simply too wide to fit into the print area of the memo, so the rightmost columns are wrapped around to the left margin. Formatting will take care of that.

FORMATTING THE DOCUMENT

Press OA-1 to jump the cursor to line 1 column 1. Now press OA-O to bring up the Printer Options screen. The highlighted band shows the current printer settings: PW (page width) of 8 inches, LM (left margin) of 1 inch, RM (right margin) of 1 inch, CI (characters per inch) of 10 characters, UJ (unjustified), PL (page length) of 11 inches, TM (top margin) of zero inches, BM (bottom) margin of 2 inches, LI (lines per inch) of 6 lines, and SS (single spaced). These are the standard settings. You'll be changing quite a few.

SETTING MARGINS

First, the margins: Type **TM** and press Return. Type **1** and hit Return again. You can solve some of the wraparound problem by reducing the left and right margins: Type **LM**, hit Return, then type **.8** and hit Return again. Now type **RM** and hit Return. Type **.8** and hit Return again.

CHARACTER SIZE AND LINE SPACING

Reducing character size lets more characters fit on a line. You're still in the Printer Options screen, so type **CI** and hit Return. Type **12** and hit Return again.

You want to double-space the introductory lines, so type **DS** and hit Return. Press Escape to return to the document.

UNDERLINING THE SUBJECT

Underlining the subject of this memo makes it stand out. Move the cursor to line 9 column 16 and press Control-L. The caret (^) indicates the start of underlining. Place your cursor on the caret and, at the bottom of the screen, AppleWorks shows what this caret stands for—*Underline Begin*. Because underlining cancels itself at the end of the line, you don't need to enter an end code.

RETURN TO SINGLE SPACING

Now return the rest of the document to single spacing: Place the cursor on line 10 column 16 and press OA-O. Type **SS** and hit Return.

REDUCING THE SPREADSHEET

Printing the spreadsheet in smaller characters will alleviate the wraparound problem. Press Escape to return to the spreadsheet. Move the cursor to line 16 column 16 and press OA-O. Type **CI** and hit Return. Type **15** and hit Return again. Now press Escape. What's going on here?

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The wraparound problem still appears unresolved. Well, what you see is not always what you get. When you print, everything will turn out perfectly.

PREVIEWING PAGE BREAKS

Before doing anything more, see how AppleWorks calculates the page breaks: Press OA-K and select your printer. Press OA-8 to jump the cursor to line 67. Hmnn. Page 1 ends between items 2 and 3. This'll never do.

Reducing the bottom margin to one inch will let the document print on one page, so press OA-O. Type **BM** and press Return. Type **1** and hit Return again. Press Escape. Now press OA-K to calculate the page breaks again, and hit Return. Page 1 now ends after item 3. Perfect. You've done a great deal of work on this document, so press OA-S to store it on disk.

The final bit of formatting involves indenting items 1–3, a matter of increasing the left margin: Move the cursor to line 73 column 1 and press OA-O. Type **LM** and press Return. Type **1**, hit Return again, then press Escape.

PRINTING THE DOCUMENT

It's time to see what all this formatting produces, so turn on your printer. Press OA-P to start the Print command. Press Return to confirm *Beginning*, then again to select the printer (or type a printer number, then Return). Press Return a final time to confirm one copy. The printer whirs, and here's your document looking like the one in **Figure 1**. And no wraparound!

DESPERATELY SEEKING VERSION 2.0

Creating the cash-flow spreadsheet requires that you work with AppleWorks version 2.0, which provides the AND function Formula 12 needs. To those of you who may have started the spreadsheet and been stymied, my apologies for not mentioning it sooner.

Next month, you'll get into a holiday mood by creating a wine list for a wine-and-cheese party. Stay tuned.■

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From My Mailbag

GOOD OLD 80N . . . AGAIN

In the March "From My Mailbag" (AppleWorks in Action, p. 97), Lois Schneyer of Homer, Alaska, asked how to get rid of 80N when printing. Douglas K. Parrish of Howell, Michigan, writes: "For a long time, I swore *at* AppleWorks because it printed 80N every time I wanted a document. Consequently, I stuck with Apple Writer IIe (DOS 3.3 version) much longer than I should have. One day I read of others who were having the same problem, and their solution involved altering the code sent to the interface card. AppleWorks automatically sends Control-I 80N, but I changed it to Control-I 0N (Control i zero n) under the submenu *Add a printer/Custom Printer/#5:Interface Card*. No more 80N—ever! Now I swear *by* AppleWorks."

Howard Pelton of St. Paul, Minnesota, charts this course: At Main Menu, select **5** (*Other Activities*), then **7** (*Specify Information About Your Printer*). Under *Change printer specifications*, type the printer number, then select **5** (*Interface cards*). At this point, AppleWorks provides information about parallel and serial cards. Press the spacebar to continue. AppleWorks shows *I80N* as the current control characters and asks whether this is correct. Select *No*, which replaces I80N with *None*. Type a caret (^) to end the operation. Press Escape a few times to return to the Main Menu.

Readers Kevin Hedrick of Gettysburg, Pennsylvania, and Robert Sutherland of Toronto, Ontario, Canada, wrote that the following solution—provided by Robert Dietrick of Bothell, Washington—appeared in Apple Clinic, June 1987, p. 24: "Make sure you're using a copy of the AppleWorks startup disk, and

```
BLOAD APLWORKS.SYSTEM,
TSYS,A$2000
POKE 11557,0
POKE 11558,0
POKE 11559,0
POKE 11560,0
```

into the offending memory. Save your work with

```
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—R.W.

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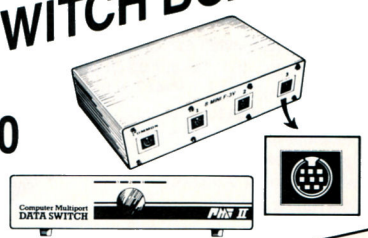

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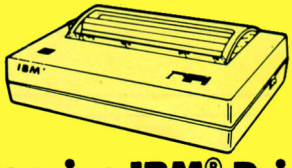

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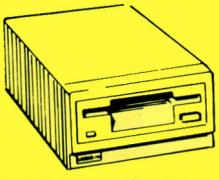

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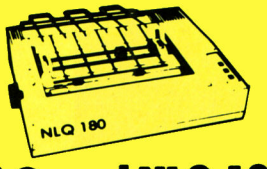

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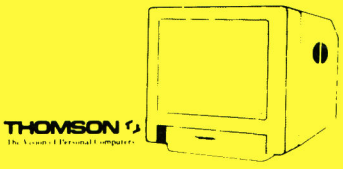

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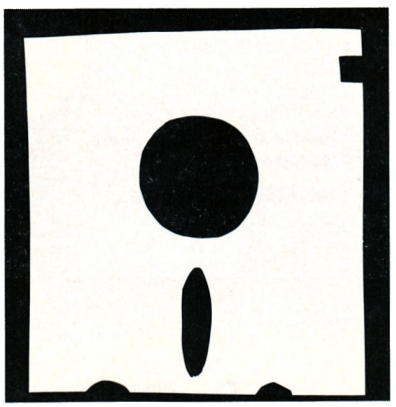
Amazing Mazes

by Dan Bishop

Ever try playing through one of those computer mazes that adventure games create? Each move brings you to another location and another decision. Usually the program describes each new scene, sometimes revealing an object you'll need later. All too often, it also introduces a threatening or dangerous element. Moving on and completing the course successfully depends on your decisions along the way and your memory of the maze from your previous 30 failures.

This month I'll outline some basic programming principles behind these types of games. Of course, there are as many ways to put such an adventure together as there are adventures to imagine. Still, a common and rather simple thread provides the foundation for building computer adventures.

Featured with this column is a fully functioning, though simple, adventure game, The Labyrinthian Caverns. The accompanying **Program listing** illustrates the concepts described below and provides the basis for a more ambitious adventure game I'll present and explain in detail in my next column.



A simple adventure illustrates basic programming principles and sets the stage for the development of more complex games.

Jan Muller

THE LABYRINTHIAN CAVERNS

The first step in creating an adventure game is to determine its theme. Decide where the action is to take place (an island, a cavern, a planet, or a whole galaxy) and what goal you must achieve to win. What dangers will you face? What defenses will the game provide and how will you access them? Consider the limitations that will affect game play and when or how you'll apply and remove those constraints. Work out all these considerations before you start writing the program.

Since this column introduces this type of game programming, I'm restricting this month's version to the bare necessities. Imagine being trapped in an underground maze. The light's so dim you can't tell whether a step ahead will take you farther along the tunnel or face to face with a tunnel wall. The object of the game is to grope through this maze until you find the only exit. You can also add a few stationary traps to avoid. Finally, let's add a 100-move limit. After all, you can meander around a cavern only so long before running out of food and water!

Armed with an overview of the game plan and some details, the next step is to implement it in terms a computer can understand. You need to provide your Apple with the blueprint of the playing area, the maze. This leads us to the subject of the game map and two-dimensional arrays.

THE GAME MAP

The game map is a floor plan of the playing area. Although most exciting games have three-dimensional capabilities (such as a cavern with ten levels), I'll restrict most of this article to two dimensions. Once you understand how a simple game map works, you'll find it easy enough to go 3-D.

Before programming the maze, construct it with graph paper and pencil. Be sure you can reach the exit from any point within the maze, but include lots of blind tunnels and corners to provide ►

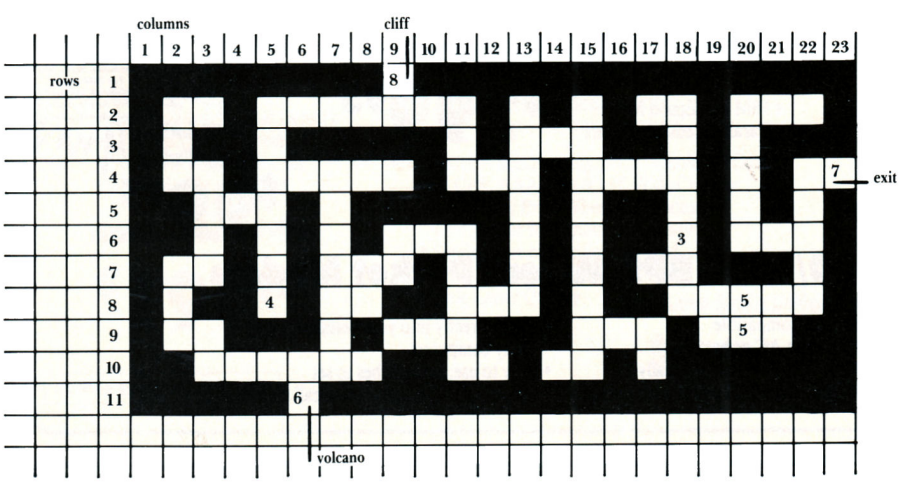


Figure. *Game map for this month's version of Labyrinthian Caverns.*

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some challenge. The accompanying **Figure** shows the game map for this version of Labyrinthian Caverns. It also includes three stationary obstacles that will end the game precipitously if you encounter them.

You must load your game map into the computer. The most direct approach is to use a two-dimensional array that exactly mirrors the graph paper on which you've drawn your map. On your graph paper number each horizontal row, starting at the top with 1. Then, along the top of the map, number each vertical column, starting at the left with 1. The top-left square in your maze now has a unique name; it's the square ROW-1,COL-1. To its right is square ROW-1,COL-2, and the square just below the corner square is square ROW-2,COL-1. You can abbreviate the names for these three squares to square (1,1), square (1,2), and square (2,1) by adopting the convention that the first number in each pair is the row number and the second is the column number.

This abbreviated notation is very similar to the way BASIC handles individual squares in a two-dimensional array. The array corresponds to the entire map. If you call the array MZ (for maze), you can specify any location in the array by following the array name with the the row/column pair of numbers (in parentheses) for the square in which you're interested. Thus, you can refer to the upper-left corner of the maze as MZ(1,1). The square to its right is MZ(1,2) and the square below the corner square is MZ(2,1).

Before using an array in BASIC, you have to let your Apple know how large this map is going to be so that the computer can reserve enough memory to contain the map (array) information. Use the DIM (dimension) statement. Labyrinthian Caverns requires 11 rows and 23 columns. Lines 7900–7950 use READ/DATA statements to read in the title and sizes for the array and to dimension it:

