THE APPLE II MAGAZINE

inCider

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USE APPLEWORKS:
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p. 100

GO ON LINE!
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- Explore Information Services
- The Low-down on Downloads

GS WORD PROCESSORS
Who Needs Color?

STOCKING STUFFERS
Christmas Gifts For Less Than $20

REVIEWS
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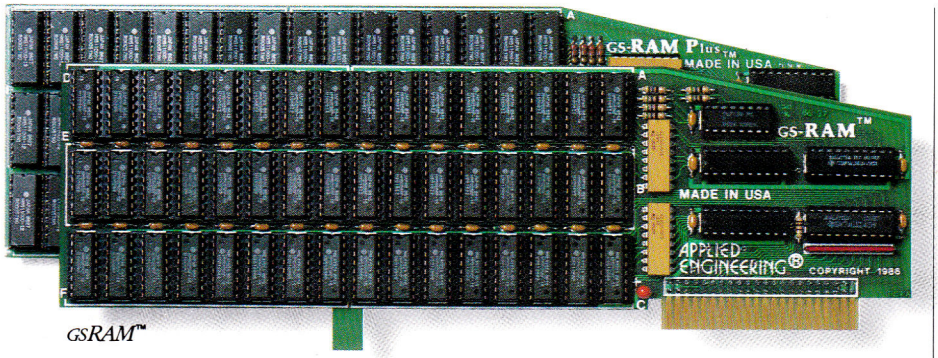
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GSRAM Plus™



GSRAM™

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GSRAM—for Normal Memory Requirements

GSRAM is available with 256K, 512K, 1 MEG or 1.5 MEG of memory already on board. If you don't need the full 1.5 MEG now, you can choose a GSRAM with less memory and expand it up to 1.5 MEG in the future—or upgrade to GSRAM Plus for a small charge.



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Steve Wozniak, the creator of Apple Computer

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GSRAM Plus can be expanded up to 8 MEG with an optional piggyback card.

Easy Expansion

Both GSRAM and GSRAM Plus use standard RAM chips that are readily available and just plug right in. So unlike other cards, you'll find expanding your GSRAM or GSRAM Plus easy, convenient and very economical. And with our optional ROM expansion module you can even increase the IIGS's ROM space and all in just one slot.

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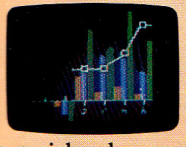
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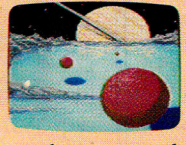
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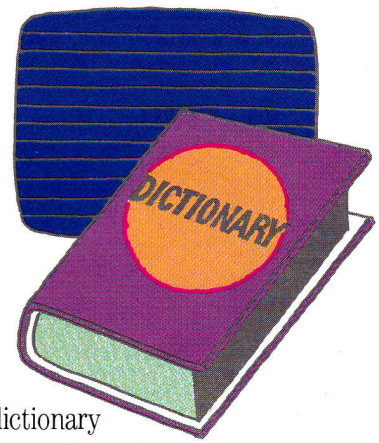
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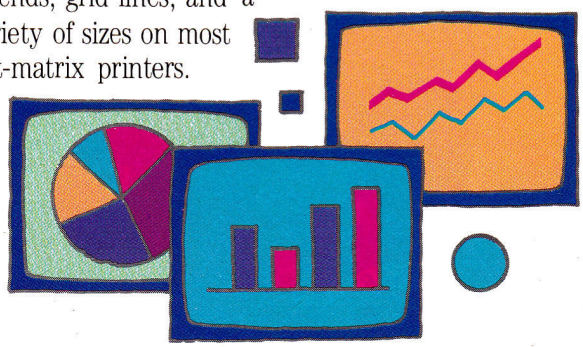
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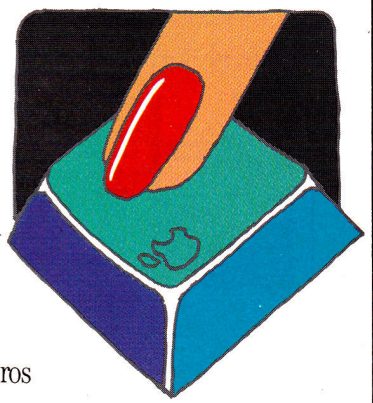


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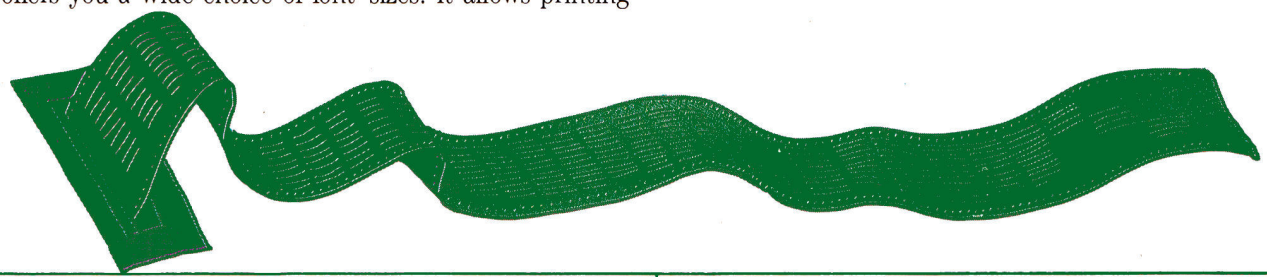
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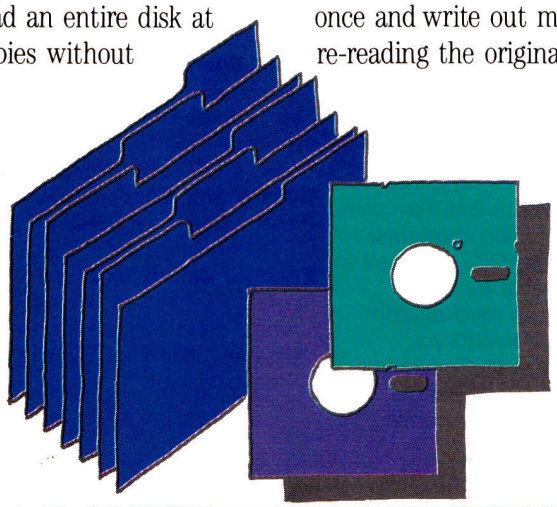
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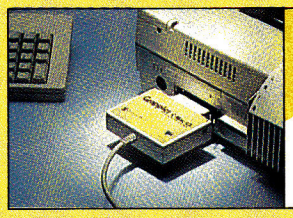
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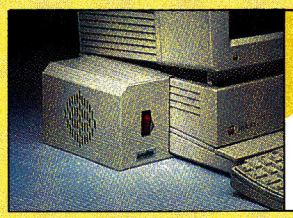
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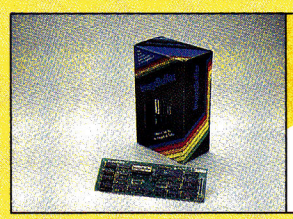


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ELECTRONIC ARTS®

inCider

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November 1987



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Change

by Deborah de Peyster, Editorial Director



"The Apple IIGS has brought a new interface—pull-down menus and mice, new music and graphics programs."

About two years ago, I arrived at *inCider*. It was budget time, and the former editor had left all the financial information in a neat stack of SuperCalc3a data disks. The attached note read, "All you need is here. Good luck." I needed it—I had to prepare the 1986 budget in three days, and I didn't even know how to turn on my Apple IIe.

It's amazing how fast things change. My trusty IIe soon became the most useful tool I had. I write every column on it, edit features with it, and have become something of an AppleWorks spreadsheet whiz. Things have changed a lot in two years; I have, you have, and the Apple II world around us has, too.

First about you. According to our most recent readership survey, more of you are women. It's nice to see women becoming more involved in computing; I have a personal interest in that. Three-quarters of you are married, which is a good ten percent more than the number who said their "I do"s last year. And, wouldn't you know it, you're older. Almost 80 percent of you fall between the ages of 25 and 49, as opposed to only about 60 percent last year. But don't worry, you can still celebrate that 29th birthday and we won't tell.

More than half of you own Apple IIes. At least a third of you own IIcs, and a small number already own IIGSs. But wait until next year: Most of you who plan to buy a new computer say it will be a IIGS. Half of you use the computer at home with your children, focusing primarily on math, word processing, and reading skills.

Since last year, changes in the Apple II market have kept up with you. The new IIGS is the most obvious difference, and it has brought a new style of software interface—pull-down menus and mice, as well as a lot of new music and graphics programs. New standards in memory have emerged: While 64K used to be enough for everyone, now 128K is the IIe/IIc standard, and 512K is becoming the standard of the IIGS. And the 3½-inch disk is becoming more popular, too.

In the Apple II market, some companies have merged and others have emerged. Beagle Bros and The Software Touch joined forces in the AppleWorks add-on arena; Activision bought Infocom; and Mindscape bought CBS Software. Software Publishing stopped producing Apple II products, while Video Technology brought a new Apple II look-alike called the Laser to market.

And it's getting difficult to tell who's selling whose programs these days, with a new arrangement called *affiliated labels*. For example, Broderbund Software distributes Origin Systems' games. First Byte Software develops and sells educational programs and Electronic Arts distributes them, too. It gets confusing, but the result is the same: Those programs are all available to you.

inCider has changed, too. We've enlarged our AppleWorks focus, and we've added a new home-education column and a new game section—our favorite, of course—Games Editors Play. And many more changes are in the offing, based on what you tell us you'd like to see.

One of the people who has been implementing those changes for the past year is Managing Editor Dan Muse. You haven't seen his picture in the magazine, but you've read several of his features, such as "Who Will Buy the IIGS?" (October 1986, p. 54), and his electronic-sports reviews in Games Editors Play. You'll be hearing more from him in the future as he takes on the job of editor in chief.

Yes, after two years I'm ready to pass the baton to Dan as I get more involved in starting new magazines for CW Communications/Peterborough. While I'll remain at *inCider* as editorial director through 1987, Dan will take charge of the magazine. Fittingly, once again it's budget time, and I've left all my material in a neat stack of AppleWorks data disks. I've enjoyed my time here; I've especially enjoyed seeing the creative ways you use Apple IIs to achieve your goals. After all, computers are merely the devices individuals use to find solutions. So goodbye, and good luck, Dan. The switch is on the back.■

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And that's just the beginning. DeskWorks also features an alarm clock (including a snooze button!). A screen saver utility for automatically dimming the IIGS screen when it's not in use. Even an on-line code-breaking game, Enigma.

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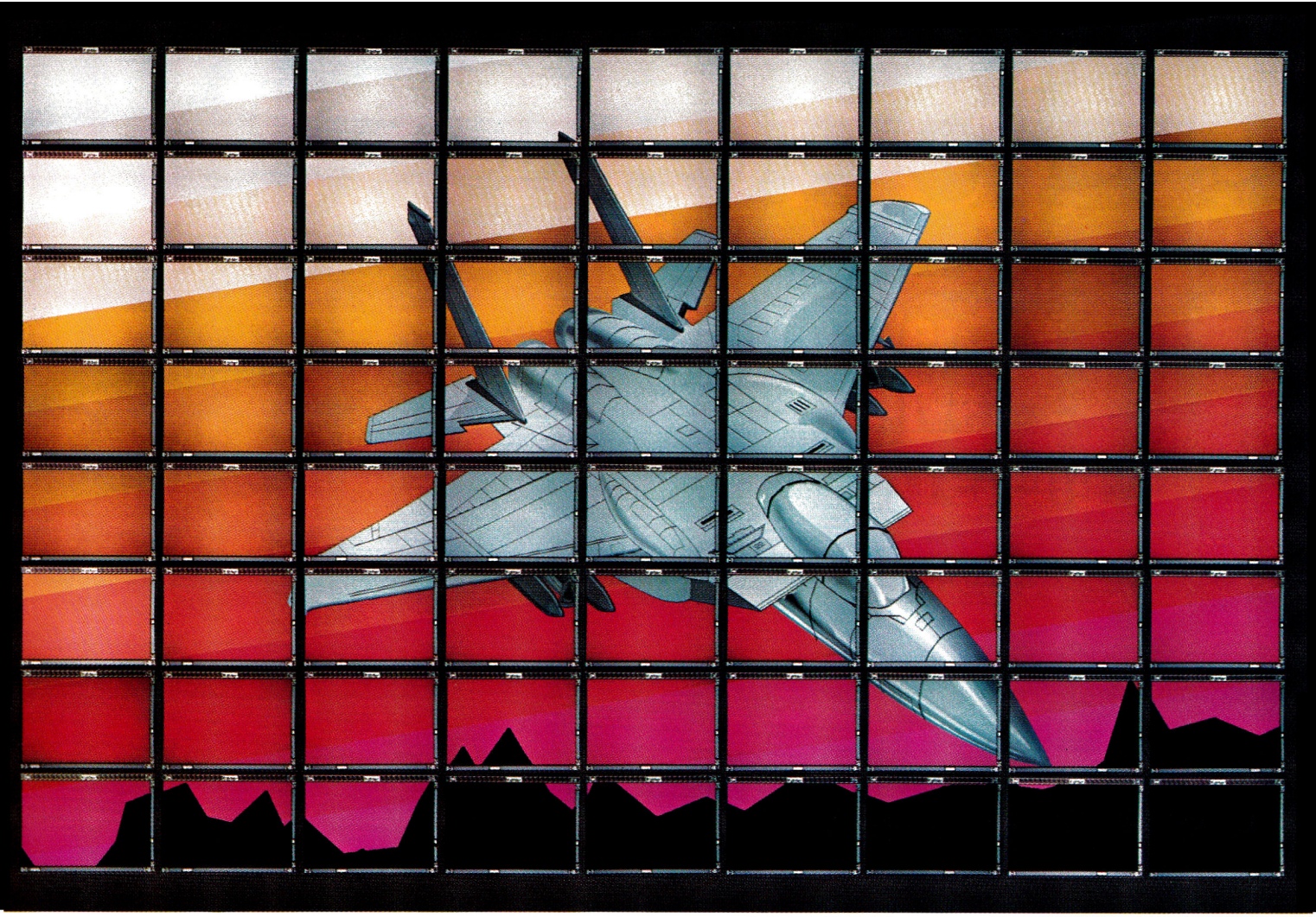
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Drawing by Dale Crawford of StyleWare

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MultiScribe GS is loaded with special features. Like direct AppleWorks word processing file compatibility. Built-in drawing and color editing. Compatibility with *all* major IIGS graphics programs, including Deluxe Paint II™ and PaintWorks Plus™ And power user keyboard commands, for total mouse/keyboard word processing functionality.