```
7900  READ TI$
7905  READ RW, CL
7910  DATA "LABYRINTHIAN
      CAVERNS"
7945  DATA 11, 23
7950  DIM MZ(RW,CL)
```

Program listing. *Labyrinthian Caverns, version one.*

```
1  REM  THE LABYRINTHIAN CAVERNS  [1931]
2  REM       VERSION ONE  [1180]
3  REM       BY DAN BISHOP  [1224]
4  REM       INCIDER, NOV. 1988  [1467]
5  REM  ********************  [929]
6  REM   [184]
10  GOSUB 100: REM  INITIALIZE PROGRAM  [1921]
15  GOSUB 300: IF M = M1 THEN 90  [1281]
20  GOSUB 500   [345]
25  IF MV <   = NM THEN 15  [1231]
30  GOSUB 400: VTAB 3  [625]
35  PRINT "SORRY, YOU HAVE DIED A TERRIBLE DEATH"  [2787]
40  PRINT "FROM STARVATION AND DEHYDRATION IN THE"  [2955]
50  PRINT TI$;": PRINT "PRESS <RETURN> TO END."  [2374]
55  INPUT Z$  [313]
90  GOSUB 400: VTAB 4: HTAB 10  [991]
95  PRINT "THANKS FOR PLAYING!"  [1666]
96  HTAB 10: PRINT "COME AGAIN ANY TIME."  [1976]
97  VTAB 23: END   [546]
99  REM  READ MENU AND LOAD MAZE  [1830]
100  GOSUB 7800: GOSUB 7900  [925]
105 LN$ = "======================================": REM
     39 EQUAL SIGNS  [4154]
110  GOSUB 7700: GOSUB 7650  [936]
115  GOSUB 7750  [502]
190  RETURN   [367]
245  REM   [423]
246  REM  ********************  [1254]
247  REM  MENU HIGHLIGHTER  [1613]
248  REM  ********************  [1256]
249  REM   [427]
250  VTAB 14 + M: HTAB 4  [1050]
255  INVERSE : PRINT "-)"M1$(M,0);  [1303]
260  NORMAL : RETURN   [397]
270  REM   [193]
271  REM  ********************  [1024]
272  REM  MENU DE-HIGHLIGHTER  [1565]
273  REM  ********************  [1026]
274  REM   [197]
275  VTAB 14 + M: HTAB 4  [820]
280  NORMAL : PRINT "  "M1$(M,0);  [1029]
285  RETURN   [207]
295  REM   [218]
296  REM  ********************  [1049]
297  REM  KEYBOARD/MENU ROUTINE  [1783]
298  REM  ********************  [1051]
299  REM   [222]
300  GET Z$  [361]
305  IF M > 0 AND  ASC (Z$) = 13 THEN 390  [1857]
310 Z = 0: FOR I = 1 TO M1  [1237]
315  IF Z$ = M1$(I,0) THEN Z = I: GOSUB 275:M = I: GOSUB
     250  [2711]
320  NEXT I  [268]
325  IF Z = 1 THEN 390  [942]
330  IF  ASC (Z$) <   > 10 THEN 350  [1546]
335  GOSUB 275:M = M + 1  [1083]
340  IF M > M1 THEN M = 1  [1198]
345  GOSUB 250: GOTO 300  [793]
350  IF  ASC (Z$) <   > 11 THEN 370  [1569]
355  GOSUB 275:M = M - 1  [1104]
360  IF M < 1 THEN M = M1  [1220]
365  GOSUB 250: GOTO 300  [813]
370  GOTO 300  [433]
390  RETURN   [312]
400  VTAB 3: HTAB 1  [615]
405  FOR I = 1 TO 6: PRINT  SPC( 40): NEXT I  [1697]
410  VTAB 9: PRINT LN$: RETURN   [1043]
495  REM   [418]
496  REM  ********************  [1249]
497  REM  MOVE EVALUATOR  [1486]
498  REM  ********************  [1251]
499  REM   [422]
500  IF M > 4 THEN 1000  [1143]
503 TR = PR:TC = PC  [1348]
505  IF DR = 1 THEN  ON M GOSUB 600,601,602,603: GOTO
     525  [2582]
510  IF DR = 2 THEN  ON M GOSUB 602,603,601,600: GOTO
     525  [2588]
515  IF DR = 3 THEN  ON M GOSUB 601,600,603,602: GOTO
     525  [2339]
520  ON M GOSUB 603,602,600,601  [1181]
525  IF MZ(TR,TC) <   > 9 THEN 550  [1620]
530  GOSUB 400: VTAB 3: PRINT "YOU JUST BASHED INTO A
     WALL."  [2818]
535  PRINT "YOU HAVE LOST ONE MOVE."  [1857]
540  PRINT "YOU ARE STILL FACING THE WALL"  [2258]
545  PRINT "WHAT ARE YOU GOING TO DO?"  [1971]
550  IF M = 2 THEN DR = DR + 2  [1502]
555  IF M = 3 THEN DR = DR + 1  [1507]
560  IF M = 4 THEN DR = DR + 3  [1515]
565  IF DR > 4 THEN DR = DR - 4  [1594]
570 MV = MV + 1: VTAB 23: HTAB 20  [1470]
575  PRINT "MOVES TAKEN: "MV;  [1428]
580  IF MZ(TR,TC) = 9 THEN 590  [1471]
585 PR = TR:PC = TC: GOSUB 700  [1560]
590  RETURN   [257]
600 TR = PR - 1: RETURN   [1111]
601 TR = PR + 1: RETURN   [1111]
602 TC = PC + 1: RETURN   [1082]
603 TC = PC - 1: RETURN   [1084]
695  REM   [363]
696  REM  ********************  [1194]
697  REM  MESSAGES  [997]
698  REM  ********************  [1196]
699  REM   [367]
700  IF MZ(PR,PC) = 0 THEN   GOTO 750  [1743]
705  IF MZ(PR,PC) = 7 THEN   GOTO 775  [1762]
710  IF MZ(PR,PC) = 8 THEN   GOTO 785  [1769]
715  IF MZ(PR,PC) = 6 THEN   GOTO 800  [1760]
720  IF MZ(PR,PC) = 4 THEN   GOTO 810  [1764]
750  GOSUB 400: VTAB 3: PRINT "YOU ARE STILL ALIVE AND
     WELL, GROPING"  [3666]
755  PRINT "AROUND IN THE DARKNESS."  [2077]
760  PRINT "YOU HAVE "NM - MV" MOVES REMAINING."  [2870]
765  PRINT "WHAT DO YOU WANT TO DO?"  [2064]
770  RETURN   [182]
```


Continued

One method for filling this array with data is to code the information as numbers and assign each array element (or map square) its corresponding code. In this **Program listing**, the number 9 represents a cavern wall, zero is for an open corridor, and 7 is for the exit from the caverns. Other numbers represent the

Continued

```
775  GOSUB 400: VTAB 3: PRINT "CONGRATULATIONS!"  [2099]
780  PRINT "YOU SUCCESSFULLY MADE IT OUT OF THE": GOTO
     50  [3035]
785  GOSUB 400: VTAB 3: PRINT "SO VERY SORRY!"  [1927]
790  PRINT "YOU JUST STEPPED OVER A 5000 METER CLIFF A
     ND ARE NO LONGER ALIVE NOR WITHIN THE": GOTO 50  [5855]
800  GOSUB 400: VTAB 3: PRINT "THAT RUMBLING NOISE YOU
      JUST HEARD WAS"  [3599]
805  PRINT "AN EXTINCT VOLCANO JUST COMING TO LIFE. LA
     VA HAS BROKEN THROUGH AND FILLED THE": GOTO 50  [5898]
810  GOSUB 400: VTAB 3: PRINT "THAT FOUL SMELL YOU JUS
     T DETECTED CAME"  [3575]
815  PRINT "FROM THE PIRRHANA POOL YOU JUST FELL "  [2842]
820  PRINT "INTO. THERE IS NO ESCAPE FROM THE": GOTO 5
     0  [2846]
995  REM   [408]
996  REM  ********************  [1239]
997  REM  OBJECT HANDLING  [1494]
998  REM  ********************  [1241]
999  REM   [412]
1000  GOSUB 400  [559]
1005  VTAB 4: HTAB 14: PRINT "SORRY."  [1536]
1010  VTAB 5: PRINT "THERE ARE NO OBJECTS AVAILABLE IN
      THIS"  [3339]
1015  PRINT "GAME AT THIS TIME."  [1692]
1020  PRINT "BE SURE TO CATCH MY NEXT COLUMN!"  [2653]
1025  RETURN   [:82]
7645  REM   [428]
7646  REM  ********************  [1259]
7647  REM  DISPLAY MENU  [1337]
7648  REM  ********************  [1261]
7650  VTAB 15: FOR I = 1 TO M1: HTAB 6  [1617]
7655  PRINT M1$(I,0);": ";M1$(I,1)  [1527]
7659  REM   [442]
7660  NEXT I  [468]
7665 M = 1: GOSUB 250  [989]
7670  RETURN   [452]
7695  REM   [223]
7696  REM  ********************  [1012]
7697  REM  INSTRUCTIONS  [1206]
7698  REM  ********************  [1014]
7699  REM   [227]
7700  HOME   [201]
7705  PRINT TI$  [434]
7710  PRINT LN$  [436]
7715  PRINT "YOU HAVE BECOME IMPRISONED IN THE": PRINT
      TI$"."  [3140]
7720  PRINT "YOU MUST FIND YOUR WAY OUT BEFORE YOU"  [2931]
7725  PRINT "RUN OUT OF FOOD AND WATER."  [2071]
7730  PRINT "YOU HAVE ONLY "NM" MOVES IN WHICH TO"  [2727]
7735  PRINT "SUCCEED.  GOOD LUCK!"  [1622]
7740  PRINT LN$  [466]
7745  PRINT : RETURN   [516]
7747  REM  ********************  [1063]
7748  REM  RANDOMIZING ROUTINE  [1724]
7749  REM  ********************  [1065]
7750 PR =  INT ( RND (1) * 9 + 1) + 1  [1868]
7755 PC =  INT ( RND (1) * 12 + 1) + 1  [1900]
7760  IF MZ(PR,PC) <  > 0 THEN 7750  [1755]
7765 DR =  INT ( RND (1) * 4 + 1)  [1617]
7770 MV = 0:M = 1: RETURN   [1166]
7795  REM   [355]
7796  REM  ***************  [986]
7797  REM  READ MENU & NO. MOVES  [1713]
7798  REM  ***************  [988]
7799  REM   [327]
7800  READ M1,NM  [610]
7805  DATA  8, 100  [595]
7810  DIM M1$(M1,1)  [756]
7815  FOR I = 1 TO M1  [943]
7820  READ M1$(I,0),M1$(I,1)  [1166]
7825  NEXT I   [378]
7830  RETURN   [357]
7850  DATA  F, MOVE FORWARD  [1385]
7855  DATA  T,TURN AROUND & MOVE FORWARD  [2292]
7860  DATA  R,TURN RIGHT & MOVE FORWARD  [2220]
7865  DATA  L,TURN LEFT & MOVE FORWARD  [2136]
7870  DATA  P, PICK OBJECT UP  [1502]
7875  DATA  D, DROP OBJECT  [1312]
7880  DATA  U, USE OBJECT  [1262]
7885  DATA  Q, QUIT THE MAZE  [1468]
7890  RETURN   [417]
7895  REM   [423]
7896  REM  ***************  [1086]
7897  REM  READ MAZE DATA  [1388]
7898  REM  ***************  [1088]
7899  REM   [427]
7900  READ TI$  [578]
7905  READ RW,CL  [746]
7940  DATA  "LABYRINTHIAN CAVERNS"  [1729]
7945  DATA  11, 23  [478]
7950  DIM MZ(RW,CL)  [783]
7955  HOME : PRINT "LOADING DATA.  PLEASE WAIT..."  [2368]
7960  FOR I = 1 TO RW  [876]
7965  FOR J = 1 TO CL  [856]
7970  READ MZ(I,J)  [639]
7975  NEXT J,I  [391]
7980  RETURN   [252]
7995  REM   [300]
7996  REM  ********************  [1057]
7997  REM  DATA FOR MAZE MAP  [1434]
7998  REM  ********************  [1059]
7999  REM   [272]
8000  DATA  9,9,9,9,9,9,9,9,8,9,9,9,9,9,9,9,9,9,9,9,
     9,9  [2536]
8001  DATA  9,0,0,9,0,0,0,0,0,0,0,0,9,0,9,0,9,0,0,9,0,0,
     0,9  [2394]
8002  DATA  9,0,9,9,0,9,9,9,9,9,0,9,0,0,0,0,9,9,0,9,0,9,
     9,9  [2467]
8003  DATA  9,0,0,9,0,0,0,0,0,9,0,0,0,9,0,0,0,0,0,9,0,9,
     0,7  [2394]
8004  DATA  9,9,0,0,0,9,0,9,9,9,9,9,0,9,0,9,9,0,9,0,9,
     0,9  [2460]
8005  DATA  9,9,0,9,0,9,0,9,0,0,0,0,9,0,9,0,0,9,9,3,9,0,0,
     0,9  [2437]
8006  DATA  9,0,0,9,0,9,0,0,0,0,9,0,9,0,9,0,9,0,0,9,9,9,
     0,9  [2435]
8007  DATA  9,0,9,9,4,9,0,0,9,9,0,0,0,0,9,0,9,9,0,0,5,0,
     0,9  [2436]
8008  DATA  9,0,0,9,9,9,0,9,0,0,0,0,9,9,9,0,0,0,9,0,5,0,
     9,9  [2442]
8009  DATA  9,9,0,0,0,0,0,0,0,9,9,0,0,9,0,0,0,9,0,9,9,9,9,
     9,9  [2447]
8010  DATA  9,9,9,9,9,6,9,9,9,9,9,9,9,9,9,9,9,9,9,9,9,
     9,9  [2544]
```

End

squares containing stationary obstacles. So the commands MZ(1,1) = 9, MZ(1,2) = 9, MZ(1,3) = 9, and so on, load the numeric equivalent of the map into the maze array.

An easier method for filling two-dimensional arrays is nested loops. Lines 7960–7975 use two nested loops and the READ/DATA instuctions to load all array data automatically:

```
7960  FOR I = 1 to RW
7965        FOR J = 1 TO CL
7970              READ MZ(I,J)
7975  NEXT J, I
```

These lines read all 253 DATA elements into their appropriate array positions. Using this code, the computer assigns a value of 1 to I, then goes to line 7965. There it assigns 1 to J also, goes to line 7970, and reads the next available DATA element into MZ(1,1). Line 7975 sends the computer back to line 7965, where it changes J to 2; line 7970 now reads the next available DATA element into MZ(1,2). The inner loop (with J) continues to cycle until it completes the J = CL loop. (Recall that we set CL to 23, the number of columns in the maze.) Then line 7975 sends control back to 7960, where the program changes I from 1 to 2 and the whole process begins again with the inner loop reading the second row of data into the array.

The program reads the data into MZ, row by row, until the I = RW outer loop is finished, when it has filled the MZ array completely. Compare the DATA statements (lines 8000–8010) containing the 11 rows of data with the **Figure**. If your printout displays them in single rows, compare the 9s and zeros in the printout to the **Figure**'s graphics map. Note that the squares labeled 3 and 5 in the map correspond to stationary obstacles this month's version of the program ignores.

THE MENU

Of course, you must also provide a list of options for each move in Labyrinthian Caverns. In the current version the only options available are moves. My next column will include survival objects you can pick up from the floor of the cavern, use, or drop as necessity demands. The menu in the **Program listing** includes these options as well, but if you select them, the program will tell you they aren't functional at this time.

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You can now attempt to move forward (in the direction you're currently facing), turn around (180 degrees) and move forward (effectively moving back to the previous square), turn right and move forward, or turn left and move forward. The program reads all options into the menu array, M1$, in lines 7800–7890. It then handles menu control in lines 250–390. You can select options by either pressing the appropriate letter key or using the arrow keys to move the highlighting bar up or down to the desired option and pressing Return. "Menu Selector" (Applesoft Adviser, December 1987, p. 129) details the mechanics of this type of display. The only change is a switch from a horizontal menu to a vertical menu.

When the program runs, it first reads in the menu data, then reads in the maze array data as described above. It then displays the opening instructions that introduce the game (GOSUB 7700) and displays the menu (GOSUB 7650).

PLAYER POSITIONING

The last thing the program must do before turning control over to you, the player, is to place you somewhere in the maze, using the computer's random-number generator to choose this position. Lines 7750–7770 handle this operaton. Labyrinthian Caverns uses PR and PC to mark the players' row and column position. Lines 7750 and 7755 generate random values for PR between 2 and 10 and random values for PC between 2 and 13. This ensures that you won't be near the exit (located in column 23). The program checks the selected square MZ(PR,PC) to make sure it isn't a cavern wall. It wouldn't be pleasant to materialize in solid rock! If this is a wall square—that is, if MZ(PR,PC) = 9—Caverns generates new values for PR and PC.

The program uses DR to indicate the direction you're currently facing. Using the **Figure** as a map with the top facing north, DR = 1 is north, DR = 2 is east (or right), DR = 3 is south, and DR = 4 is west (or left). Line 7765 generates a random value for DR between 1 and 4. By keeping track of DR, the program can always interpret your move selection in terms of which square to place you.

Line 7770 initializes the move counter, MV, to one. It then positions the highlight on the first menu item (M = 1), and turns control of the program over to you (lines 15–25).

EVALUATING MOVES

The main part of the program is divided into two sections. The program reserves lines 500–999 for evaluating your moves and providing appropriate messages. It reserves lines 1000–6999 to handle the obects you may pick up, use, or drop during the game. This month's **Program listing** contains the message, "There are no objects available in this game at this time." The program displays the message whenever you select *P*, *D*, or *U* from the game menu.

Making a move in the maze, however, consists of three programming tasks once you've indicated your direction. The first is determining the square to which you're proposing to move. The second is to determine whether or not that square is a wall. If it is, the program displays the message, "You just bashed into a wall. You have lost one move. You are still facing the wall. What are you going to do?" You'll then receive control of the program to make another menu selection.

If the new square is valid, the third step is to analyze the characteristics of that square and issue an appropriate message. Then, if you haven't stumbled into disaster, you'll receive control for the next move.

The hard part is calculating the location of the new square based on your ►

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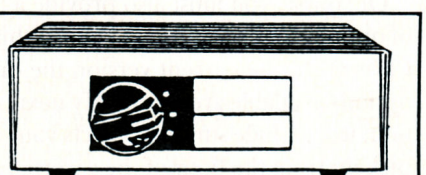

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current heading, DR, and the selected move, which you indicate by *M*. M = 1 for a move forward, M = 2 for a 180-degree turnaround, M = 3 for a right turn and move forward, and M = 4 for a left turn and move forward. Each of these choices means something different, depending on the value of DR; there are 16 possible situations. Lines 500–520 and the subroutines between lines 600 and 603 handle this problem.

The program determines a temporary row (TR) and column (TC) position, the location on the maze where you'll be if the selected move is possible. Then the program checks MZ(TR,TC) to see whether its value is 9 (line 525), indicating a wall position and resulting in the message given above. In any case, the program calculates the new value for DR (lines 550–565) and increments the move counter. If the move won't result in a crash into the wall, the program updates your position (PR = TR and PC = TC in line 585), and jumps to line 700. With the "disaster squares" each given a different value, the program can easily test MZ(PR,PC) and jump to the appropriate message before returning to the menu subroutine.

CUSTOMIZING THE CAVERNS

By programming your own games, you can make changes in their operation any time you like—you can create many games from one simple program.

With Labyrinthian Caverns, you may want to increase the number of moves allowed per game to 150. To do this, simply change line 7805 to

```
7805  DATA 8, 150
```

The 8 corresponds to the number of menu selections available, while 150 is the maximum number of moves per game.

Another simple change is to create your own maze. If you use different dimensions, change line 7945 to reflect your choice of number of rows and number of columns. Then be sure your DATA statements (lines 8000 and up) reflect the number of squares in your new maze correctly.

While you're testing the program to be sure it's working properly, you may want to include a readout at the bottom of the screen indicating your present row and column and the direction you're facing. To do this, change line 25 to read

```
25 IF MV <= NM THEN 14
```

and add line 14:

```
14 VTAB 24: HTAB 1: PRINT PR,PC,DR;
```

Now, as you play the game, you can check your moves and the computer's response against the graph-paper map you drew. When I did this the first time, I found two mistakes in my DATA state-

A2 offline

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 #69

ProDOS 8 joined the big leagues this past summer when two virus programs were distributed that infected ProDOS 8 SYS files. The programs are far from "commercial quality," but dangerous nonetheless. Yet, most remarkable was the speed with which they were detected. We've had far more reports of virus spottings than of virus damage. For more, see the August and September 1988 issues of ***Open-Apple***, pages 4.50 and 4.57.

From our fan mail:

I love finding ***Open-Apple*** in my mailbox—I know, then, that I have an evening of interesting reading ahead.
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By Bill Basham **inCider Editors' Choice**

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ments: two walls blocking what should have been open passages.

The messages are quite easy to change; so are stationary disaster squares. To add a disaster square at position MZ(10,12), for example, change the 12th number in the tenth DATA statement (line 8009) from zero to, say, 15. Now, at line 725, add