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LETTERS

Know the Cost

I had the same problem looking for job-cost-accounting software as Harriet Kerr did (Letters, July 1987, p. 14). After much research, I found a program called Job Cost Accounting, published by Charles Mann & Associates (Microcomputer Division, 55722 Santa Fe Trail, Yucca Valley, CA 92284, 619-365-9718). My Apple dealer then contacted the company and received its brochures.

I bought the program two years ago and have used it continually since then. It keeps records for both land development and individual costing of houses under construction. The program is easy to operate, and, when I had a problem, the manufacturer's service department was very responsive and provided the right fix instantly.

George Meurin
Ousamequin Pines
East Bridgewater, MA 02333

Elementary Achievers

The lack of women and minorities in science is beginning to be recognized. Research and common sense have enabled educators to pinpoint one major obstacle to increasing these numbers: Students drop out of science in the early grades.

Most elementary schools use lecture format, which precludes meaningful discussions, debates, or opportunities for problem solving. Science instruction has suffered and continues to do so because of this one-way communication and isolation. Can this deadly manner of presenting science to children be changed? Yes!

Corvus Systems has presented one of its eight nationwide National Corvus Education Awards to P.S. 125 (the Ralph Bunche School), in central Harlem.

Together with the Bank Street College of Eduction, we're creating an environment that facilitates collaborative inquiry, data collection, record-keeping, analysis, problem solving, and communication. This environment supports shared student-student and teacher-student communication through writing, interactive simulations, and other shared resources—an environment that provides opportunities for children to see the connections among scientific concepts and geographic, societal, historical, and literacy concepts learned elsewhere in the school.

Batya Lewton, Coordinator
Community School-District Five
433 West 123rd Street
New York, NY 10027

Foreign Fonts

Your May issue explained how to access printer fonts to achieve foreign-language characters (Apple Clinic, May 1987, p. 22). Unfortunately, every dot-matrix printer I've seen prints only some of these characters, and often not clearly.

I began using FontWorks 1.5 (The Software Touch) to make my own such characters. I now have a disk of 24 fonts I use with FontWorks. (You can use ten different fonts at the same time with FontWorks 1.5; with later versions you can use only four.) These fonts let you print accents above capital letters and the appropriate signs (in regular, italics, or bold) to mark long and short vowels in Latin, Italian, Spanish, French, German, and English.

These fonts also print ancient-Greek characters with accents and breathing above small and capital letters. Since Greek accents sometimes appear above breathing, it's important that the line be high enough to allow for all of this. FontWorks permits this kind of flexibility. (I use 13 pixels for the height of each line.)

I'd be happy to share these fonts with any reader who needs them; just write to me for more information. You'll also need a copy of FontWorks from The Software Touch, 9625 Black Mountain Road, Suite 204, San Diego, CA 92126, (619) 549-3091.

Grant C. Roti
64 Crescent Drive
Milford, CT 06460

Apples and Bombs

I take severe exception to the highly political nature and questionable accuracy of Paul Statt's "Bugs and Bombs" article (Stattus Report, June 1987, p. 18).

inCider is the wrong forum for Mr. Statt to express his political views. As this magazine is devoted to covering the Apple II family, an editorial on the Strategic Defense Initiative rings strikingly out of place.

While recognizing his demonstrated expertise in solving personal-computer problems, I doubt that Mr. Statt's technical credentials extend to the realm of supercomputer problems and advanced programming languages.

As programs become more sophisticated, the ability to test a program before implementing it has become equally advanced. It's no longer necessary to "smoke-check" programs and equipment! Programs can be tested in "real life" situations with the help of other computers that simulate existing conditions.

I'm also disturbed by Mr. Statt's "all or nothing" attitude. Would he prefer that no software manufacturer ever release a software package unless it can guarantee perfection? No, he and I would rather that software authors do their very best, even if it's not quite perfect. The same goes for SDI. If the choice is between certain death and possible salvation, I'll choose the possibility of life any day.

Kenneth Mitchell
Box 54 NAS
FPO San Francisco, CA 96654

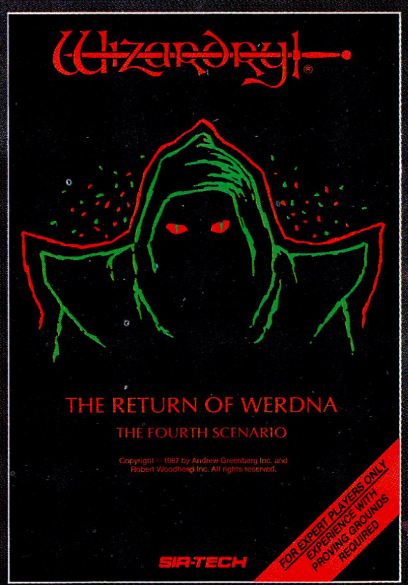
News Fit to Print

Here's a minor correction and solution for Paula Heilig's Newsroom printing problem (Apple Clinic, August 1987, p. 22). Changing the ImageWriter's mode to near-letter-quality won't affect the printed output, since the Newsroom page is printed as dot-addressable graphics and the NLQ setting affects only text output.

You can do two or three things to enhance the output, though. First, be sure you put the lever adjusting printhead distance to the closest setting—it's moveable to allow for multipart

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PLAY IT TO THE HILT!

forms. Second, use only new or newly inked ribbons for your final copy. I've had great luck with the MacInker from Computer Friends (14250 N.W. Science Park Drive, Portland, OR, 97229, 503-626-2291). "New" ribbons from stores have often been on the shelf for 6–10 months.

You can also spray the ribbon with WD-40 to prolong its life, as the solvent dissolves the ink, but I haven't tried this approach yet. Your copy shop might be able to use a slightly enhanced or darkened copier setting to make a new "master" for your final run, too.

Finally, some ImageWriters are very sensitive to "tired" ribbons. Mine reacts to underinking by printing the right side of every second pass lightly. In NLQ mode, half of each line of text is noticeably lighter on the right, unless the ribbon is fresh.

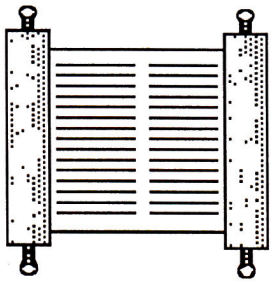
Marc Apfelstadt
2119 Tarrywood Drive
Greensboro, NC 27408

See "Recycling Your Color Ribbon," October 1987, p. 51, for additional information. —eds.

One Happy Customer

Several months ago you published my letter regarding a linefeed problem I had with Broderbund Software's Print Shop program. At that time, I'd written three letters without receiving a reply. Shortly after my letter appeared, I received several letters from Broderbund. While it couldn't offer a solution to the linefeed problem, the company was concerned about not answering my letters. I feel Broderbund went the extra mile in trying to right the situation, which I now believe was simply a foul-up in the mail. I want to express my sincere thanks to Broderbund for the prompt, generous way it tried to correct the problem.

Frank W. Naylor, Sr.
1911 Sandusky Avenue
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A Phone Call Away

"Support Your Local User Group" (*inCider*'s View, August 1987, p. 8) was a nice message to us all. Can you list the names, addresses, and phone numbers of some major user groups? That would be helpful for those of us who don't know where to start.

Barbara Brick
89 Hicks Street #6C
Brooklyn, NY 11201

A great place to start is with Apple's toll-free user-group number. Call (800) 538-9696, extension 500, to find the organization nearest you. See "Did Your Dealer Let You Down?" in our September 1987 issue, p. 70; "Not for Hackers Only," September 1985, p. 16; and "Guide to User Groups," September 1985, p. 105, for more information, too. —eds.

A BASIC Hint

"File-Type Converter" (Hints/Techniques, July 1987, p. 101), by Brian L. Zimmerman, solved a problem I've had with the Cauzin strip-reading system. When I read in the File-Type Converter strip, though, I found it was a text file instead of the expected BASIC program. Some users may not realize it's necessary to type NEW, then EXEC FILETYPE to get the BASIC program into memory. LIST it to make sure all's well, then SAVE under the desired name.

Sally Ringland
RD 2 Box 176
Clarion, PA 16214

Holy Macro!

I purchased AutoWorks after reading "Macros: Faster Than a . . ." (July 1987, p. 50). I based my decision on two factors: The program includes more than 50 macros, and it's compatible with Pinpoint's desktop accessories.

Much to my dismay, however, after booting up AutoWorks and selecting "notes" from the menu, I found that although it works with Applied Engineering's RamWorks cards, its compatibility doesn't extend to computers with either Apple's extended-memory card or Applied Engineering's RamFactor. As a result, I'll now have to go with Pinpoint's KeyPlayer program

and try to write my own macros.

While I love KeyPlayer and use it constantly, if you want to run it from RAM be sure to buy enough memory. For me, a 256K RamFactor isn't enough to hold all the AppleWorks functions and Pinpoint. I ended up expanding my card to 512K, which works nicely.

Thomas G. Rattine
67978 Pickering Road
St. Clairsville, OH 43950

An A for the c and e

I agree with Robert Barnett (Letters, May 1987 p. 10) that the Apple IIc is an excellent system and shouldn't be forgotten. I've invested thousands of dollars in my IIc system, and it now has everything from a modem to a voice synthesizer.

I'm quite disappointed in both Apple and *inCider* for "forgetting about" the IIc. Is it going to be another Lisa, pushed out into the cold? I know I have the support of other IIc owners when I say, "Up with the Apple IIc!"

Michael T. Mikovsky
608 N.E. 3rd Street
Belle Glade, FL 33430

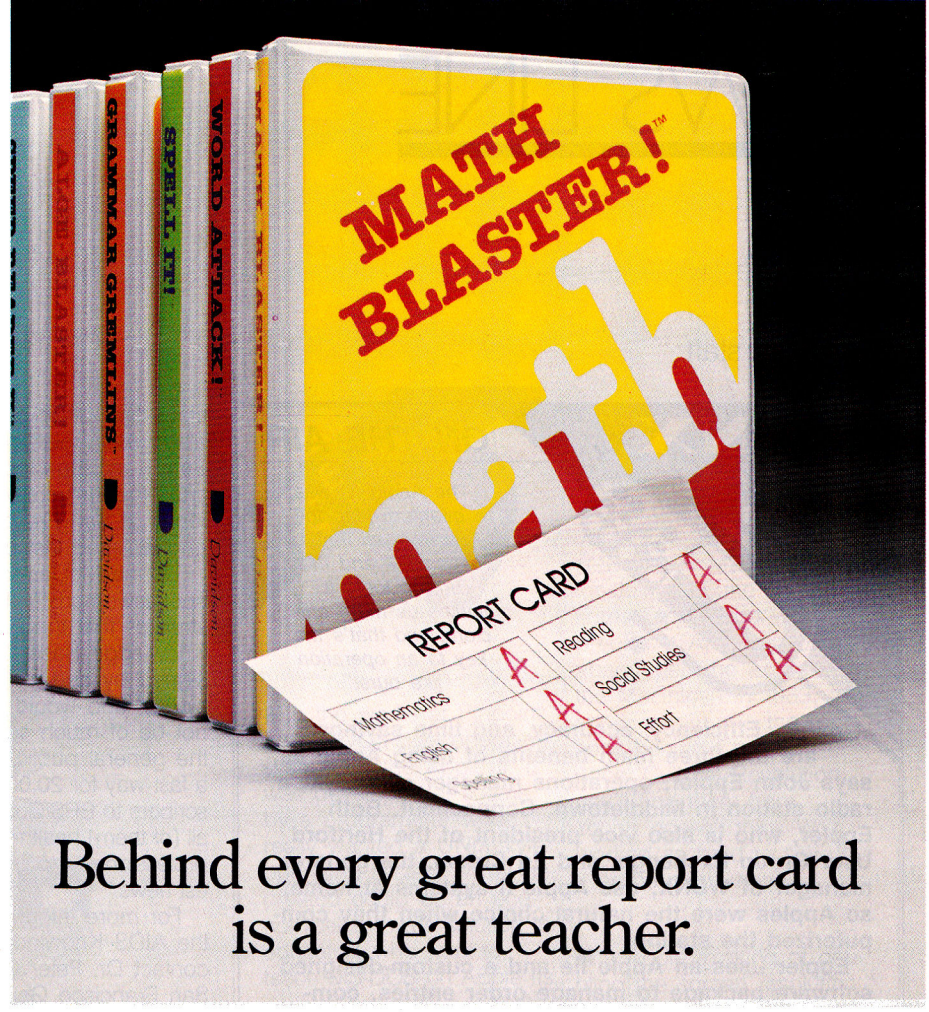
The IIe is the computer for the masses, the computer for every small business in the world, the computer for anyone who just wants to use a computer. Forget the Macintosh and GS. Add AppleWorks, RamWorks, Super MacroWorks, and Dollars and $ense and you can do it all.

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Les Dyer
1092 Hewitt Drive
San Carlos, CA 94070

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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.*



A great teacher teaches basics—the skills on which other learning is built. A great teacher encourages kids when they're right and is patient when they're wrong.

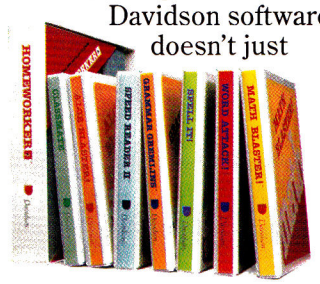
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NEWS LINE

by *inCider* staff

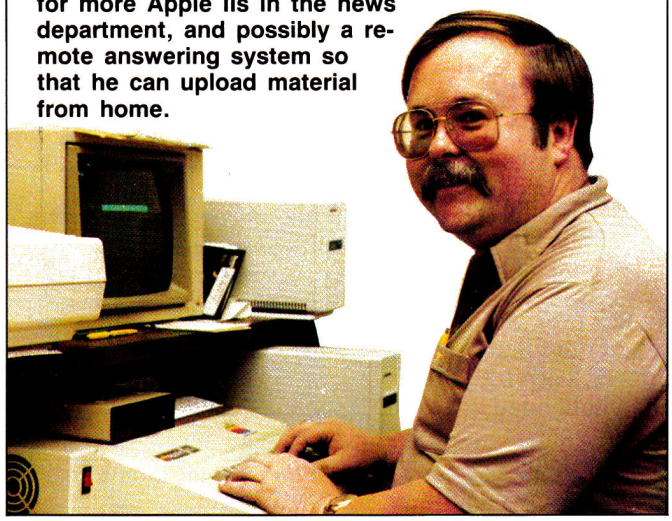
WCNX ON THE AIR



"[The Apple II] was a quantum leap for us from all that paperwork and the time it took. It makes us more efficient, and that's the key to an operation like ours."