```
725 IF MZ(PR,PC) = 15 THEN GOTO 825
```

and add line 825 for the appropriate disaster message. Pattern this line after the other messages (lines 810–820, for example). The GOSUB 400 clears the message box so that you can print the new message on a clean slate; GOTO 50 prints "Labyrinthian Caverns. Press <RETURN> to END" and ends the program.

Do you want more of a challenge? What about a 3-D maze with several levels? Make MZ a three-dimensional array by changing the dimension statement to, say, DIM MZ(5,15,30). This maze can have five levels, each with 15 rows and 30 columns.

Of course, you'll need 75 DATA statements (5 times 15), each with 30 number codes, an extra PL variable to indicate which level you're on (don't forget to randomize PL at the start), and an extra menu option: C - CHANGE LEVELS.

Code certain squares for holes or tunnels to allow movement between levels. For example, 17 might mean a hole in the floor to access the level below. You might code the corresponding square on the lower level 18, indicating a hole in the ceiling for access to the level above. When standing on either square, the program tests for a 17 or 18, displays an appropriate messge stating the hole is there, and lets you select option C if desired. Pattern these nondisaster messages after lines 750–770, so that the program doesn't come to an end.

THE BEST IS YET TO COME

Have you started thinking about holiday gifts? If you know someone with an Apple, you might think about writing your own customized version of Labyrinthian Caverns.

Look for version two of Labyrinthian Caverns in my next column. You'll find a hungry, roaming lion, a swarm of vampire bats that fly through the passages, and a giant spider blocking the only path to the exit, in addition to other obstacles. Along the way you may also encounter weapons and tools. Now if you just can't wait and would like an advance copy, send me an initialized or formatted disk and $9.50 (indicate ProDOS or DOS 3.3), and I'll forward a copy to you right away.■

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The Electronic BBS: Getting Started

by Tom Sherman

A19ZG—the magic combination that years ago unlocked for me the lively world of electronic bulletin-board systems. Still struggling with new communications software, I got a local BBS telephone number from a computer dealer or user group or friend, and soon connections to a network of new ideas and friends changed my personal and professional life. I applaud all the people who keep BBSs alive and growing—the programmers who create the software, the dedicated system operators (sysops) who maintain them, and the generous users who actively share their experience and expertise.

This month's column introduces the general concept and operation of BBSs. The next *inCider* On Line will take a closer look at particular BBSs serving business, education, user groups, computer fans, and the public interest.

Log onto a model BBS and discover the diverse activities, conversations, and acquaintances that are only a phone call away.

Jan Muller

BBS FEATURES

Running on a computer with a modem attached to a telephone line, BBS software answers calls from other computers, keeps track of callers, and lets them send (upload) and receive (download) messages and files. Like the large, national information systems, most BBSs offer three main features: private electronic mail between callers, areas (called subboards or often just boards) for posting public messages on different subjects, and a library of files and programs. Some BBSs also let you play games on line.

Dedicated BBS users once called long distance to reach local systems around the country. Telenet's **PC Pursuit** service, however, now available locally in 18,000 communities, reduces the cost of computer-to-computer calls to 33 major cities. After a $25 one-time registration fee, you pay $25 a month for an unlimited number of modem connections on weeknights (6 p.m–7 a.m.) and all day on weekends and holidays. PC Pursuit daytime rates may also save you money.

Although its lines are often busy and may require adjusting your communications program, the network has made local BBSs more effective for small businesses and more accessible to users everywhere. A recent look at one popular Apple II board showed callers from 25 states, three Canadian provinces, and one African country.

BBS USES

From the Surf Board BBS to the Bored of Ed, from NASA to IRS, from Gnome at Home (England) to Troll (France), BBSs serve an enormous variety of interests. Businesses, schools, government agencies, and special-interest groups of all kinds set up public and private systems. Individuals, many of them teenagers, become sysops for fun, to improve their programming skills, and to provide a service. You'll find BBSs that focus on such diverse subjects as economics, genealogy, railroading, weather, and lots more!

Most public BBSs are devoted to computer interests, discussing hardware and software, equipment wanted or for sale, and programs and programming. A typical on-line question asks

> How can I convert graphics images, borders, fonts, and panels from Print Shop IIGS to information a program can use to draw the image on the Apple IIGS 320-by-200 graphics screen?

BBSs attract many people primarily as a source of free public-domain programs or a place to share programs they've written. Unfortunately, software pirates also use BBSs to distribute commercial programs. Pirates justify their illegal activity by arguing about the high cost of software and the challenge of breaking copy protection, which improves their programming skills.

True, you'll find imperfect and overpriced programs, and you can copy and transfer electronic data easily. But while these arguments may justify boycotting companies that produce buggy or copy-protected software, they don't justify taking and distributing other people's work without payment. Decreasing the size of the Apple II market won't encourage developers to use their talents to write exciting new software. Sysops, who may be legally responsible for materials posted on their BBSs, should read ***Syslaw: A Sysop's Legal Guide***.

MAKING THE CONNECTION

To help newcomers learn their way around, let's follow the process of calling and using an imaginary model system called Hypothetical BBS.

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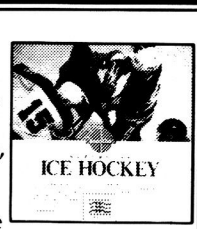

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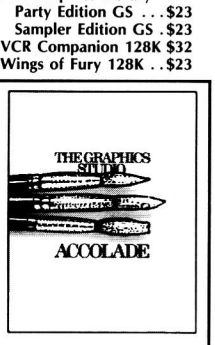

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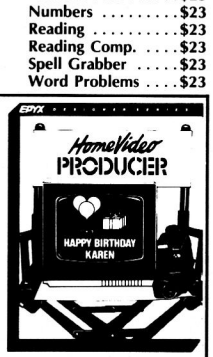

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Circle 270 on Reader Service Card.

using the appropriate speed and parameters if you know them. (If you don't, 1200 baud, 8 bits, no parity, 1 stop bit will probably work.)

Tip #1: BBSs are sometimes short-lived and some operate only during certain hours. If you're not certain that a BBS is in operation, don't awaken an innocent person by calling late at night.

Your modem dials the number, the BBS telephone rings, and then, if you're calling a popular board, you'll hear a busy signal. Some communications programs will re-dial a busy number automatically until it's free; most let you write a script to redial repeatedly. Experienced BBS users write scripts that loop through a series of BBS phone numbers until one answers.

Tip #2: Turn on your communications program's recording feature before calling to capture the information you'll need to write a log-on script for your next visit.

At last, the BBS' computer answers your phone, you hear a high-pitched tone, and you're connected to Hypothetical BBS! You may need to hit Return (or, in some cases, the spacebar) once or twice before the BBS asks for your user number and password. As a first-time caller, you'll respond by typing *new* or *guest* (if you just want to visit), or *register* or *newacct* (if you want to be a regular user with access to more features).

The BBS then prompts you for some information, such as name and phone number. It may also ask you for an on-line name, like a CB handle, and either give you or ask you for a password. Tip #3: A nonsense combination of letters, numbers, and other characters is most secure.

This short registration process gives the sysop information necessary to validate you as a regular user. Most BBSs are free, but some require a small membership fee.

LEARNING YOUR WAY AROUND

Like other programs you already know, most BBSs organize commands in a hierarchy. AppleWorks, for example, directs you through nested menus to follow a path such as:

Add files to the desktop
Make a new file for the word processor
Make a new file from scratch

The command path on a BBS might work like this:

Go to the message-board area
Enter board #1
Read messages
Forward from #50

Just as you can't begin a new word-processor file when you're at AppleWorks' top menu, you can't read BBS messages until you've followed the path to the right intersection. Fortunately, help is just a keystroke away.

Tip #4: Like using any powerful software, navigating through a BBS takes practice. You may find it best to take a quick look at several BBSs, then choose one to learn well before using others.

Now that you've identified yourself, the BBS may display some information about itself, then give a prompt such as "Command (? = Help): ?" This prompt asks for a command and tells you that here, as on most systems, typing a question mark displays a help screen of possible commands at that point. Different BBS programs use different commands, of course, but these imaginary screens from our Hypothetical BBS, shown in **Figure 1**, will get you started. The brackets <> indicate that you need to type only the first letter.

You'll enjoy your time on line more if you capture this screen and the BBS' detailed help file (by typing *H* on this hypo- ►

Electronic Education Update

In addition to the companies and organizations listed in the Product Information box in September's *inCider* On Line ("Electronic Education," pp. 92-95), the following firms and groups also provided information and assistance during preparation of the article:

Addison-Wesley Information Services, Menlo Park, CA
BRS Information Technologies, Latham, NY
Center for Educational Telecommunications, Pepperdine University, Culver City, CA
Classmate Classroom Instruction Program, Dialog Information Services, Palo Alto, CA
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Institute for Global Communications, San Francisco, CA
Interactive Communication Simulations, University of Michigan, Ann Arbor, MI
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—T.S.

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Figure 1. Typical main-prompt commands.

```
        Hypothetical BBS:  LIST OF SUPPORTED COMMANDS

<H>ELP File                          <F>EEDBACK to the Sysop
<B>oards Menu                        <C>HAT With Sysop
<F>ILE Library                       <S>ET password and parameters
<M>AIL Menu                          <O>THER BBS numbers
<G>AMES Menu                         <U>SERS on this system
<T>ERMINATE connection (Bye!)        <I>NFORMATION about this BBS
```

Figure 2. Typical message-area commands.

```
     Hypothetical BBS:  MESSAGE BOARD COMMANDS

  Reading        Writing                  Other
  =======        =======                  =====
<F>orward    <P>ost a message         <  Previous board
<R>everse    <E>dit your message      >  Next board
<N>ew        <D>elete your message    J#  Jump to board #
<S>can                                <L>ist sub-boards
                                      <H>elp
                                      <M>ail section
                                      <Q>uit to previous menu
```

thetical system) so that you can print them for future reference. You should know at least four commands. The first two are how to stop information from scrolling past (Control-S) and how to resume scrolling (Control-Q). Next, know how to end your on-line session (sometimes *G* for *goodbye*, *O* for *off*, or *T* for *terminate*). Finally, know how to interrupt an activity, such as reading a long list, and return to a command prompt (sometimes Control-C, *X* for *exit*, or the spacebar).

Tip #5: Make a simple form to keep track of the major commands for each BBS you call, together with phone numbers, baud rates, and, most important, your passwords. Good BBSs sometimes display a map of the system. If there isn't one, draw a map of the territory and keep it with the help file.

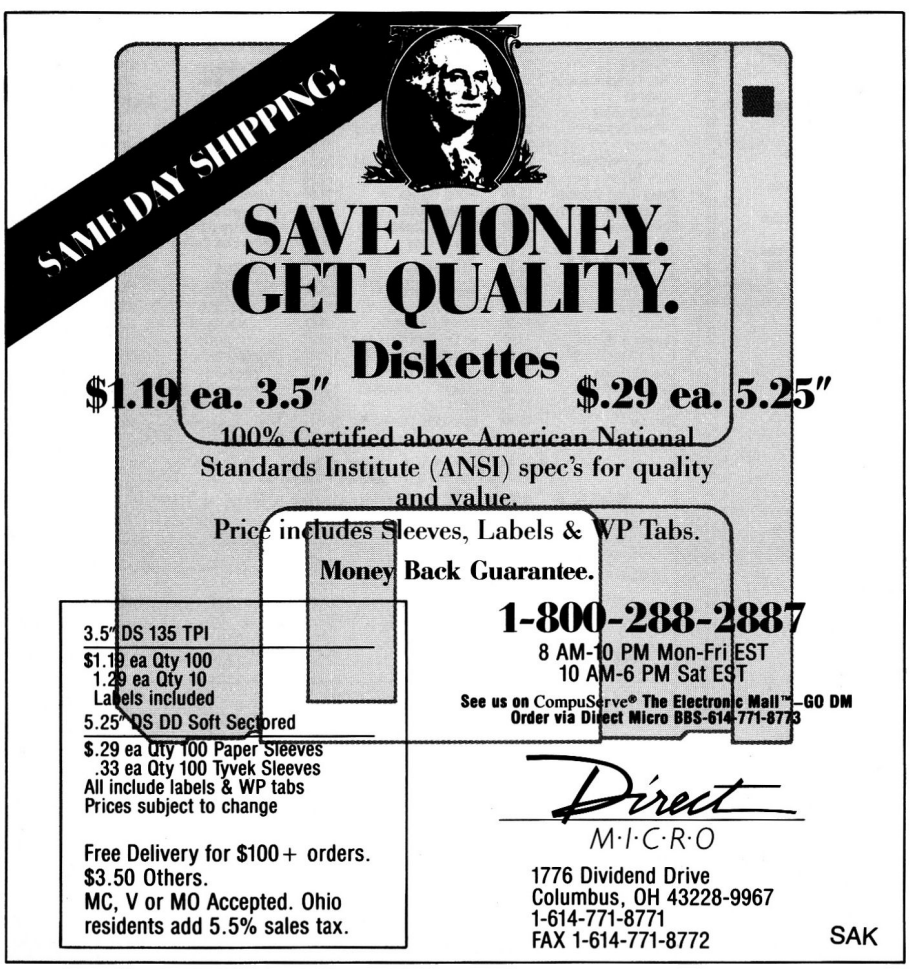
READING MESSAGE BOARDS

After scanning and saving the help file, you're ready to select another option displayed on the main menu. The kinds of messages tell you a lot about the character of a BBS, so let's look first at the subboards where you post messages, then at the file and mail areas.

Tip #6: To give more people a chance to log on, many BBSs limit your time for each call. Some BBSs also restrict the number of calls and files you can download each day. Once you've learned your way around a busy BBS, take a minute to plan your visit in advance. That way, you won't find yourself trying to squeeze a 15-minute file transfer into ten remaining minutes.

BBSs manage messages in similar ways, although there are important variations, as you'll see in Part 2 next time. A simple command such as *B* in **Figure 1** takes you to the message-board section of the BBS. Here you'll find another help screen of commands, as **Figure 2** shows.

Like bulletin boards at the grocery store with spaces for Babysitters, Odd Jobs, and For Sale, each BBS provides subboards devoted to different topics. Here on Hypothetical BBS, the <L>ist command displays a roster of subboards called Apple II Hardware, Apple II Soft-



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ware, Games, Sound Off, and Classified Ads. In each board, you can read the messages <F>orward from earliest to most recent or in <R>everse order, beginning and ending with any message number. Some systems let you <S>can just the message headers, displaying message number, author, and subject. This way you can mark those messages whose subjects interest you and go back and read them later.

When you return to this BBS, the <N>ew command lets you read only those messages callers have posted since you left. After reading the messages on one board—Apple II Software, for example—you can use the > command to move to the next board on the list or the <J> command to skip through the list.

When you have a question, comment, or answer for others, <P>ost it. To write messages for posting (or mailing) on line, you can either use the BBS' on-line editor or the editor in your own communications program.

Tip #7: New messages and files are the lifeblood of any BBS. Contribute! Don't worry about perfect spelling or punctuation.

If you know what you want to say before you log on, you'll save time by writing your message first, saving it to disk or to RAM, then uploading it all at once when you get on line.

USING THE FILE LIBRARY

<Q>uitting the message area returns you to the main prompt so that you can move to the <F>ile library. Unlike subboard messages, library files, which aren't limited to plain text, can include programs, graphics, templates, and other file types. Similar to subboard messages, files are often divided into catalogs or directories by subject—games, utilities, IIGS, telecommunications, AppleWorks, and many more. Typing ? again here might show you commands like those in **Figure 3**.

Because file transfers create the greatest difficulty for on-line beginners, capture the <I>nstructions during your first visit so that you can review them in more detail later off line. To see the kinds of files available, try <S>elect directory,

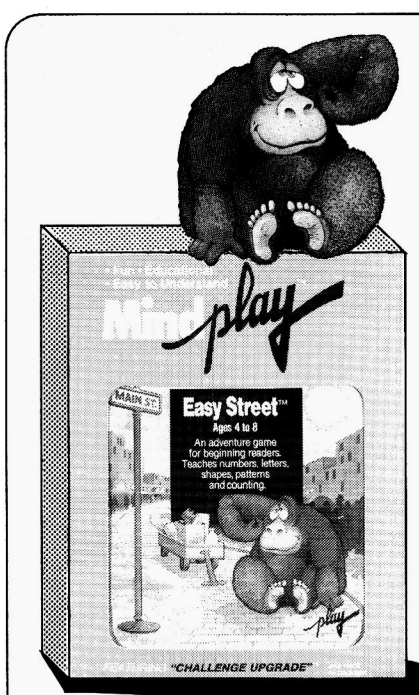
Figure 3. Typical file-library commands.

```
     Hypothetical BBS:  FILE LIBRARY COMMMANDS

<S>ELECT Directory  <I>NSTRUCTIONS on file transfer
<L>IST files        <F>IND character string
<U>PLOAD a file     <Q>UIT to previous menu
<D>OWNLOAD a file   <T>ERMINATE connection
```

Figure 4. Typical electronic-mail commands.