Efficiency, accuracy, and time savings are the three main benefits of using Apple IIs, says John Eppler, operations manager of WCNX, a radio station in Middletown, Connecticut. Both Eppler, who is also vice president of the Hartford User Group Exchange, and Ed Creem, the general manager of WCNX, use Apple II systems at home, so Apples were the natural choice when they computerized the station.

Eppler uses an Apple IIe and a custom-designed software package to manage order entries, commercial and program schedules, and billing. The station's news and marketing departments use an Apple II Plus to write stories and create graphics for sales presentions. Eppler says future plans call for more Apple IIs in the news department, and possibly a remote answering system so that he can upload material from home.



AIDS ON LINE

The fight against the deadly disease AIDS (acquired immune-deficiency syndrome) is one of the most prolific and important areas of medical research today. New studies are completed daily—but every day more victims die.

An AIDS Knowledge Base on the BRS/Colleague and BRS/Search Services offers health-care professionals a source of news on the most current developments in the battle against AIDS.

The authors of the AIDS Knowledge Base are physicians and other professionals in AIDS-related fields at San Francisco General Hospital, the University of California at San Francisco, and affiliated institutions.

Donna McDermott, a spokeswoman for BRS, stresses that the AIDS Knowledge Base "is designed by and for professionals and would probably not be of much service to the general public. But it's a fast way for 20,000 subscribers to BRS/Colleague—all [of them] health-care professionals—to get the latest news."

For more information on the AIDS Knowledge Base, contact Dr. Peter Cohen at San Francisco General Hospital, (408) 821-5087. **—P.S.**

BRODERBUND GOES TO SCHOOL

Broderbund has always had a strong presence in schools. Classroom Apple IIs have teamed up with Carmen San Diego to teach world and U.S. geography; educators have used Bank Street Writer to teach writing skills, and The Print Shop to publish student newspapers. But except for its popularity with teachers, Broderbund hasn't targeted the classroom-education market—until now.

This fall, Broderbund is addressing teachers specifically in its new catalogue, appropriately called *Software for Education*. The company is offering several of its popular titles in school editions and lab packs, making it easier and more affordable to use Broderbund products in the classroom.

"We had received a lot of feedback from teachers using our programs," says Joanna Witzel of Broderbund, "but it was a problem for teachers to purchase individual units. The lab packs seemed to be a good solution to this."

Lab packs consisting of a program disk, teacher's guide, and four additional disks are available for Type!, Dazzle Draw, Fantavision, and the two Carmen San Diego programs. Animate, the Science Toolkit modules (including the new Body Lab module), The Print Shop Companion and all Graphics Library disks, On Balance, Toy Shop, and ShowOff (Broderbund's new video-presentation program) are also included in *Software for Education*.

For teachers who may not need all the extra disks of the lab pack, school editions include a single-user program disk, a teacher's guide, and a backup disk. School editions of Where in the World Is Carmen San Diego?, Where in the USA Is Carmen San Diego?, Science Toolkit Master Module, The Print Shop, Fantavision, Dazzle Draw, and Type! are available through the new catalogue.

The program titles featured in the new catalogue all carry a 90-day guarantee and are available for free 30-day preview. Teachers interested in taking a look at Broderbund's latest educational offerings can contact the company for a free catalogue at P.O. Box 12947, San Rafael, California 94913, (415) 492-3500. **—L.L**

THE SINS OF THE CHILDREN

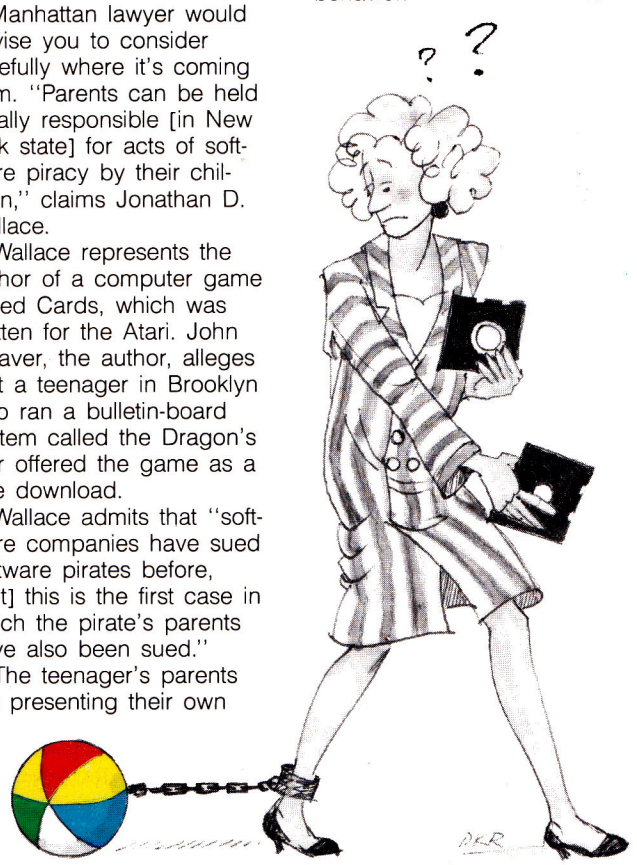
If your child's software collection is growing faster than his or her allowance, a Manhattan lawyer would advise you to consider carefully where it's coming from. "Parents can be held legally responsible [in New York state] for acts of software piracy by their children," claims Jonathan D. Wallace.

Wallace represents the author of a computer game called Cards, which was written for the Atari. John Weaver, the author, alleges that a teenager in Brooklyn who ran a bulletin-board system called the Dragon's Lair offered the game as a free download.

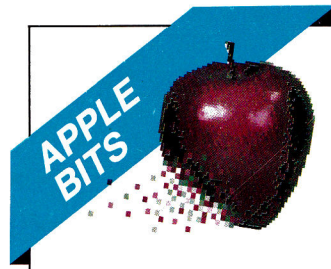
Wallace admits that "software companies have sued software pirates before, [but] this is the first case in which the pirate's parents have also been sued."

The teenager's parents are presenting their own defense and were unavailable for comment. Wallace says, "Our argument is that a parent who supplies the computer equipment and telephone line . . . used to operate a pirate bulletin board, and who then tolerates the trading of pirated software, contributes to the copyright infringement."

Why get the parents involved? Teenage pirates have been protected from litigation for copyright infringement not by their innocence and youth, but, Wallace says, because "teenagers usually have no assets with which to pay a judgment. Holding the parents responsible will give a strong incentive to families not to condone this type of behavior." **—P.S.**



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.*



■In the works at Pinpoint: an MS-DOS-style operating system for the Apple II. It was developed, it seems, by a programmer who really wanted a UNIX-style operating system. What he created could be an economical software solution for educators who want to teach MS-DOS on Apple IIs.

■Our look at IIGS word processors last month ignored some of the earlier mouse-driven software for the Apple II. But now we hear that Roger Wagner Publishing is working on MouseWrite IIGS.

■Lots of developers heard Apple Marketing Manager Tom Virden call for "AppleWorks on the IIGS" in *inCider* (September 1987, p. 16). But why are they all telling us that "somebody else must be doing it"?

■Is no news good news? Claris, Apple's "independent" software company, never mentions AppleWorks. Is Claris ashamed to admit that its biggest product runs on an Apple II, or is Apple holding onto AppleWorks?

■On bookstore shelves is a new biography of Steve Jobs: *The Journey Is the Reward*, by MacWorld editor Jeffrey Young (Scott, Foresman). If you want proof that Apple almost abandoned the Apple II for the Macintosh in 1983, and some insight into the reasons behind Chairman Jobs' Cultural Revolution, you'll find them here. Young doesn't think Woz worked as hard to save the II as he might have.

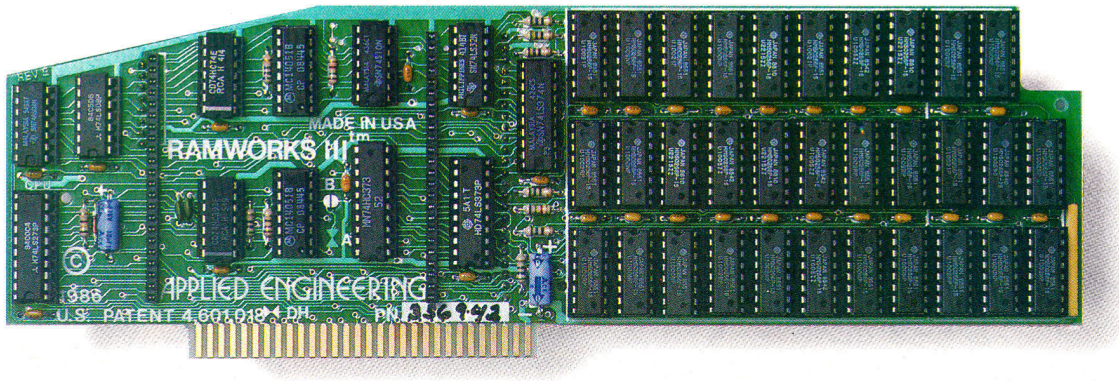
■Is Apple thinking of doubling the screen resolution for the next Apple II to 640-by-480?

■Roger Wagner's Apple IIGS Machine Language for Beginners should be availble by the time you read this.

■Activision (Mountain View, CA), famous first for games, is making a name for itself in productivity. Talk Plus is the latest in a series of programs (PaintWorks Plus, Draw Plus, and Writer's Choice Elite) developed by Version Soft for Activision. Scheduled for release in January 1987, this IIGS telecommunications program is called an "all-purpose communications tool."

RamWorks® III

Patented Performance from the Recognized Leader



The Best Selling, Most Compatible, Most Recommended, Most Expandable Card Available.

The AppleWorks Amplifier.

While RamWorks III is recognized by all memory intensive programs, NO other expansion card comes close to offering the multitude of enhancements to AppleWorks that RamWorks III does. Naturally, you'd expect RamWorks III to expand the available desktop, after all Applied Engineering was a year ahead of everyone else *including Apple* in offering more than 55K and we still provide the largest AppleWorks desktops available. But a larger desktop is just part of the story. Look at all the AppleWorks enhancements that even Apple's own card does not provide and *only* RamWorks III does. With a 265K or larger RamWorks III, *all* of AppleWorks (including printer routines) will automatically load itself into RAM dramatically increasing speed by eliminating the time required to access the program disk drive. Switch from word processing to spreadsheet to database at the speed of light with no wear on disk drives.

RamWorks eliminates AppleWorks' internal memory limits, increasing the maximum number of records available from 1,350 to over 22,000. *Only* RamWorks increases the number of lines permitted in the word processing mode from 2,250 to over 22,000. *Only* RamWorks expands the maximum clipboard limit from 250 to 2,042 lines. And *only* RamWorks offers a built-in printer buffer, so you won't have to wait for your printer to stop before returning to AppleWorks. And auto segments large files so they can be saved on two or more disks. You can even have Pinpoint or MacroWorks and your favorite spelling checker in RAM for instant response.

RamWorks, nothing comes close to enhancing AppleWorks so much.

The Most Friendly, Most Compatible Card Available.

Using RamWorks III couldn't be easier because it's compatible with more off-the-shelf software than any other RAM card. Popular programs like AppleWorks, Pinpoint, Catalyst, MouseDesk, Howard-Soft, FlashCalc, Pro-FILER, Managing Your Money, SuperCalc 3a and VIP Professional to name a few (and most hardware add on's like ProFile and Sider hard disks). RamWorks is even compatible with software written for Apple cards. But unlike other cards, RamWorks plugs into the IIe auxiliary slot providing our super sharp 80 column text (U.S. Patent #4601018) in a completely integrated system while leaving expansion slots 1 through 7 available for other peripheral cards.

RamWorks III is compatible with all Apple IIe's, enhanced, unenhanced, American or European versions.

Highest Memory Expansion.

Applied Engineering has always offered the largest memory for the IIe and RamWorks III continues that tradition by expanding to 1 full MEG on the main card using standard RAMs, more than most will ever need (1 MEG is about 500 pages of text)...but if you do ever need more than 1 MEG, RamWorks III has the widest selection of expander cards available. Additional 512K, 1 MEG, or 2 MEG cards just snap directly onto RamWorks III by plugging into the industry's only low profile (no slot 1 interference) fully decoded memory expansion connector.

It Even Corrects Mistakes.

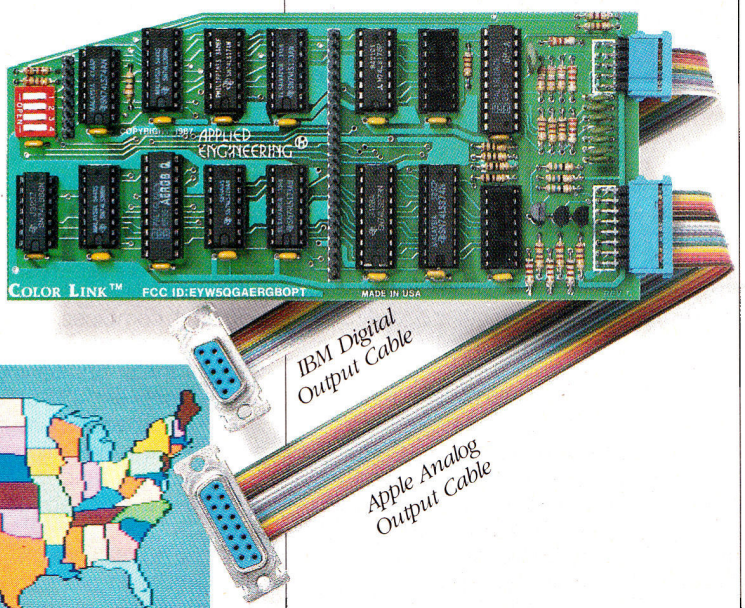
If you've got some other RAM card that's not being recognized by your programs, and you want RamWorks III, you're in luck. Because all you have to do is plug the memory chips from your current card into the expansion sockets on RamWorks to recapture most of your investment!

The Ultimate in RGB Color.

RGB color is an option on RamWorks and with good reason. Some others combine RGB color output with their memory cards, but that's unfair for those who don't need RGB *and* for those that do. Because if you don't need RGB Applied Engineering doesn't make you buy it, but if you want RGB output you're in for a nice surprise because the RamWorks RGB option offers better color graphics plus a more readable 80 column text (that blows away any

composite color monitor). For only $129 it can be added to RamWorks giving you a razor sharp, vivid brilliance that most claim is the best they have ever seen. You'll also appreciate the multiple text colors (others only have green) that come standard. But the RamWorks RGB option is more than just the ultimate in color output because unlike others, it's fully compatible with all the Apple standards for RGB output control, making it more compatible with off-the-shelf software. With its FCC certified design, you can use almost any RGB monitor because only the new RamWorks RGB option provides both the new Apple standard analog and the IBM standard digital RGB outputs (cables included). The RGB option plugs into the back of RamWorks with no slot 1 interference and remember you can order the RGB option with your RamWorks or add it on at a later date.

ColorLink™ RGB Option



True 65C816 16 Bit Power.

RamWorks III has a built-in 65C816 CPU port for direct connection to our optional 65C816 card. The only one capable of linearly addressing more than 1 MEG of memory for power applications like running the Lotus 1-2-3™ compatible program, VIP Professional. Our 65C816 card does not use another slot but replaces the 65C02 while maintaining full 8 bit compatibility.

Endorsed by the Experts.

A+ magazine said "Applied Engineering's RamWorks is a boon to those who must use large files with AppleWorks...I like the product so much that I am buying one for my own system." inCider magazine said "RamWorks is the most powerful auxiliary slot memory card available for your IIe, and I rate it four stars...For my money, Applied Engineering's RamWorks is king of the hill."



"I wanted a memory card for my Apple that was fast, easy to use, and very compatible; so I bought RamWorks."

Steve Wozniak, the creator of Apple Computer

Apple experts everywhere are impressed by RamWorks' expandability, versatility, ease of use, and the sheer power and speed that it adds to any IIe. With a RamWorks in your Apple, you'll make IBM PC's and AT's look like slowpokes.

Quality and Support of the Industry Leader.

RamWorks III is from Applied Engineering, the largest, most well supported manufacturer of Apple peripherals and the inventor of large RAM cards for the Apple. With our 5 year no hassle warranty and outstanding technical support, you're assured of the most trouble free product you can buy.

It's Got It All.

- 15 day money back guarantee
- 5 year hassle free warranty
- Built-in super sharp 80 column display (U.S. Patent #4601018)
- Expandable to 1 MEG on main card
- Expansion connector for possible future expansion to 16 MEG
- Can use 64K or 256K RAMs
- Powerful linear addressing 16 bit coprocessor port
- Automatic AppleWorks expansion up to 3017K desktop
- Accelerates AppleWorks
- Built-in AppleWorks printer buffer
- 100% compatible with all standard IIe software
- RamDrive™ and ProDrive™ the ultimate emulation software included free
- Memory is easily partitioned allowing many programs in memory at once
- Compatible RGB option featuring ultra high resolution color graphics and multiple text colors with cables for both the new Apple and standard IBM type monitors
- Self diagnostics software included
- Lowest power consumption (U.S. Patent #4601018)
- Takes only one slot (auxiliary) even when fully expanded
- Socketed and user upgradeable
- Software indusry standard
- Advanced Computer Aided Design
- Used by Apple Computer, Steve Wozniak and virtually all software companies
- Displays date and time on the AppleWorks screen with any PRO-DOS compatible clock
- Much, much more!

RamWorks III with 64K	**$179**
RamWorks III with 256K	**$199**
RamWorks III with 512K	**$249**
RamWorks III with 1 MEG	**$329**
RamWorks III with 1.5 MEG	**$489**
RamWorks III with 3.0 MEG	**$1099**
Ram Expander+ 1 MEG	**$499**
Ram Expander+ 2 MEG	**$799**
65C816 16 Bit Card	**$159**
ColorLink RGB Option	**$129**
Optional Software:	
Pinpoint with RAM Enhancement Software	**$79**
VIP Professional	**$219**

RamWorks III. The industry standard for memory expansion of the Apple IIe. ORDER YOUR RamWorks III TODAY. See your dealer or call (214) 241-6060, 9 a.m. to 11 p.m., 7 days, or send check or money order to Applied Engineering.

MasterCard, Visa and C.O.D. welcome. Texas residents add 6¼% sales tax. Add $10.00 if outside U.S.A.

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APPLE CLINIC

by Paul Statt, Senior Editor

Apple Clinic is a forum for discussing Apple II hardware, software, and related subjects. If you have questions or answers, or want to make a statement, write to Apple Clinic, inCider, *Elm Street, Peterborough, NH 03458.*

Bulletin-Board Log-On

I'm a new subscriber to your magazine. I just purchased a modem and would like to log onto your BBS. I'm a beginner at this sort of thing and don't know what to expect.

Rodney Getting
Auburn, NE

One comforting thought about telecommunications is that we're all beginners.

Dial (603) 924-9801 with your modem; we like both 300 and 1200 baud, although some callers have complained that our BBS forces their modems down to 300 baud. Set your system to 8 data bits, 1 stop bit, and no parity. The first thing you'll see on the inCider *BBS is the following message:*

```
(*> Welcome to the inCider BBS <*)
User Number ('New' = New User)
-->_
```

Type NEW. Don't type the quotation marks. The next few items on screen are as follows:

```
First Name [No Aliases]
-->_
Last Name
-->_
Calling From
-->_
Phone number: XXX-XXX-XXXX
-->_
```

Fill in all these blanks—it's like applying for a credit card, only easier. A few tips: If the name of your town or state is longer than 15 characters, just abbreviate. If you're accustomed to writing phone numbers with the area codes in parentheses, be sure you use the other form here: 603-924-9801.

If you make a mistake, don't worry. You can make corrections after you see this screen:

```
You are:
Ben Alexander
Peterborough, NH
603-924-9801
Correct?
```

Type N if you need to make changes, Y if everything's okay. If you type N, you get to start all over. After you type Y you'll see this next:

```
Enter P for a password
or G for guest access
-->_
```

Chances are you want a password: The inCider *BBS is a message board, and you need a password to post bulletins and send or receive mail. You also need a password to download* inCider *programs that are on the board—also free.*

After typing P you'll see "Wait. . . . . ," followed by a growing string of periods. The periods should reassure you; they mean the computer is working.

A long message flashes on screen; the gist of it is "Tell us something about yourself, so we know what kinds of folks are using the board." We're especially interested in your full name, your age, the kind of computer you use, and perhaps the reasons you logged onto the board. Type a short introduction to yourself. When you're finished, type DONE on a separate line with no quotation marks.

You'll next see the prompt:

```
Editing (? = Help):
```

Type O for okay if your message is correct; if you've made a mistake, type a question mark to see how you can change it.

Now you're in. You'll see this note:

```
You will be user #555
Your password is: SENOB
Please write them down
Press <CR> to enter the inCider BBS_
```

Be sure to write your number and password down; you'll need them next time you log on. If you wait a day before you call again, I'll have validated your password and number, and you'll be a full-fledged member of the inCider *BBS. In December's column, I'll explain more about the things you can do on the board itself.*

IIc or Not IIc

I have an Apple IIc with the UniDisk 3.5 ROM. I can't boot the system from my external Apple 5.25 drive. I'd like to know that if my internal drive breaks down, I'll still be able to boot my computer. What are the differences, anyway, between the "standard" IIc and the UniDisk 3.5 IIc?

Henry Malmgren
Groves, TX

The internal drive on your IIc thinks it's slot 6, drive 1, the external drive is slot 6, drive 2. The original IIc, not upgraded, thought the external drive was in slot 7. You could boot from the external drive in the old IIc by typing PR#7 from BASIC. Now you'd have to rewrite the computer's read-only memory (ROM) to make the IIc boot from the external drive or the IIe from drive 2.

If your IIc has the UniDisk 3.5 ROM, but hasn't been modified to fit a memory-expansion card, try PR#5 from BASIC. According to an older IIc technical manual, that will boot the external drive; I haven't tried it because I can't find a IIc like that.

When the boot drive fails, though, you're better off with a IIc than a IIe. According to the Apple IIc Technical Reference Manual, *"If for any reason the Apple IIc is unable to boot from the internal drive, control is returned to the startup routine. The startup routine then attempts to boot the Apple IIc from the external UniDisk 3.5."*

You wouldn't be totally unable to boot if you had a 3½-inch drive. But I know of no way to make an Apple II boot from any drive other than the first drive in its slot. Not even SmartPort, the most advanced disk-control ROM the Apple IIGS uses, can do that.

The UniDisk 3.5 ROM in the Apple IIc supports SmartPort, by the way. It also doubles the amount of ROM the computer uses—from 16K to 32K—and adds a "mini-assembler," which makes it easier to write assembly-language programs; STEP and TRACE functions in the monitor, which help you debug assembly programs; an expanded self-test (Control-Solid apple-Reset); and better interrupt handling.

The improvement's mostly for assembly-language programmers. (An

Space Combat Simulation

DEEP★SPACE™

Operation Copernicus

Deep Space Comes Down To Earth

DATE: 3 JUNE 2123
FROM: COMMAND CENTER TERRA
TO: INTERCEPTOR COMMAND
CODE: EYES ONLY PRIORITY ONE

REPORTED HOSTILE ACTION AGAINST MANNED
INSTALLATIONS CONFIRMED STOP
ALL VESSELS PROCEED SOONEST INHABITED
SECTORS TROJAN GROUP STOP
EQUIP MAX WEAPONS LOAD STOP
SEEK AND DESTROY ALL UNIDENTIFIED
MILITARY CRAFT STOP

THIS IS NOT REPEAT NOT A DRILL STOP
OPERATION CODE STATUS IS RED STOP
BEST LUCK STOP

Acceleration presses you deep into your cushioned seat. The ship's hull resonates to the throb of your fusion engines, creating a deep rumble almost below the range of hearing. Speed climbs swiftly. The rocks of the Asteroid Belt hurtle past your viewports.

Your apprehension grows....

Until now, a scene like this could take place only in your imagination. If you wanted to picture what it would be like to fly — and fight — in deep space, you could only lean back, close your eyes, and dream.

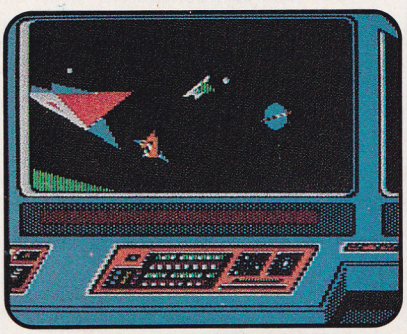
Until now.

Now there is *Deep Space*. The space-combat simulator that puts you in the pilot's seat with advanced 3D graphics and realistic spaceship behavior, cunningly contrived to work on your down-to-earth personal computer.

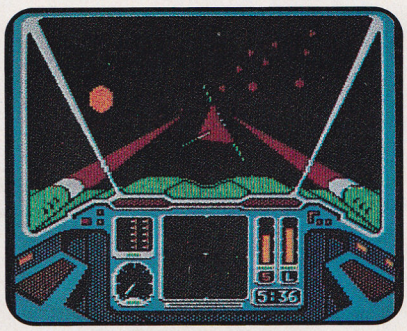
Choose from 3 levels of difficulty on each of 4 different missions, each in its own separately mapped sector of the Trojan asteroids. Will you be able to complete your mission and return to land safely on your base planetoid? There's only one way to find out.

Deep Space. It's from Sir-Tech, so you know it performs.

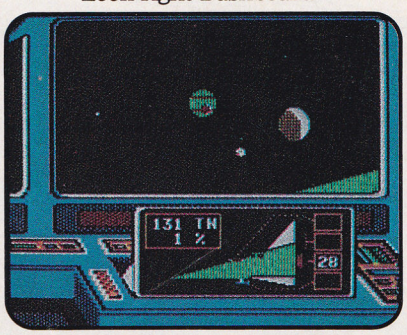
Look-left Dashboard

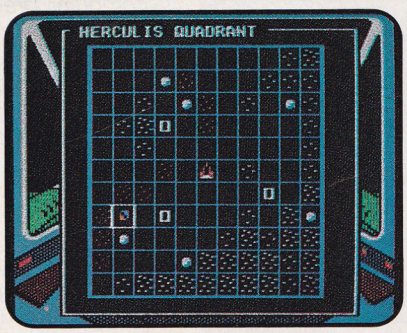


Forward Dashboard

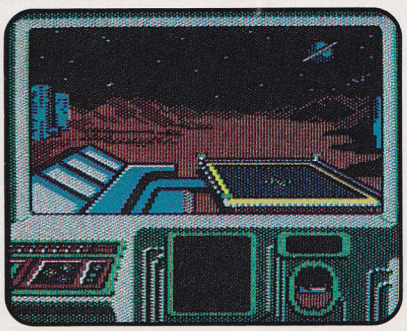


Look-right Dashboard





Quadrant Map Display



Control Tower View

Sample screens taken from the Apple II.

Available for:
Apple II Series
IBM PC & Compatibles
Commodore 64

SIR-TECH

Circle 221 on Reader Service Card.

Sir-Tech Software, Inc.
P.O. Box 245, Ogdensburg Charlestown Mall, Ogdensburg, NY 13669

Look for Deep Space at your favorite Sir-Tech dealer, of call us at (315) 393-6633.

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earlier IIc ROM update took care of certain timing problems that were wreaking havoc with modems—a real problem for real people—everyday Apple users, not just programmers.)

Look for an article on the "genealogy" of the IIc in an upcoming issue.