```
          Hypothetical BBS:  E-MAIL COMMANDS

<S>END mail to another user    <U>SERS on this system
<R>EAD your mail               <Q>UIT to previous menu
<H>ELP                         <T>ERMINATE connection
```

which will probably lead you to a list of all library categories. From here you can choose one that interests you. Then <L>ist the files in that directory or, if you're looking for a particular kind of information, try <F>inding a character ►



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string. Say, for instance, you want an AppleWorks database template to keep track of your record collection. You select the AppleWorks directory, search it for *phonograph* or *record* or *template*, and, if you find a file that suits you, download it to your disk. <Q>uitting the library area returns you to the main command prompt so that you can move to <M>ail.

Tip #8: Not all communications programs can format disks, so it's handy to have a few formatted disks prepared before going on line. If you see a lot of file transfers in your future, be sure to download Floyd Zink Jr.'s **Binary Library Utility (BLU)**, currently the most useful Apple II-file telecommunications tool.

Maybe you'd like to thank the friend who told you about Hypothetical BBS. Maybe you want to buy equipment described in the Classified Ads message board. Whatever the reason, you'll soon want to exchange electronic mail with other users on the system.

When you <S>end mail, the BBS will prompt you for the user's exact name or number (available with the <U>ser command) and for your note's subject. Here, as in the message area, you can write and edit your message with either the BBS on-line editor or your own. When you return to this BBS, you may see the notice, "You have mail waiting." After reading the first message, you can often <A>nswer it, <F>orward it to another user, <R>eread it, or continue to the <N>ext waiting message. (See **Figure 4** for a list of typical commands.) Note that the sysop can read electronic mail, although it's invisible to other users.

Tip #9: When you end your on-line session, use the BBS' disconnect command. If you just hang up, waiting callers may not get through.

As you can see even in this imaginary tour, BBSs have extraordinary potential. More than just a way to gather, organize, and distribute information, they connect people for debate and action. Especially when networked together, the potential of BBSs rivals the national information services. Tip #10: Tune in next time for a closer look at some BBSs that demonstrate the powerful uses of this technology.■

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). He's especially interested in hearing about off-beat BBSs for an upcoming column.

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INDEX TO ADVERTISERS

Reader Service		Page
58	Abby's Discount Software	123
286	Abracadata	41
190	Addison-Wesley	84
170	Aho Distributors	124
*	Applied Engineering	21, 24, 25, 55, 58, 59, 71, 75, 77
54	Applied Ingenuity	CV3
65	Az-Tech Computer Services	103
*	Beagle Bros Inc.	2, 3
151	Big Red Apple Club	93
145	Blue Lion Software	40
32	Britannica Software	6, 38, 39
25	Burke Transfer Services	123
116	Canadian Computer Outlet	123
185	CDA Computer Sales	114
62	Central Point Software	49
*	CH Products	CV4
123	Checkmate Technology, Inc.	40
115	Chinook Technology	115
187	Cinemaware	9
*	Claris Corp.	10, 11
236	CMS Enhancements	23
79	Coit Valley Computers	42
124	CompuServe	83
109	CompuShare	122
296	Computer Cover	41
205	Computer Direct	94, 95
288	Computer Friends	43
142	Computer Plus Co.	124
154	Compu-Teach	127
134	Dandam Software	124
19	Davidson & Associates	13
134	Dayton Computer Co.	124
184	Digital Vision	103
24	Direct Micro	108
108	Diversified Software Research	102
28	Eclat Micro Products	123
220	Educational Resources	119
201	EPYX	27
202	EPYX	29
203	EPYX	31
204	EPYX	32, 33
200	EPYX	34, 35
210	EPYX	37
132	First Class Peripherals	90, 91
*	GEnie	111
*	Golem Computers	101
17	Hi-Tech Distributors	122
*	Intuit	67
	inCider	
	ShareWare Connection	48D
	Begin Computing	118
	Dealer Sell	112
	Organize Binders	125
2	L&L Productions	123
290	Lance Haffner Games	110
175	Laser Computer, Inc.	63
6	Master Media Supply	123
4	Merritt Computer Products	123
186	MECA	17
248	Memory Plus Dist. Inc.	36
251	MGR Software	112
168	Micol Basic	92
244	Milliken Publishing Co.	87
174	Mindplay	109
55	National AppleWorks User Group	123
98	Nexo Distribution	122
89	North Forty Ent.	124
*	Open-Apple	102
42	Origin Systems	117
77	PIE	122
*	Preferred Computing	44, 45
128	Programs Plus ..	48, 48a, 48b, 48c
269	Public Domain Exchange	76
136	Quality Computers	85
294	Quantum Computer Ser.	18, 19
198	Redmond Cable Corp.	93
185	S.A. AuTeur	122
293	Seven Hills Software Corp.	97
143	Silicon Express	107
64	Silver Burdett & Ginn	122
218	Sir-Tech Software, Inc.	89
292	Softdisk	1
96	Softronics	122
127	Soft-Spoken	124
249	Softech Industries	124
270	Software Discount of Am.	105
290	Stone Edge Technologies	98
160	Strategic Simulations	5
156	subLOGIC Corp.	99
78	TCX Ltd.	124
82	Teck Parry	122
68	Thunderware, Inc.	CV2
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260	Zimco	4
189	Zip Technology	69

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Around the World in 128K

by Scott Mace

"On-screen sightseeing adds a new, realistic dimension to adventure gaming."

If you think exploring only strange new worlds in the latest adventure or fantasy game is thrilling, try staying home awhile. Discovering more about our own world is proving to be just as exciting. Entertainment and education converge in two Apple II game series as you travel the globe—speaking other languages, eating other foods, observing other customs, and living other lives.

WHERE, OH WHERE

On a very elementary level, the three Carmen Sandiego games from Broderbund Software (17 Paul Drive, San Rafael, CA 94903-2101, 415-492-3200) begin to open a child's eyes to the world around us. Broderbund pioneered this genre in 1985 when it introduced **Where in the World Is Carmen Sandiego?** ($39.95). Hopping from city to city in search of members of a notorious gang of thieves and the mysterious Carmen herself, you learn bits of local history and culture at the same time. Along the way, you gather clues about your subject, including his or her gender, appearance, hobbies, and make of automobile. Only when you've stored enough clues in a simple database will Interpol issue a warrant for the suspect's arrest. Once you apprehend the crook, the game ends.

Aimed strictly at kids, Carmen Sandiego stresses basic skills such as map reading, note taking, and organization. If you pay attention, you can solve the games easily. Teachers love Where in the World because this exciting, educational software grabs students' attention.

Two follow-up games provide more of a challenge. **Where in the USA Is Carmen Sandiego?** ($44.95) equips Interpol with a Crime Computer and adds other suspects' attributes such as favorite music and food. Broderbund has replaced the original games' overly cute "Keystone Cops" with more appropriate police cars racing by on screen.

Where in Europe Is Carmen Sandiego? ($44.95) is the latest in the series, and the first to require 128K instead of 64K. This time clues don't fall into your lap as easily as in the first two games—you have to work for them. The game splits the Crime Computer into a Notebook and a Crime Lab. In the Notebook, you record the usual information about suspects—sex, hair color, eye color, favorite movies and books. In the Crime Lab, you log your notes into the crime computer to see whether there's enough evidence to issue a warrant. There's also a database of information about each country's languages, currency, and flag colors.

A handy hardcopy reference accompanies each Carmen Sandiego game: *The World Almanac* with Where in the World, *Fodor's USA* with Where in the USA, and the *Rand McNally Concise Atlas of Europe* with Where in Europe.

Learn about local history and develop your map-reading skills as you chase a notorious gang of thieves around the Continent in Where in Europe Is Carmen Sandiego?

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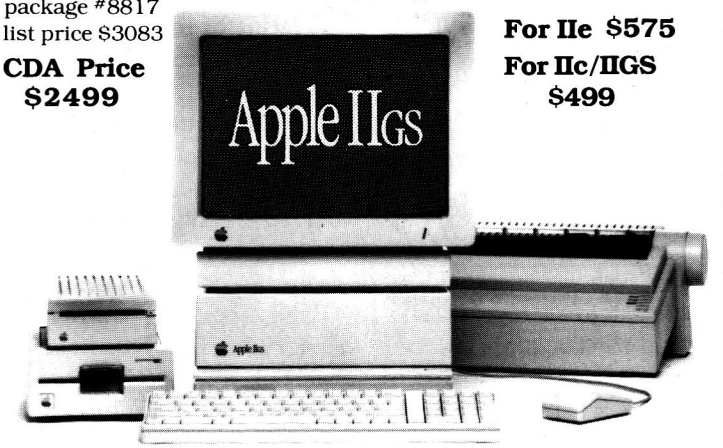

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MACE ON GAMES

Ticket to . . . series of travel adventures. Adults and kids alike will find them endlessly fascinating. Each of the Blue Lion games includes both scenery graphics and quizzes.

Pay attention to your maps as you make your way across town or across a country; solving various puzzles leads to occasional rendezvous with friends. The game's goal is to keep from running out of money as you try to absorb the local culture.

During the quizzes, the simulation is suspended as the game asks you questions about your host city or country. Questions focus on history, customs, language, and jargon. You may even have to convert degrees Fahrenheit to degrees Celsius on a moment's notice. The quizzes are rarely repetitive, and they pop up in such a lively fashion that learning becomes synonymous with fun.

The series begins with **Ticket to London** ($39.95), which recognizes some of the realities of travel. For instance, you need to convert your U.S. dollars and keep an eye on currency fluctuations. You also need a place to sleep each night—and don't forget about your meals. While you could walk to all your destinations, it's much quicker to take a cab—but it's not a free ride, either.

You'll also go shopping. At Harrod's, you can pick up an umbrella, then discover to your delight that it keeps you dry enough to stave off sickness resulting from a British midday drenching.

After jolly old England, you'll be ready for challenges on the continent in **Ticket to Paris** ($39.95) and **Ticket to Spain** ($39.95). Like the London game, you make decisions by toggling through menus of possible actions or responses. Fill-in replies to questions are rare, but try answering in French or Spanish. On-screen sightseeing is excellent preparation for an actual journey to Europe and adds a new, realistic dimension to adventure gaming.

If Blue Lion stopped there, I'd be satisfied. But this company is dedicated to two things—tailoring your activities in each game to the native culture, and improving the user interface and overall realism in each subsequent game. With its focus on cuisine, for instance, Ticket to Paris provides a numerical nutritional value associated with each kind of food you eat. Consume too many nutrient-deficient meals and you wind up losing valuable time in the hospital.

The Paris game also includes an on-line dictionary with a subset of practical translations. But beware—the dictionary scrolls slowly (which will discourage you from using it); if you rely on it too much, it becomes "tattered" and entries disappear one by one. You might even have to buy a new "copy" at a store.

Unlike the Paris game, Ticket to Spain takes you over an entire country. Emphasizing history instead of cuisine, you'll visit the bullring in Madrid, the remains of the Moors' Alhambra palace in Granada, and other famous sites. One hint: If you can't decide which location is the answer to a riddle, guess Salamanca. It works more often than not.

Another interesting twist in Ticket to Spain is that in your role as an American student,

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Geography's lively and fun in Blue Lion's Ticket series. The goal is to keep from running out of money as you try to absorb the local culture; quiz questions focus on history, customs, and language.

you can "phone home" for more money. But watch out for your unfriendly cousin, who often beats you to clues before you can get there.

The latest Blue Lion travel simulation is set in our very own Washington, D.C. Replacing menus are detailed three-dimensional maps of seven different parts of the city. After three years of exploring Washington in real life, even I learned something about the city. It's an ideal starter for someone planning to visit. **Ticket to Washington, D.C.** ($44.95) also supports mouse input.

Each Blue Lion game keeps track of the time of day, an important aspect since many museums, businesses, and the like keep realistic hours. You have to plan ahead, unlike the scheme in Carmen Sandiego, which doesn't care what hour you arrive in a given country.

Best of all, unlike the Carmen Sandiego games, the Ticket series lets you explore the many wonders of each Blue Lion world in any sequence. The freedom you experience in wandering through each city or country and the continuous random generation of puzzles is exhilarating for the adventure-game player who's tired of step-by-step sameness and rote memorization of moves.

Endless opportunities exist for additional travel games. We haven't even begun exploring the Orient, the Sahara, or our neighbors in North and South America. The sky's the limit for travel simulations, whether you choose the simplicity of Carmen Sandiego or the complexity of the Ticket series. And unlike many adventure games, these simulations don't make you wait for a nuclear holocaust before you tour foreign lands. Happy roaming.■

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

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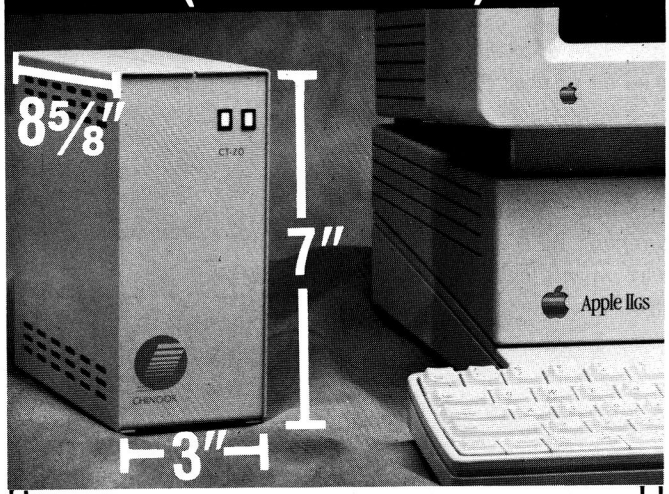

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HINTS/TECHNIQUES

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.

Color Mixer

by Paul Morville

Although programming the IIGS' super-hi-res display can be fascinating and enjoyable (see "Basic Paint," October 1987, p. 67, for an easy way to do this), sooner or later you'll want to use all 4096 colors of the GS. That's a a little more complicated. Instead of selecting colors by number, as in previous Apples, you now choose colors by the amount of red, green, and blue they contain. Color Mixer (see the **Program listing**) simplifies this process.

Type in the program and save it as Color.Mixer. When you first execute it, the super-hi-res screen appears. Hit the spacebar to let the program control the screen, then press T to call up the text screen. You'll now see red, green, and blue sliders with the following instructions:

Q← Red →W
A← Green →S
Z← Blue →X
<T> to see mixing on text screen
<G> to see actual color

Slide the asterisk with the keys mentioned above. Note the three numbers changing at the bottom of the screen. The two numbers separated by a comma represent the 2 bytes you must enter into the palette. If you're using Basic Paint, enter them as data statements in lines 4050-4070. Remember, there are 16 colors in a palette and 2 bytes for each color, so you'll need 32 numbers.

Program listing. *Color Mixer.*