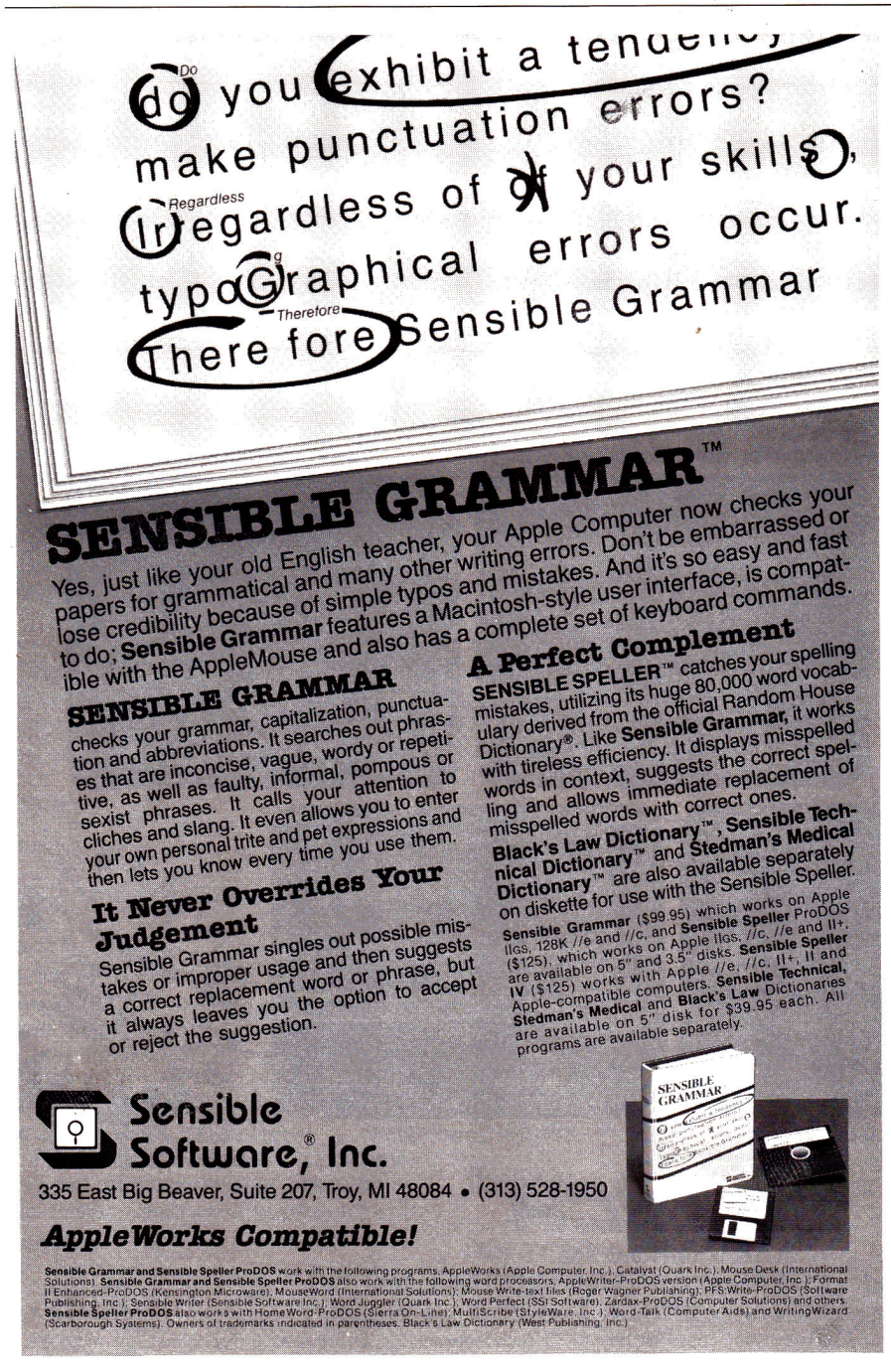
CP/M on the IIc

We're an Apple family: We own a IIe and a IIGS, to which I rarely have access. So I bought a IIc for myself.

Now I'm interested in upgrading it. Your September 1987 story, "Go Beyond the IIc's Limit," (p. 51) was very informative; I'm seriously considering buying Applied Engineering's Z-RAM Ultra 3.

But is there any way I could upgrade my IIc to take advantage of some of the GS' graphics abilities? And could you please tell me what a CP/M is?

Lee Zalben
Philadelphia, PA



The GS' spectacular graphics is a result of both improved hardware—an analog RGB monitor, bigger addressable memory, and a faster microprocessor—and improved software. I should say improved firmware*—the built-in routines the machine uses to create pictures.*

You can't add the improved firmware to your IIc. If you want better graphics with an 8-bit IIe or IIc, your best bet is to add an RGB video monitor. (See "IIe/IIc Graphics" and "The Cadillac of Monitors," October 1987, pp. 55 and 63, respectively, for more information.) Some memory-expansion cards for the IIe—Applied Engineering's, for instance (P.O. Box 798, Carrollton, TX 75006, 214-241-6060)—add a special RGB interface for the IIe that lets you plug in the better video monitor; Applied has told me informally that it would like to add an RGB option to the IIc somehow, but don't hold your breath.

You might find a Video-7 IIc RGB Interface at a yard sale or in a computer store with slow turnover. Video-7 has stopped making this interface, but it worked fine.

CP/M is a moribund operating system for microcomputers: The letters stand for Control Program/Microprocessor. In the late 1970s, CP/M was as cool as disco dancing—every microcomputer used CP/M. Some great early programs, like WordStar, the granddaddy of word processors, and dBase II, a powerful database manager, were written originally for CP/M.

In the late 1980s, CP/M is still as popular as disco—that is, not at all. WordStar and dBase are popular in MS-DOS (IBM) format, but no microcomputer brags about CP/M.

To add CP/M to the Apple II, you need a Z-80 coprocessor. Applied sells one as an option on its memory boards; IIe owners can also use a peripheral slot for a separate CP/M card.

There are only three reasons I can imagine for wanting CP/M on an Apple II: WordStar, dBase II, and Turbo Pascal, a powerful programming language from Borland International (4585 Scotts Valley Drive, Scotts Valley, CA 95066, 408-438-8400).

GS Crashes

My Apple IIGS has a 1-megabyte RAM card, an Apple 5¼-inch Disk II drive connected to an Apple control-

Æ Update . . .

PC Transporter meets fifth and final performance milestone. The manufacturing and engineering departments at Applied Engineering have accepted the fifth and final milestone from The Engineering Department for PC Transporter (formerly "Little Blue"). The final stage included a production release package containing the necessary information to manufacture the PC Transporter. Applied Engineering has begun manufacturing the PC Transporter card as well as the optional 5.25 inch 360K IBM-type disk drive. The necessary support software is still undergoing some final improvements and will continue to be refined until the product is ready for shipment. With the further changes in software, Applied Engineering hopes to get the IBM compatibility greater than the approximate 98% that it currently has. The PC Transporter can control both 5.25 inch and 3.5 inch disk drives. When using the Apple 3.5 Drive (not the UniDisk 3.5), PC Transporter can run either Apple or IBM formatted disks from the same drive. When using IBM 5.25 inch disks, an "IBM-format-only drive" is necessary and is sold as an option by Applied Engineering. Applied Engineering is taking orders for PC Transporter with delivery in November.

TransWarp has new low price. Effective October 1, Applied Engineering has lowered the price of its TransWarp accelerator from $279.00 to $219.00. TransWarp is the fastest accelerator card available, increasing the Apple II Plus or IIe processing speed up to 3 1/2 times. TransWarp continues to provide the same high performance at a new low price.

A RamFactor "piggyback" memory expansion card will soon be released by Applied Engineering. The new card is available with 1, 2, 3, and 4 megabytes and is user upgradeable in 1 megabyte increments. It attaches to the piggyback connector on RamFactor for a total of up to 5 megabytes. The RamFactor piggyback will include a new version of AppleWorks enhancement software. This software allows you to have up to 5 megabytes of AppleWorks desktop. You can also partition the total RamFactor memory for use as both a RAM disk and expanded AppleWorks desktop. Depending on your RamFactor revision level, you may need to get an enhancement chip set for your card from Applied Engineering. This chip set includes new firmware as well as a new memory controller chip for RamFactor that allows the memory expansion card to work more efficiently. The enhanced chip set costs $20. If you are using a RamCharger with your RamFactor, the memory on both the piggyback and the RamFactor will remain intact when your computer is turned off. The projected price for a 1 megabyte RamFactor expander card is $549. A firm price cannot be given at present because RAM chip prices are on the rise.

GS-RAM and GS-RAM Plus average 3-4 times faster than the nearest competitor. As reported in an earlier "AE Update", GS-RAM and GS-RAM Plus now include ultra-fast disk caching software that supports both ProDOS 8 and ProDOS 16 environments on the Apple 3.5 Drive. Anyone who purchased a GS-RAM or GS-RAM Plus before the caching software was developed can obtain an upgrade for $10.

Applied Engineering's video digitizer will allow an Apple II Plus, IIe or IIGS to capture a video image in a single frame thereby eliminating distortion. The image can come from a NTSC video camera, a VCR or a television monitor's video output. AE's digitizer has the potential for a number of useful applications. One being in the property surveillance industry. Because the video digitizer captures the image in a single frame, moving objects or still objects can be digitized and analyzed for breach of security. The new release date is scheduled for December.

Æ APPLIED ENGINEERING™

The Apple enhancement experts.

ler in slot 6, a Central Point Software 3½-inch drive connected to Central Point's Universal Disk Controller in slot 2, and an Epson EX-800 printer in the GS' serial slot 1.

Why does Paintworks Plus crash when I have the UDC and Central Point drive connected? And why won't the Epson EX-800 print super-hi-res pictures? All I get is a jumble of characters.

Dave Choate
Oakfield, NY

To put it simply, it's your Central Point 3½-inch drive. Mike Brown, of Central Point Software, tells me, "Our drive causes certain copy-protected IIGS software to crash. We no longer recommend our 3½-inch drive for the Apple IIGS."

That's that. I don't imagine that Central Point, or any enterprising reader, could write a routine that would make the drive work with copy-protected software without stepping on somebody else's copyright—Apple's, for instance.

You can return your 3½-inch drive to Central Point; call ahead for details (9700 S.W. Capitol Highway #100, Portland, OR 97219, 503-244-5782).

The trouble with your Epson printer is less clear. You should be able to print Apple super-hi-res pictures with any printer that produces standard Apple II graphics. Of course, the UDC problem might also affect printing in super-hi-res pictures.

AppleWorks 2.0 Bugs

Robert Allardyce ("Apple Writer to AppleWorks," September 1987, p. 22) may be experiencing the same bug in AppleWorks 2.0 that I've been living with on my IIGS.

When I convert a DOS 3.3 ScreenWriter text file to a ProDOS ASCII text file, then try to make a new word-processor file with AppleWorks 2.0, I always get the "can't locate that file" message, no matter how accurately I type the ProDOS pathname. I have to go to the Other Activities menu and "list all the files on the current disk drive" before I "make a new word-processor file from an ASCII text file." I wonder whether anyone has reported this bug to Apple.

Bunny Hoffenstein
Hershey, PA

Somebody just did. AppleWorks 2.0 is riddled with bugs—it seems there's a limit to the number of revisions you can make without overhauling a program completely.

My pet peeve is the way AppleWorks segments files when I use my GS, whether I want segmented files or not. One "feature" of AppleWorks 2.0 is that it can save a file to disk without going through the laborious process of writing the file to disk and only then deleting the original copy. (Old AppleWorks hands remember that you couldn't save a 75K file on a 143K disk if a copy of the file was already there.)

If it looks like there's going to be a problem, AppleWorks 2.0 asks, "Is it okay to delete the copy of this file on the disk?" If you answer yes, AppleWorks apparently saves the file.

But when you come in tomorrow morning and try to load that file, you'll discover it's "segmented." That means AppleWorks has split the file into two parts, and you have only one.

What I do is answer no, when AppleWorks asks whether it's okay to delete the file first, but then I go back to the Other Activities menu and delete it myself. This seems to work. I've been able to save "segmented" word-processor files by creating new files from ASCII text files and deleting the AppleWorks codes, but I've lost spreadsheet and database files completely.

I'm collecting AppleWorks 2.0 bugs—especially on the GS. Keep those cards and letters coming.

Computer Reincarnation

I read very little in *inCider* about my computer, the 64K Apple II Plus. It appears to have become extinct. I bought mine five years ago because it was "expandable." Perhaps you can help me expand the memory from 64K to 128K, 256K, or beyond; expand my software to include CP/M (all the new software seems to be CP/M); and expand my Epson MX-80FT to print graphics.

I'm fond of my computer and would appreciate any suggestions—short of "ditch it."

Frank Wetzel
Kendalia, TX

Applied Engineering is one company that has never given up on the old workhorse. RamFactor, a memory-expansion board, can beef up your II Plus to just about as much memory as you could possibly need. You can get 256K for $239. Applied is working on a 16-bit 65C816 microprocessor option for RamFactor that will let you write your 16-bit programs in assembly language. It might be more fun to buy a big RamFactor with a battery backup ($179 extra) and pretend you have a hard disk.

Another Applied product, Z-80 Plus ($149), brings the wacky world of CP/M to your II Plus, but if you think all the latest software is CP/M, you've uncovered a trove of antique computer magazines.

Viewmaster 80 ($149) is an 80-column card—if you don't have one you'll need one. Viewmaster not only gives you the wider screen that the latest software (ProDOS) uses, its software makes it possible to run AppleWorks on your II Plus. Do you already have a shift-key modification—that is, can you type lowercase letters? Viewmaster 80 lets you do that, too.

If you're genuinely attached to your II Plus, don't ditch it—just send your credit card to Applied Engineering (P.O. Box 798, Carrollton, TX 75006, 214-241-6060).

GS Tools: BASIC Is Back

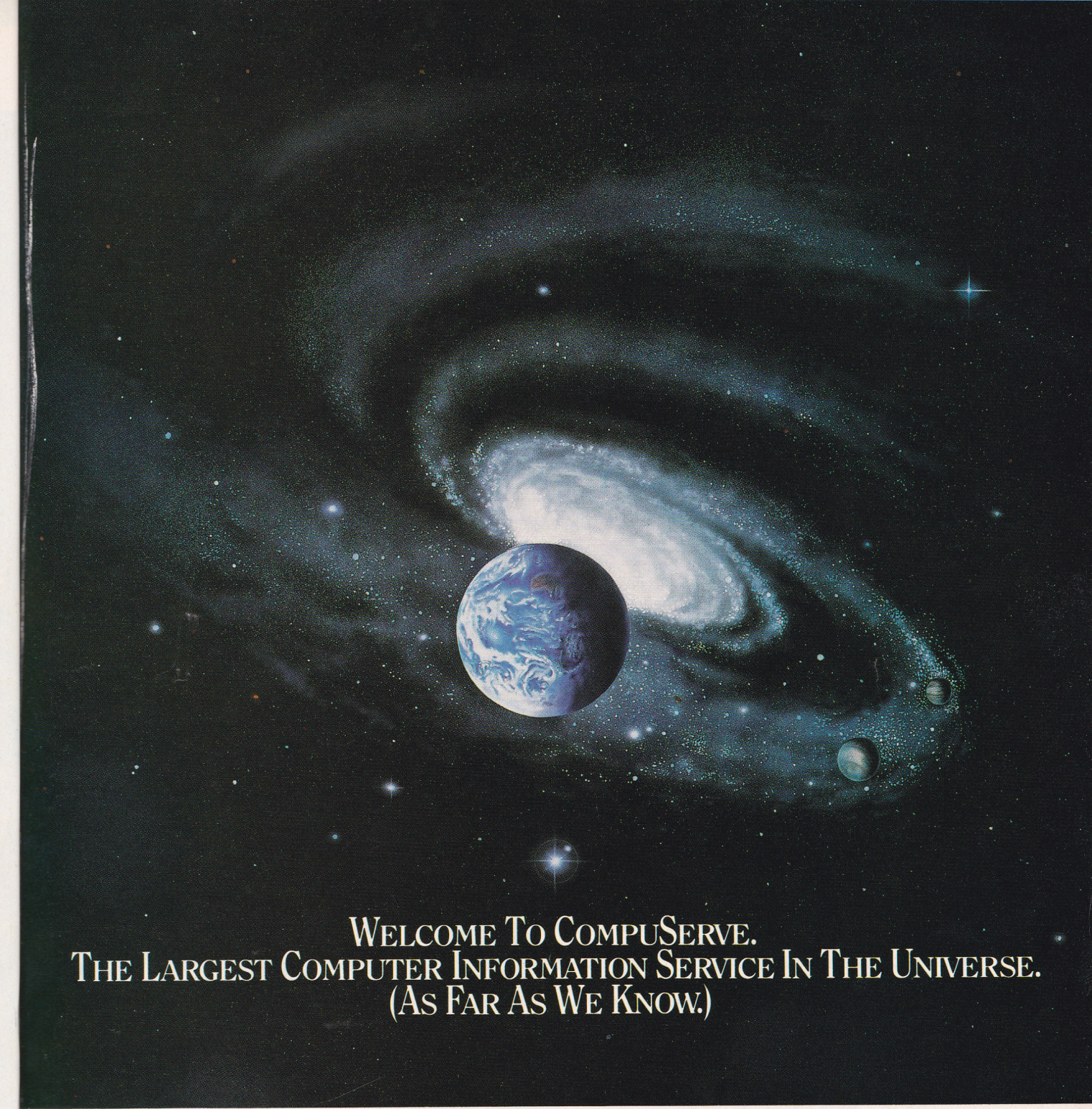
I know of software that can help BASIC programmers use some of the IIGS' tools.

Amperworks, by Morgan Davis (Living Legends Software, 1915 Froude Street, San Diego, CA 92107, 619-222-3722), has a slick, easy-to-use command that gets the date and time from ProDOS 8, which can access the IIGS clock.

Amperworks doesn't let Applesoft use the IIGS tools in ROM, but it does solve that particular clock problem. It's a great, well-documented program that adds many other useful commands to BASIC via the ampersand.

Mikael Behrens
Austin, TX

We hear new rumors of a "16-bit" BASIC all the time. Often they turn out to be just what you describe: ampersand "hooks" that grab some machine-language routine and pull it into BASIC. Ampersand routines always stike me as POKEs with pretensions, but there are programmers who love them. Thanks for the tip.



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Playmate of the Decade

by Eric Grevstad, Review Editor



"A lower price would let prospective buyers see the Apple II as owners do, on its own terms."

The Apple II's been on my mind this week. That's not unusual—I work for an Apple II magazine and the boss expects me to think about the computer from time to time—but the last few days (the first week in August) have put me into a reflective mood. It started when I helped edit a special issue of *inCider*, heard some news from Apple's rivals, and read the September *Playboy*.

The special issue is our rookie's guide to the Apple II world—*Begin Computing*, which should go on sale as you read this. I won't give you a sales pitch (to be honest, many *inCider* readers will find the issue's lessons elementary), but it's been a fun project. It's good to rediscover how unspoiled the novice user's world is, and how fortunate is the novice who chooses an Apple II.

You have to adjust your thinking for beginners, not to talk down to them but to avoid the buzzwords of the business. ("LifeGuard is a ProDOS program that. . . ." "What's ProDOS?" "The operating system that controls your applications." "What's an application?") When you approach things anew, you're not jaded.

I'm often jaded or cynical about products, since I see would-be best sellers meet oblivion every day, but *Begin Computing* reminded me that there are some neat things out there. Beginners are lucky in some ways. They don't bog down in details of ProDOS 8 versus ProDOS 1.1.1. They can see that AppleWorks is a wonderful program without griping about extra disk access or keystrokes, as I do when forced to leave my RAM card and macros for 128K and a plain copy.

Beginners can see that the Apple II is the decade's most versatile computer, but jaded viewers wonder whether Apple sees it as only an heirloom. Such doubts surfaced again this week when IBM and Tandy introduced new models, aiming big guns at Apple's traditional place in the educational market, while Apple's chief executive officer, John Sculley, gave a *Playboy* interview in which his mention of the Apple II was briefer than the centerfold's clothing.

The new MS-DOS contenders don't quite eliminate Apple's educational edge, but you have to admit the shells are whistling over the battlements. IBM's PS/2 Model 25 is no bargain (it costs almost as much as a IIGS), but seems to avoid the pitfalls of the PCjr. Tandy's 1000 HX has MS-DOS in ROM, capturing some of the boot-and-run convenience that's one of Apple's main attractions.

Meanwhile, Apple keeps its prices high and keeps saying, "Our customers will pay more for a quality system from a brand-name company." That line worked against the VIC-20, but it's less convincing against Big Blue and Radio Shack. A IIGS color system costs $2000; its discounted price for educators is around $1400. For $1400 list, with no discounts, you can buy an AT system from Tandy or two Korean-made PC clones (maybe skimping a bit on the monitors).

Sculley's *Playboy* interview skipped the price question; instead, there was a lot of talk about the feud with Steve Jobs and Apple's structure and team spirit as a "third-wave company." (Third Wave Technologies, the guys in Cleveland who make the utility disk Print-Quick, must be pleased.) The only mention of the II involved the dark days of 1984–85 when many team members quit the company. Sculley admitted that the neglect of Apple's best seller was "a terrible mistake," but "done unconsciously. . . really more [of an] oversight than anything else" as the firm nursed the baby Macintosh.

Sculley added, "We've since corrected all of that with our reorganization of the company," but I don't think the II is Apple's top priority. One of Apple's advertising people suggested we add Macintosh coverage to *Begin Computing* ("We do position the low-end Macs as home machines")—a public-relations person doing her job, just as we did ours by including the Laser and the Franklin as well as the IIc, IIe, and GS, but hardly an encouraging sign of readiness to promote the II.

Still, with my outlook refreshed by *Begin Computing*, I feel a price cut is the only thing standing between the Apple II and continued success confounding the MS-DOS onslaught. A lower price would let prospective buyers see the II as owners do, on its own terms, seeing how much fun it is without being distracted by rivals' savings. If Apple leveled the playing field, the II would hold people's attention. It stayed on my mind this week despite the copy of *Playboy* on my desk.

LASER 128EX

WHEN YOU FEEL THE NEED FOR SPEED



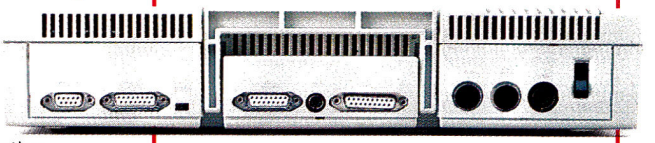
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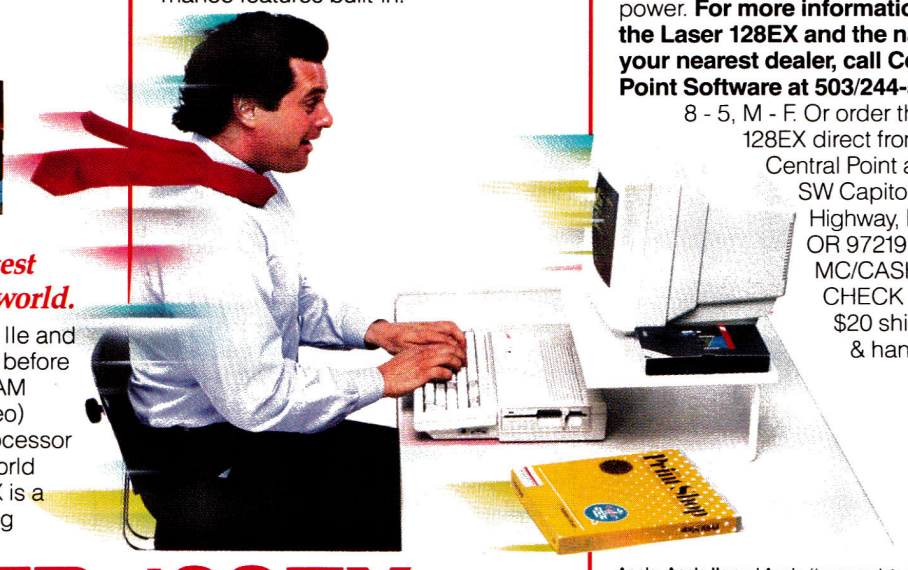
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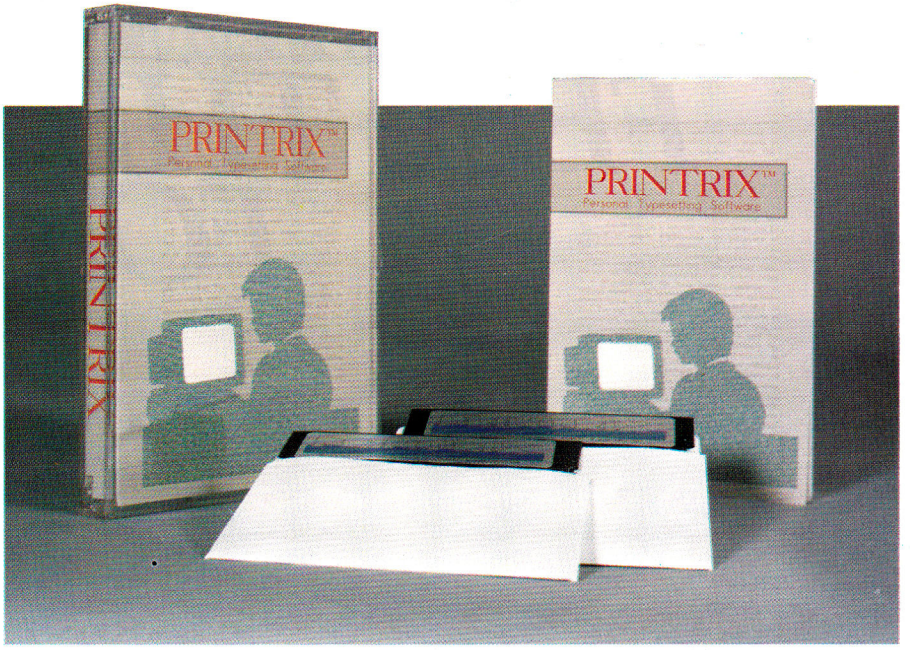
REVIEWS

Printrix; W.O.R.K at Home; FastPak Mail; Fischertechnik Robotic Kit, Robotic Workshop MB230, Valiant Turtle, WAO: Movit 2, Compurobot II; Archimedes Bookkeeper

Picture-Perfect Pages

PRINTRIX

Data Transforms, 616 Washington Street, Denver, CO 80203, (303) 832-1501
Desktop-publishing program; 128K Apple enhanced IIe, IIc, or IIGS
$65
Rating: ■■■



It's tempting sometimes to think about relegating your old Apple IIe to the game room and picking up a Mac or an AT compatible so that you can play with the newest programs. Then along comes a package like Printrix that breathes new life into a 5-year-old machine and gives word processing a whole new look.

Simply stated, Printrix is a page-layout utility—better known as a desktop-publishing program. It won't rival the capabilities and ease of use of Aldus Pagemaker on the Macintosh or Xerox Ventura Publisher on the IBM AT, but it does a good job at what it's intended to do for a lot less cash and with much less hardware.

Printrix lets you lay out a text file with multiple fonts and graphics while editing with your favorite Apple word processor. The program works with AppleWorks, Apple Writer II, Word Juggler, WordPerfect, and any other ProDOS word processor that can save files to disk in hard or soft ASCII format.

SETTING UP

Printrix supports 20 types of interface cards, as well as 26 brands of dot-matrix printers (black-and-white and color), including old standards such as Epson (nine different models), Apple ImageWriter, and Okidata, plus newer entries such as NEC and Toshiba. The software is also compatible with a variety of laser printers, such as Hewlett-Packard, Kyocera, and Laser Imagers, but not the Apple LaserWriter, Epson GC-3500, or Okidata laser model.

Printrix isn't copy-protected, so your installation procedure begins with making backup copies of the two double-sided program disks. You'll need four blank 5¼-inch disks to make a full set of backups, or one blank 3½-inch disk. The documentation includes directions for establishing all the necessary subdirectories.

The original Printrix disk contains the main program module, a configuration disk, and two disks of fonts. The first time you use the program, you'll boot up the system and enter "-configure"; a series of menus and prompts follows, asking which computer, word processor, printer, and interface card you're using, and the card's slot location. Printrix writes the corresponding drivers to its program disk. Complete installation requires about five minutes.

TIME TO PRINT

To set up a file for printing (including graphics that conform to single-hires standard, Broderbund Print Shop format, or Data Transforms' own Fontrix "graffile" format), you'll first go through your text file and embed any formatting codes for final page layout. Printrix recognizes some of the native formatting codes from the word processors it supports; preface any additional Printrix commands with a caret (^) before inserting them into your text file.

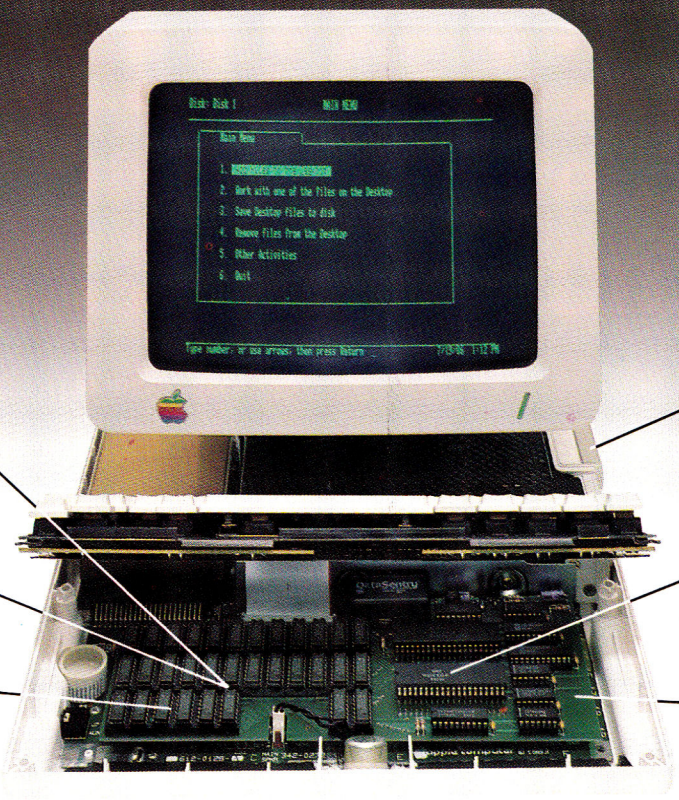
The Printrix manual devotes at least one page to each of the program's commands, and the package includes a command-summary card. You can control pagination, justification, graphics, columns, fonts, margins, tabs, and print quality within your text. The commands are easy to learn; they're mnemonic and follow a consistent format.