```
1  HOME : REM  COPYRIGHT 1988, INCIDER  [1953]
2  FOR N = 768 TO 810: READ Q: POKE N,Q: NEXT   [1836]
3  PRINT "      | 0              15"  [1203]
4  PRINT "-------------------------"  [1428]
5  VTAB 3: PRINT "RED   |": PRINT "GREEN |": PRINT "BL
     UE  |"  [2602]
6  VTAB 3: HTAB 30: PRINT "Q <--> W"  [1282]
7  VTAB 4: HTAB 30: PRINT "A <--> S"  [1264]
8  VTAB 5: HTAB 30: PRINT "Z <--> X"  [1296]
9  VTAB 12: PRINT "T: TEXT": PRINT "G: GRAPHICS"  [2147]
10  POKE 49193,193  [662]
14  HGR : POKE 230,64: CALL  - 3086: TEXT   [1504]
15  CALL 781  [315]
20 P1 = 769:P2 = 775:GO = 768  [1663]
30  GET A$  [321]
31  IF A$ = "S" THEN GN = GN + 1  [1615]
32  IF A$ = "A" THEN GN = GN - 1  [1599]
33  IF A$ = "X" THEN BL = BL + 1  [1608]
34  IF A$ = "Z" THEN BL = BL - 1  [1612]
35  IF A$ = "W" THEN RD = RD + 1  [1625]
36  IF A$ = "Q" THEN RD = RD - 1  [1621]
37  IF GN < 0 OR GN > 15 THEN GN = 0  [1881]
38  IF BL < 0 OR BL > 15 THEN BL = 0  [1861]
39  IF RD < 0 OR RD > 15 THEN RD = 0  [1886]
40 A = (GN * 16) + BL:B = (0 * 16) + RD  [2306]
41  IF A$ = "T" THEN  POKE 49193,1  [1415]
42  IF A$ = "G" THEN  POKE 49193,193  [1511]
50  POKE P1,A: POKE P2,B: CALL GO  [1304]
51  VTAB 3: HTAB 9: PRINT "                    "  [1481]
52  VTAB 4: HTAB 9: PRINT "                    "  [1483]
53  VTAB 5: HTAB 9: PRINT "                    "  [1485]
55  VTAB 3: HTAB 9 + RD: PRINT "*"  [1237]
56  VTAB 4: HTAB 9 + GN: PRINT "*"  [1238]
57  VTAB 5: HTAB 9 + BL: PRINT "*"  [1233]
58  VTAB 20: PRINT "VALUE: "A","B"  "  [1476]
59  VTAB 21: PRINT "NUMBER: "RD + (GN * 16) + (BL * 25
    6) + 1"   "  [3259]
60  GOTO 30  [330]
100  DATA 169,191,143,0,158,225,169,15,143,1,158,225,9
    6,24,251,194,48,244,0,16,244,0,0,244,0,0,244,1,0,
    162,4,2,34,0,0,225,56,251,169,0,72,171,96  [6809]
```

The other number at the bottom of the screen represents the color number, which you calculate according to the following formula:

Red + (Green*16) + (Blue*256) + 1.(15 + (15*16) + (15*256) + 1 = 4096)

While displaying the color, all the mixing keys still work, should you need to fine-tune the color. When doing this, however, the red:green:blue ratio isn't visible, so mixing in the color-display mode is somewhat limited.■

Write to Paul Morville at 17 Twin Lakes Drive, Waterford, CT 06385.

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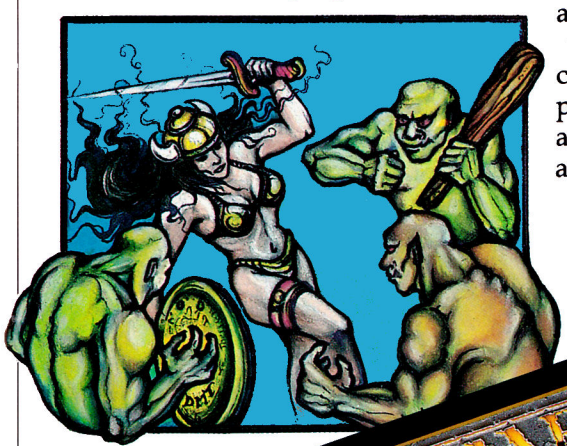

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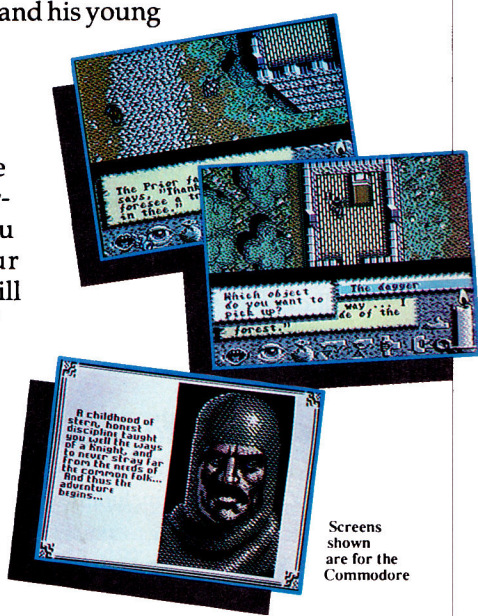

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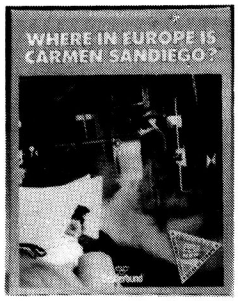

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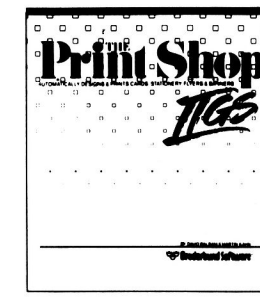

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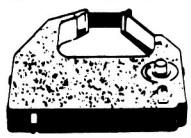

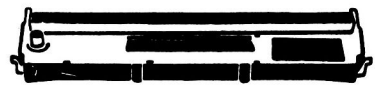

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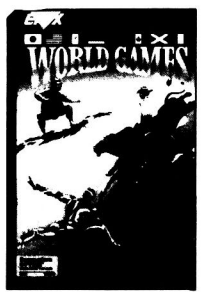

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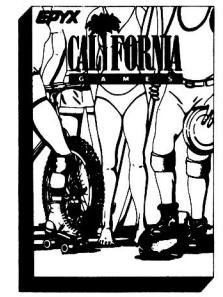

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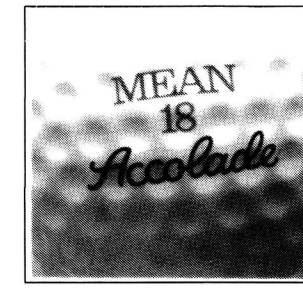

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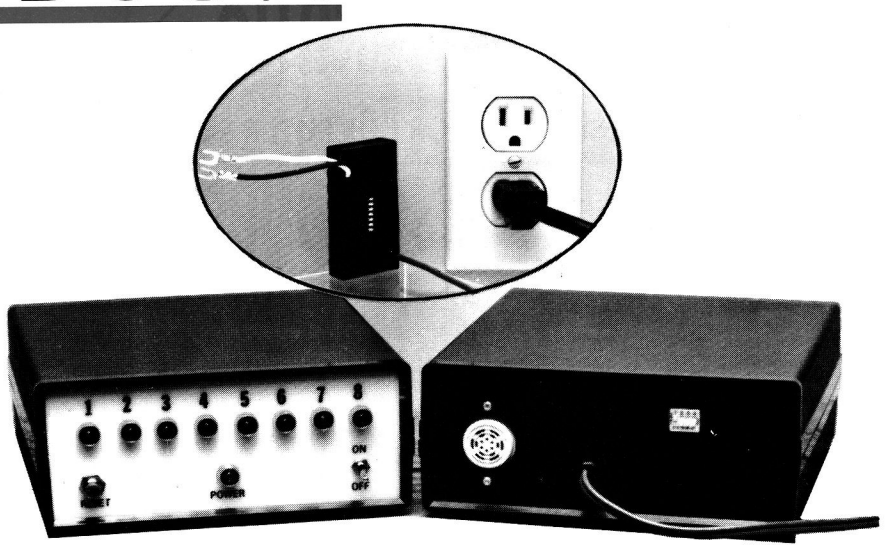

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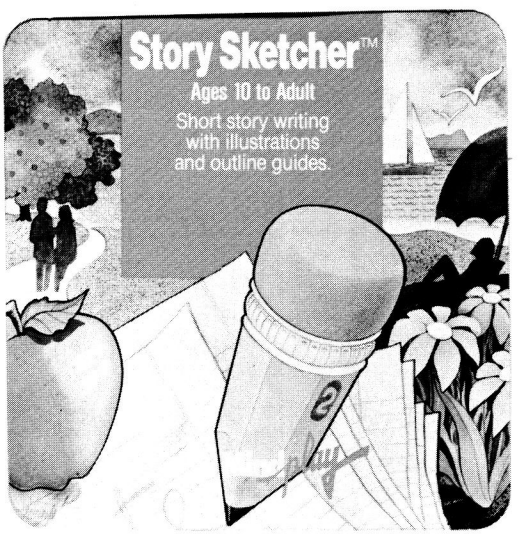

With Story Sketcher's ideas, graphics, and writing tips, kids can publish their own compositions, complete with illustrations.

choice to make it complete.

Story Sketcher is designed for children aged 10 and up. It's available in both home and teacher's editions; each is priced at $59.99 from MindPlay, 100 Conifer Hill Drive, Building 3, Danvers, MA 01923, (617) 774-1760. For more information, circle Reader Service number 354.

AMERICAN ART

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Art Gallery: American History is available for $44.95 from Unison World, 2150 Shattuck Avenue, Suite 902, Berkeley, CA 94704, (415) 848-6670. Circle Reader Service number 355 for more information.

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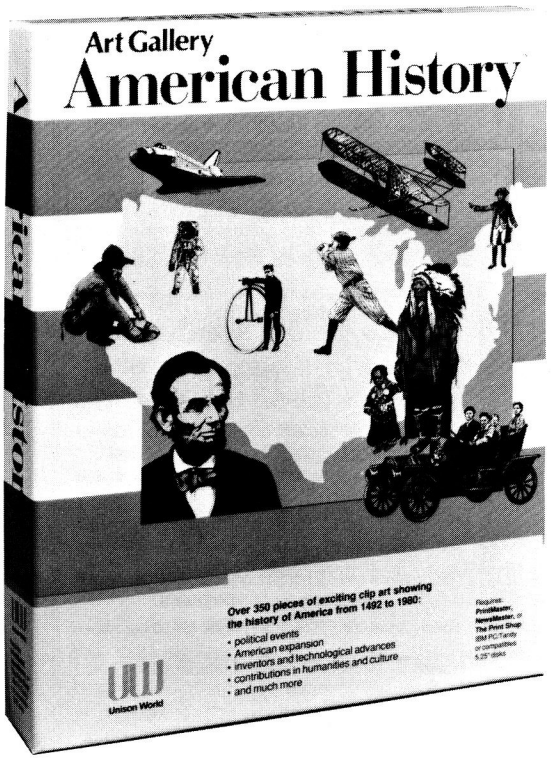
HARD AT WORK

AppleWorks is the latest addition to Osborne/McGraw Hill's series of ***Pocket References***. AppleWorks features, functions, and commands are listed alphabetically, with descriptions and how-to information included. *AppleWorks: The Pocket Reference* is available for $5.95 from Osborne/McGraw Hill. For more information, contact the company at 2600 Tenth Street, Berkeley, CA 94710, (415) 548-2805, or circle Reader Service number 358.