Commands you invoke with a numeric value can include absolute or relative position. To make a command relative, add a plus or a minus sign before the value to signify an offset from its current position. When fine-tuning a format, relative positioning allows for small, quick adjustments. For repetitive text files, such as business letters or labels, you can also use Printrix's menus to set up a working template or layout file and save it to disk for use with future documents.

Printrix includes 43 fonts, including standards such as Helvetica, Times, and Script, plus more esoteric designs, such as Shadow, Chrome, Calliope, and Illumini. Most come in several point sizes, but you can adjust any of them with various embedded font commands and customize them further with horizontal or vertical

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

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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)
265K — $329.00 512K — $379.00
1 MEG — $459.00

Z-RAM Ultra 2 (with memory and clock)
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Pinpoint with RAM enhancement software $79.00
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Z-80C Card to run CP/M software (no memory upgrade) $159.00

MasterCard, Visa and C.O.D. welcome. Texas residents add 6¼% sales tax. Add $10.00 outside U.S.A.

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Applied Engineering

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P.O. Box 798, Carrollton, TX 75006
(214) 241-6060.

enlarging, italics, varied width between characters and lines, or proportional spacing.

The program disk also contains 25 graphics files. You can further enhance your clip-art collection with single-hi-res screens, Fontrix "graffiles," or Print Shop graphics; just convert them to ProDOS format with the utility provided in the Printrix package.

You can magnify your text by a factor of one to 99, but as magnification increases, quality decreases. You can reverse text and background colors or switch black-and-white areas, like a photographic negative. You can wrap text around your images if they're flush right or left, end text above your picture and pick it up again below the image, or overlay text. Printrix supports columnar layout and can print multiple copies of a file—as many as 999.

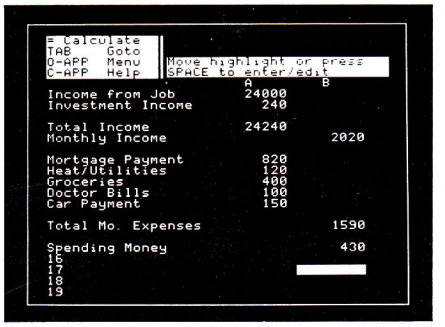
THE LAST PAGE

Printrix is easy to use and represents a breakthrough in page-layout software. It isn't flawless, however. The biggest problem is that Printrix includes no on-screen visualization. After even the smallest adjustment, you have to reprint your text to see it. Getting the best output is therefore quite time-consuming.

And, as with all graphics screen dumps, printing takes time. My 160-character-per-second Okidata in lowest-quality mode took almost four minutes per page. The same file in highest-quality mode took more than 20 minutes per page.

The manual is easy to read; it includes screen shots of all the menus, but no examples of completed page output. Illustrations of attractively laid-out text would go a long way toward helping you get the most from this versatile program. ■

Doug Young
Fresno, CA



Hardly Working

W.O.R.K. AT HOME

DesignWare Plus Division of Britannica Software, 185 Berry Street, San Francisco, CA 94107, (415) 546-1866, (800) 572-2272
Word-processor, spreadsheet, and database programs; 64K Apple IIe, IIc, IIgs
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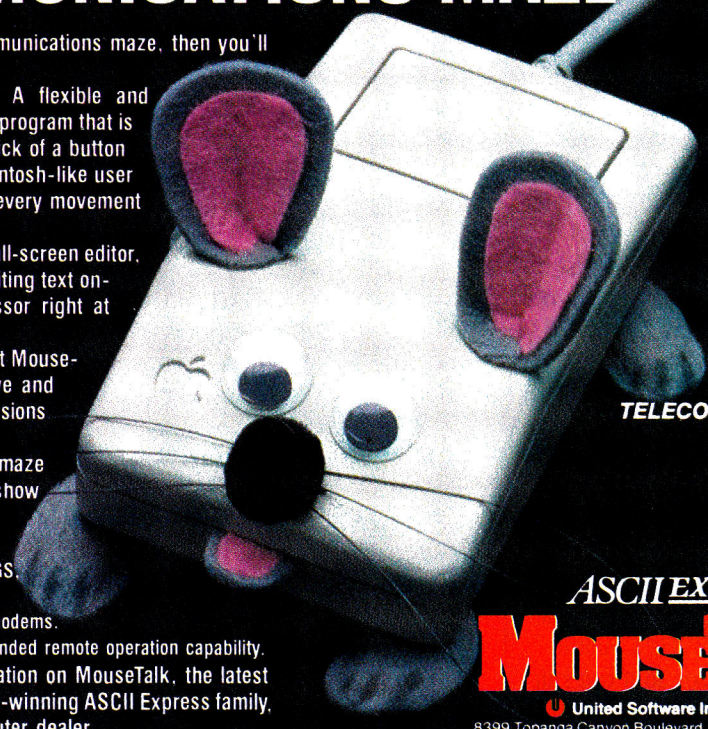
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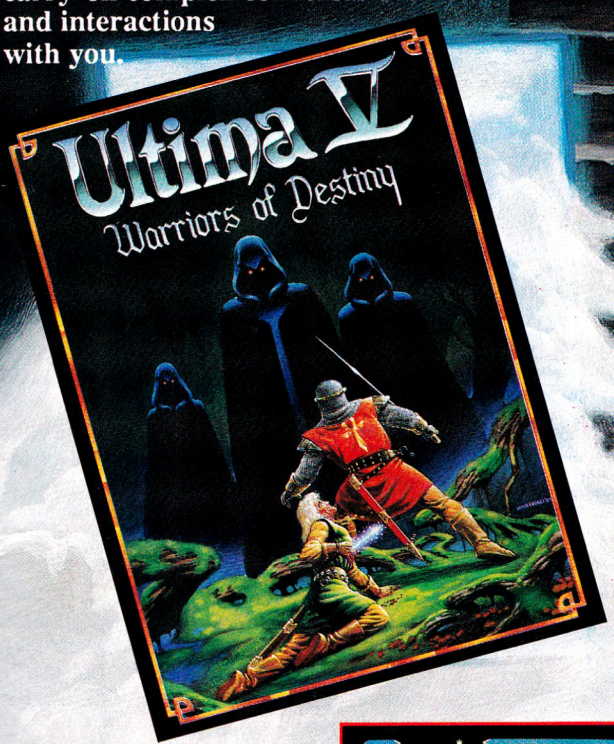
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but the excitement has just begun.

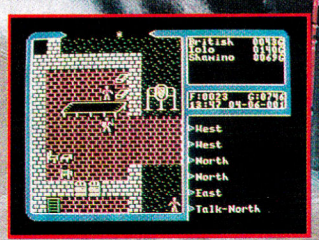
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Circle 42 on Reader Service card.

The idea of a low-priced integrated package suitable for families or beginners is a good one, but Britannica Software's W.O.R.K. at Home is too little and too late. Beaten to the punch by Spinnaker's Easy Working series and Multisoft's DoReMe (see Reviews, August and September 1987, pp. 26 and 30, respectively), W.O.R.K. at Home proves only that last can indeed be least.

The letters in W.O.R.K. at Home stand for "Write," "Organize," "Report," and "Kalculate" (*sic*), reflecting the functions of its word-processor, database, and spreadsheet modules. The package includes three double-sided floppy disks. One holds the two versions (64K and 128K) of the Writer program; a second contains the Filer and Spreadsheet. The third disk has an interactive tutorial.

The operating system appears to be a proprietary version of Apple's old DOS 3.3, which for now precludes the possibility of putting all three modules on a single 3½-inch disk. The programs are copy-protected, anyway.

Each module has serious, though not fatal, limitations. The 64K Writer lets you compose short documents (five pages); the 128K version allows 18 pages. The spreadsheet, while an adequate 26 columns by 99 rows in size, is all but bereft of built-in functions. Filer is among the most anemic of simple flat-file database programs.

SEPARATE BUT EQUAL

The three programs share a common screen layout: Status and menu areas appear across the top; the open-apple key summons sluggish pull-down menus along the left-hand margin, to show program options you select with single keystrokes. The program doesn't support the mouse. While the Spreadsheet uses an 80-column display (with optional 40-column mode), Writer and Filer are both 40-column programs. This isn't necessarily detrimental in the database, but it seems *déjà vu* in a word processor.

The package claims that the three W.O.R.K. applications are "fully integrated," but I think that's an exaggeration. Compared to AppleWorks, the *de facto* standard for integrated programs on the Apple II, W.O.R.K. lacks a clipboard or multipurpose desktop. Instead, you boot the Writer, Filer, or Spreadsheet program disk to work with one application at a time.

You can integrate Filer or Spreadsheet files, or other Writer documents, by saving them to disk, then inserting them into a Writer file where desired. This task isn't difficult, but it's mildly annoying, and it involves far too much disk swapping for my taste. To W.O.R.K. at Home, a "report" is simply one of these Writer documents souped up with database or spreadsheet information, not a report in the narrower AppleWorks sense of a sorted, selected, formatted database printout. W.O.R.K. Filer has no built-in mathematical functions and doesn't share data with W.O.R.K. Spreadsheet.

Among other noisome features is W.O.R.K. at Home's lack of a disk-formatting utility. The program's written tutorial says, "See your computer owner's guide for instructions in formatting a diskette," but makes no mention of what operating system to use. What's worse, as the manual warns, if you start work without a formatted disk (or with a nearly full one), you may lose at least part of a work session. Most modern programs anticipate such problems and let you format disks from within your application.

W.O.R.K. at Home supports the IIGS, but doesn't come close to availing itself of the latest Apple's improved graphics, speed, and memory, to say nothing of its 3½-inch disk drives. It's disconcerting to see the label "O-APP" on screen instead of the mousetext open-apple symbol; it's worse to see "C-APP," because the GS has an option key instead of a closed-apple. The manual tells you that turning on alternate-display mode from the GS' Control Panel lets you use Option in place of Open-apple to pull down W.O.R.K. menus, but still advises you to use Closed-apple as a help key.

LIMITED COMMANDS

While it borders on the ridiculous to use this II Plus-compatible program on a GS, I didn't much like W.O.R.K. at Home on my IIc, either. The package tries to be easy to learn by leaving out features.



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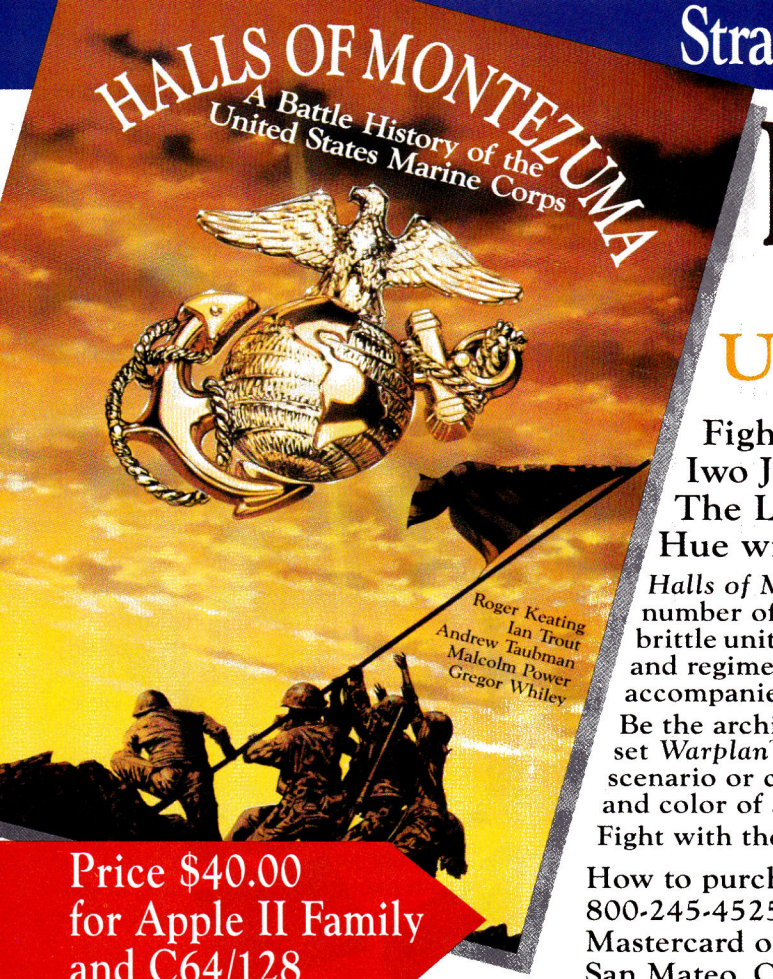
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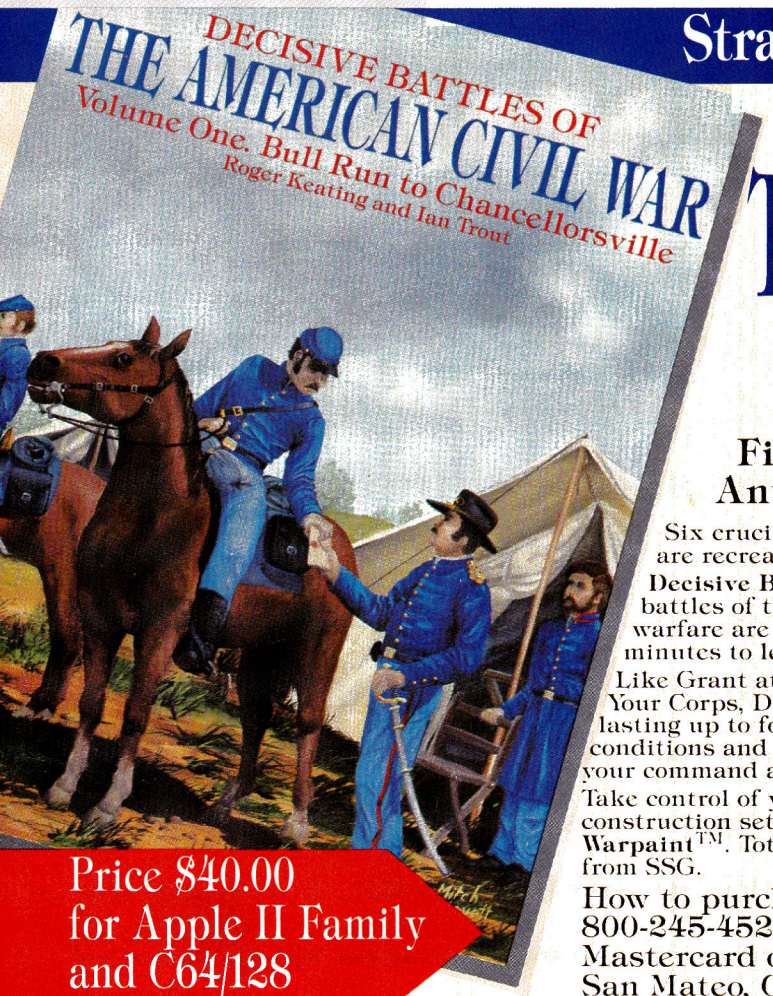
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Circle 182 on Reader Service Card.