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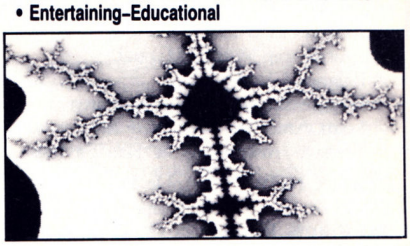

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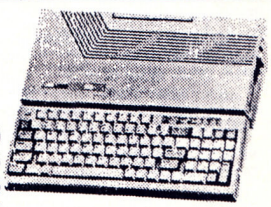

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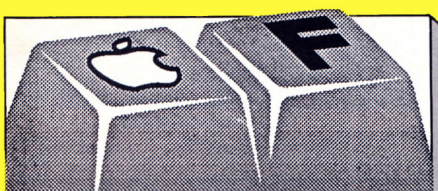

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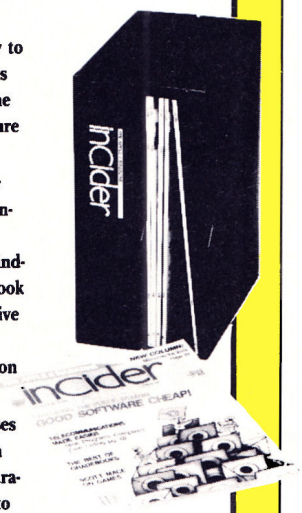

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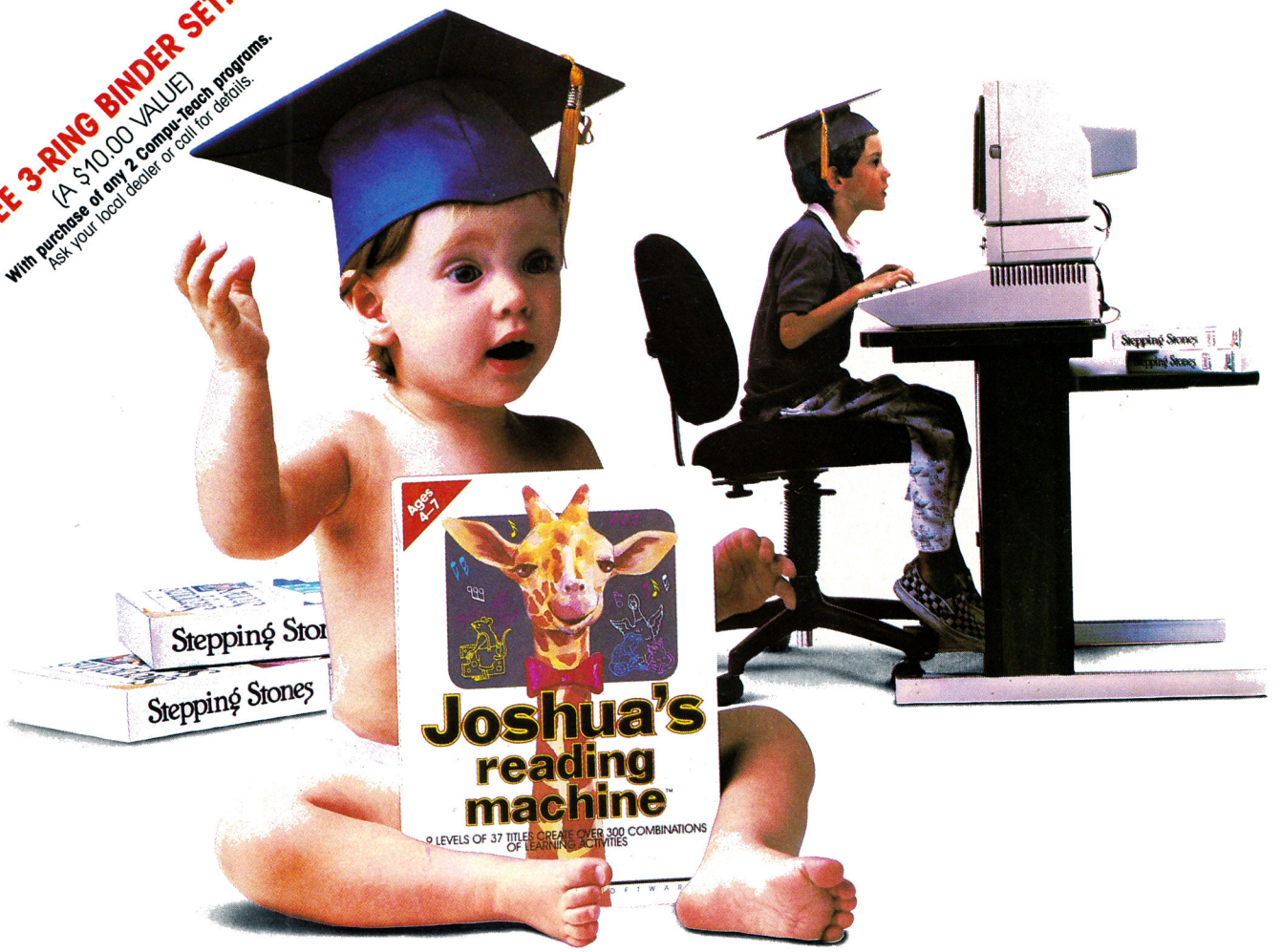

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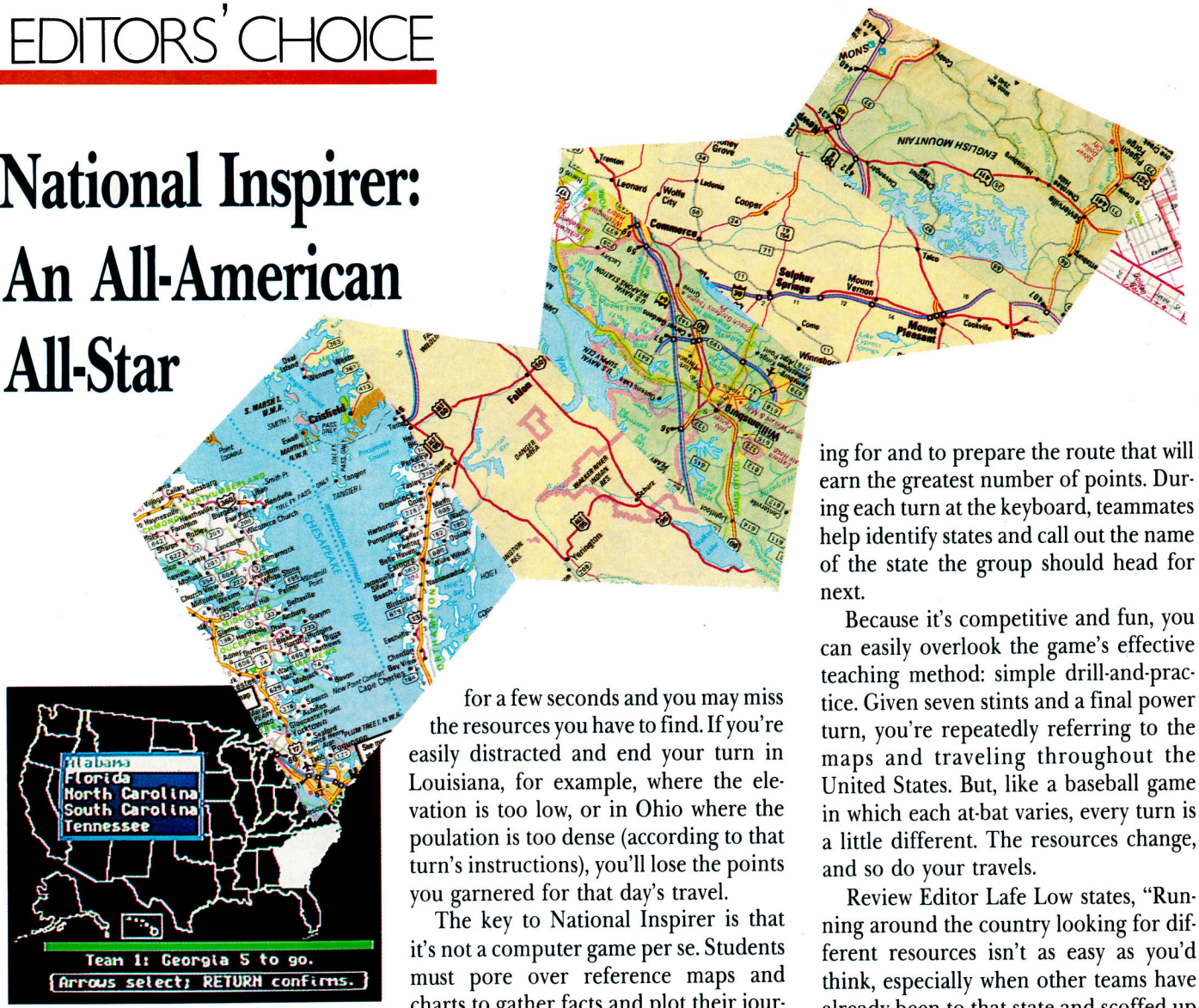

Sure, every Little Leaguer knows that the Baseball Hall of Fame is in Cooperstown, New York, and that Disney World is in Orlando, Florida. But could he or she recognize those states on the map? Could a student direct you to those locales from his or her home state?

Start playing Tom Snyder Productions' **National Inspirer**, and the answer is a resounding yes. This educational game creates a competitive furor that makes searching the states for the nation's leading producers of beef or cotton—or any of thirteen other natural resources—as exciting as discovering the Grand Canyon. It *inspires* learning, as well fostering both cooperative and competitive spirits.

To amass the greatest number of points possible, teams have to think quickly, stay alert, and communicate effectively. Take your eyes off the screen for a few seconds and you may miss the resources you have to find. If you're easily distracted and end your turn in Louisiana, for example, where the elevation is too low, or in Ohio where the poulation is too dense (according to that turn's instructions), you'll lose the points you garnered for that day's travel.

The key to National Inspirer is that it's not a computer game per se. Students must pore over reference maps and charts to gather facts and plot their journey. The time spent at the computer is fleeting—you simply move across the on-screen map as you indicate the ten states through which you'll travel. Your Apple provides the timer and keeps track of your points, but as Senior Editor Paul Statt says, "National Inspirer would be just as great as a board game."

Along with geography, the game teaches map reading (although those graphics could be a bit clearer), state abbreviations, and economic relationships among the states. After playing the game, older students can easily see, for instance, how the past summer's drought in the Midwest affects the corn crop, and ultimately raises the cost of food in grocery stores—whether they're in Oregon or Maine.

National Inspirer also stresses teamwork. While you're playing, everyone has to know which resources the team's looking for and to prepare the route that will earn the greatest number of points. During each turn at the keyboard, teammates help identify states and call out the name of the state the group should head for next.

Because it's competitive and fun, you can easily overlook the game's effective teaching method: simple drill-and-practice. Given seven stints and a final power turn, you're repeatedly referring to the maps and traveling throughout the United States. But, like a baseball game in which each at-bat varies, every turn is a little different. The resources change, and so do your travels.

Review Editor Lafe Low states, "Running around the country looking for different resources isn't as easy as you'd think, especially when other teams have already been to that state and scoffed up the points you need—but it sure is a blast."

"What's great about National Inspirer," adds Copy Editor Ellen Otis, "is that kids no longer have to suffer through those endless school reports about the state bird, the state flower, and the state motto. Thanks to this game, I can finally differentiate Wyoming from Colorado."

Priced at $69.95, National Inspirer is certain to reinforce Tom Snyder Productions' spot on the educational software map—and on a real map, you'll find the company at 90 Sherman Street, Cambridge, MA 02140, (617) 876-4433.

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Illustration by Dianne K. Ritson

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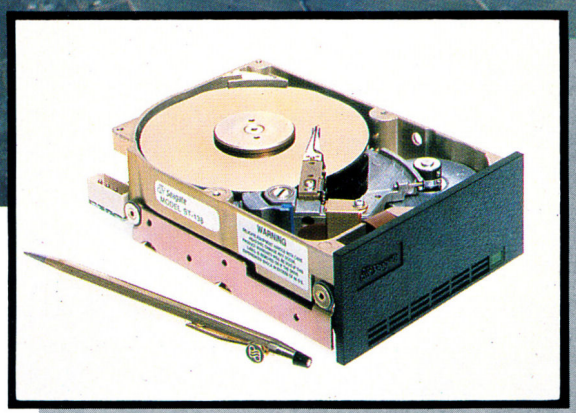

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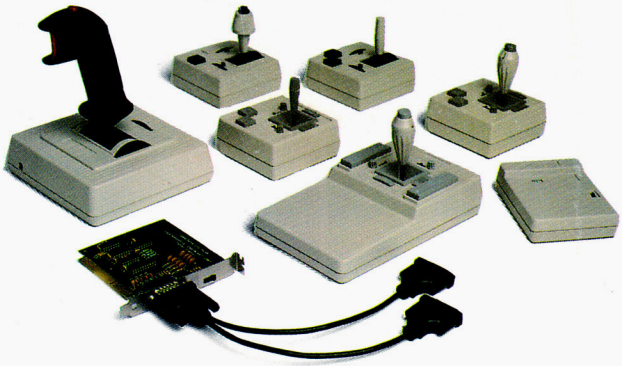

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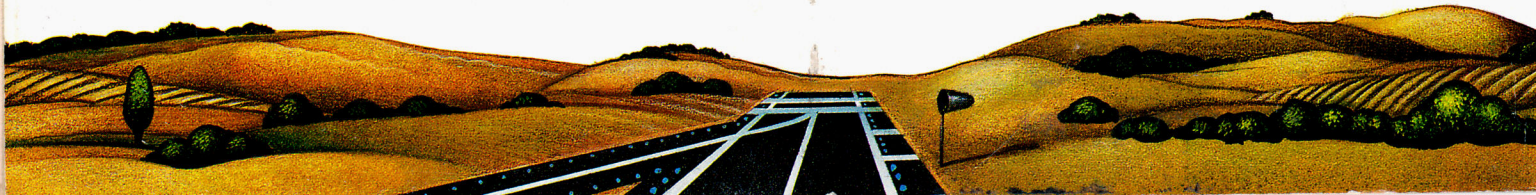
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