Unfortunately, some of them are features I consider essential: a printer-selection or -configuration menu, a tab-setting option, mathematical functions other than AVE (average) and SUM in the spreadsheet, and complete sorting of large database files. Have you ever heard of a program that sorts only so far and then quits? While W.O.R.K. Filer allows up to 360 records per file, it can sort only the first 320.

W.O.R.K. at Home commands seem to result from a marriage of AppleWorks and the original Bank Street Writer (Broderbund). Some apple-key commands are like AppleWorks', while others (Control-C to center text and a transfer menu for file activities) bring back memories of Bank Street.

Most commands are mnemonic, such as Open apple-M to move blocks or Control-T (for "Text") to tell the spreadsheet you intend to type a label. Others seem inconsistent, though. The boldface toggle, for instance, which shows up as an inverse-video B on screen, is activated with Control-B, but the underline toggle, which appears as an inverse U, is Control-Y. Wouldn't it make more sense if the command were Control-U? That would necessitate changing the undo command from Control-U (to Control-X, maybe), but would still be a change for the better.

Since centering and line spacing don't appear on screen, W.O.R.K. at Home Writer has a View feature—a graphics representation of what your printed document will look like. You can imagine my surprise when a document that looked fine in View mode came out in condensed print on my ImageWriter II, even after beginning a new document to clear my computer's memory and turning the ImageWriter off and on again to clear the printer's memory.

NOT WORTH LEARNING

The W.O.R.K. at Home documentation leaves much to be desired. Instructions for the Apple, IBM, and Commodore program versions are integrated in the user guide and appear on side-by-side foldouts on the quick-reference card. Both the user guide and applications guide (a written tutorial with "projects you can tackle") are crowded with two columns of text per page. Neither offers an index. The user guide's glossary lists a paltry seven terms. On-line help consists of mere listings of W.O.R.K. commands.

The program's on-line tutorial includes applications like setting up a database of ten-speed bikes and a spreadsheet to budget your earnings from babysitting. These examples may appeal to adolescents, but not to adult novices for whom the program might otherwise be suitable.

While easy to learn, W.O.R.K. at Home is severely underpowered and not very well integrated. In addition, maintaining copy protection (backup copies cost $12) at a time when other publishers of productivity software have rejected the notion seems like swimming against the tide. Such a move may be enough to cause W.O.R.K. at Home, already burdened by a slew of inconveniences and inconsistencies, to sink to the bottom. ■

Cynthia E. Field
Wakefield, RI



Moving the Mail

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Rating: ■■■■

FastPak Mail is a snappy, inexpensive, impressive package designed for one purpose: managing your mailing lists. The program has been ported over from the IBM PC environment

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Circle 260 on Reader Service Card.

and has lost a few bells and whistles along the way, but it's still a powerful performer and an excellent value.

I usually don't care for converted programs or other IBM and Apple mixes—somehow we usually end up getting the short end of the stick, with IBM function-key instructions and hard-disk directories—but in this case little is lost. The program hardly suffers at all for the transfer. FastPak Mail comes on a single nonprotected disk and works on any 64K Apple II with an 80-column card. The indexed manual, which you'll be able to skim through if you don't want to read it thoroughly, is 48 pages long with a short addendum for Apple users.

MAKING YOUR LABELS

FastPak Mail comes with preset fields (first name, last name, address, and so on). Other than eliminating the Company Name field if you don't need it, you have no control over the field settings. At first this may seem restrictive, but it's really not. With most printers' setting of 10 characters per inch, a standard mailing label can only be 34 characters wide. That's the space the system allows for major entries like names and addresses, so there's no reason to juggle field length.

Data entry is very fast, although there's a bit of disk access when you save your entries. The program will capitalize all words automatically, which is precisely what you want it to do for a mailing list. A period, apostrophe, or quote mark tells FastPak to duplicate the corresponding field from the prior record. This is an especially helpful feature if you correspond with a lot of folks (such as customers) who live in the same city or have the same zip code.

You can sort or reorder a list four different ways—alphabetically by last name or by company name, by zip code, or by a user-defined code you enter with each name. You can combine files or choose specific entries (based on a range of letters, zip codes, record numbers, or user-defined reference codes) to create a new file with only those names.

Once your data are sorted alphabetically, FastPak Mail will go through them and print a list of potential duplicate names so that you can "clean" your lists to save mailing costs. If you want to search for and correct an entry, but don't know the exact name or record number, you can do an "include" search, finding entries such as King, Kingdom, and Working. There's a brief help screen that gives you a list of other available options, but you'll rarely need it.

You can also bring in data from many database programs, so if your information is already stored somewhere, chances are you'll be able to convert it to FastPak Mail without too much trouble. The program comes ready to print single or four-across labels, but it's easy to enter the instructions for printing two, three, or more across.

One of the little things that makes this package a good value is its ability to merge mailing-list names with letters created with a word processor. Any word-processing program that can create ASCII text files can automatically merge names into your letters, and the process is remarkably easy.



For instance, to write to each person in your mailing list, you simply start your letter with "Dear $FN $LN," codes standing for "first name" and "last name" respectively. Besides other codes such as $NU for phone number, the convenient $CL ("city line") enters the city, state, and zip code on the same line. The only weakness I could find in merge printing is that you have to insert blank lines at the end of your letter to get the paper to the beginning of the next page. FastPak won't do that for you.

SOME WEAKNESSES

As with all software, FastPak Mail isn't perfect, but many of its imperfections stem from its IBM origins and subsequent conversion to the Apple way of thinking. Each time you specify the file you'd like to use, you must also enter the number of the drive in which it's installed, typing NAMES,D2 every time you want to access, sort, or print information from a file called NAMES on a data disk in drive 2. This gets a little tiring when you need to do several things with the same list.

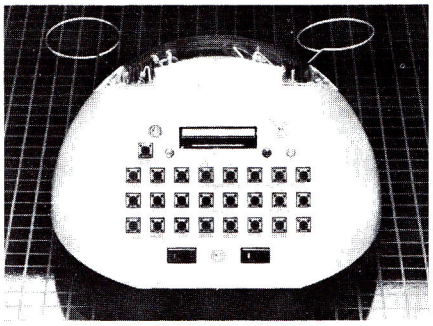
While the ability to merge names and addresses with letters from your word processor is a great feature, your screen double-displays the letters as they print. This doesn't hurt anything, but will make passers-by wonder what you're doing. Even when you're only printing labels, the names appear in inverse on your screen, and leave a moving trail showing city, state, and zip. This is something a few lines of program code could correct.

Editing an entry is a little troublesome, in that you must blank out trailing characters. For instance, if you change Harrison to Henry and don't type spaces over the end of the original entry, you'll be left with Henryson.

Since the manual is written for IBM PC users, not all the information applies to us. The letter-merge portion of IBM FastPak includes a salutation, but ours doesn't. They can sort up to 3000 names at a time; we poop out after 900.

Even so, if you use mailing labels in your business, or even if you're only thinking about it, you'll be more than pleased with FastPak Mail. If you need what a mailing-list package does—a quick and easy way to prepare labels for specific customers based on criteria you select—FastPak is just plain good. Sure, it has a few problems with what you see on screen during printing, and it would be nice for us Apple users to have a manual of our own, but don't ignore the program for that. If you don't believe me, try it anyway. FastPak Mail is one of the few pieces of software that comes with a money-back guarantee. ■

Gregory R. Glau
Prescott, AZ



Robots and Turtles

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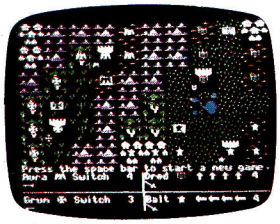
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Before you begin any of the projects, you'll need a wire stripper to prepare the 20-wire ribbon cable that connects your models to the interface. The directions tell you to shorten 17 of the wires, separate the majority of the strands, and strip the insulation from each wire end. The 20 strands inevitably become tangled up. If you're not using particular wires for a project, you must bend them out of the way, taking care to prevent the ends from touching and shorting out the Fishertechnik transformer and your Apple. If you master the cable connector, you're well on your way to completing the projects.

The manual offers a parts list, construction tips, instructions, and a picture of each completed robot. The resolution of the black-and-white pictures is poor; it's often difficult to see exactly how the pieces fit together. The finished products are worth the effort, though, and they perform their tasks smoothly. It was fascinating to instruct the "teachable robot" arm to carry a metal disk from one platform to another; the robot repeated the job as instructed until I gave the "stop" command. Real industrial robots often perform the same way.

If you're having trouble getting your robot to work, a diagnostic program helps identify the trouble spots. There are two common problems: You must insert the interface cable properly into the game port inside the computer, and you may have to reverse the positive and negative leads coming from the transformer because of improper labeling in the factory. I experienced both of these problems and corrected them.

Fischertechnik sells other mechanical and electronic parts for building more complex models. The *General Science Applications* text, a teacher's guide with student activities for each project, is a helpful complement to the computing kit. A free bimonthly newsletter has suggestions and program listings for more projects, along with technical advice.

ROBOTIC WORKSHOP

Multibotics' Robotic Workshop MB230 is an introduction to the science of robotics for children aged 10 and up. The package comes with a collection of Capsela parts—components encased in snap-together plastic pieces—including motors, wheels, tires, axle supports, couplers, speed reducers, and a propeller, along with a computer-interface unit and instruction manual. Put six AA

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1 Apple DMP/IMAGEWRITER/IMAGEWRITER II/SCRIBE, C. Itoh, Canon, Epson, NEC, Okidata/Okimate series, Panasonic, Radio Shack, Star Micronics, and many more.
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batteries in the interface, plug it into slot 3 of your computer, boot the modified BASIC software, and work your way sequentially through the 50 projects.

Using clearly labeled diagrams, the well-written manual explains all the projects in detail. You can learn about motor speed, direction, and efficiency; build a variable-speed fan, a crane, a gyroscope, a burglar alarm, a radar device, or a primitive plotter; experiment with torque, light, color, infrared sensors, and recorded speech; or construct your own models and modify the programs to suit your needs. Not every program focuses specifically on robotics, but all teach valuable principles you can incorporate into robotic movements and experiments.

Some of the more advanced projects require the purchase of inexpensive materials from your local electronics store; a Capsela parts list is included if you want to buy additional components and capsules. According to Multibotics, a school version including teacher/student manuals and a heavier-duty interface cable is in the works. Since the interface card is interrupt-driven, the kit will work with a IIgs in native mode (fast speed) without making the motors run faster or work harder. Considering the number of projects it offers for the price, this workshop is hard to beat.

VALIANT TURTLE

Valiant Turtle gives new meaning to the concept "turtle geometry." This robot, nicknamed Myrtle by her designers, resembles a turtle with a green see-through plastic shell, wheels underneath for movement, and photosensitive eyes that shine bright red when the turtle is in operation and flicker when Myrtle's battery charge is running low.

Persons interested in Valiant Turtle graphics should already be familiar with Logo, for Myrtle moves only by Logo commands. She comes with her own retractable marking pen so students can create Logo designs with the "pen up" and "pen down" procedures; she requires no assembly, is easy to operate, and extremely quiet to run.

The Valiant Turtle package includes an interface cable, software, rechargeable batteries, instruction manuals, and an infrared communicator that links the free-standing robot to your Apple. Before you buy, call Harvard Associates to discuss your computer and software configuration; you'll need an Apple Super Serial card (with the jumper block on its modem setting) or Orange Micro Grappler to make Myrtle work with ProDOS Apple Logo II. Apple Logo I will also work with Harvard's own serial card, but hangs up on a IIc or enhanced IIe.

Myrtle is expensive ($499.95), but can do more than simply teach elementary-school children the basics of programming with Logo. Students also can use her to experiment with mathematical principles and geometric figures. Since she gives immediate feedback and reinforcement, students should grasp lesson concepts far more readily than if they simply used a blackboard or two-dimensional computer screen.

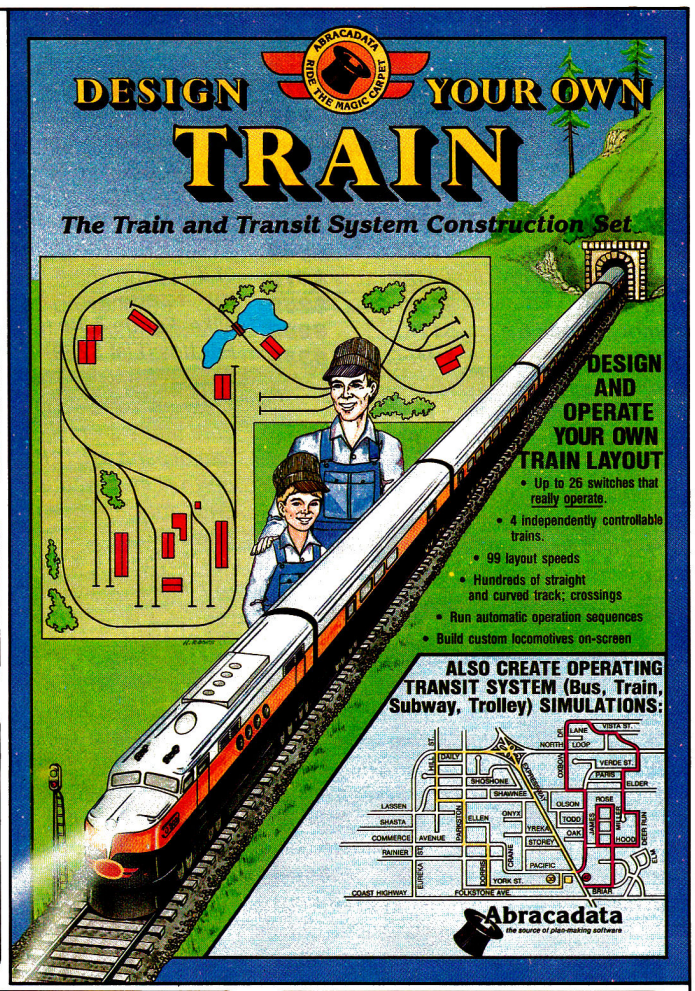
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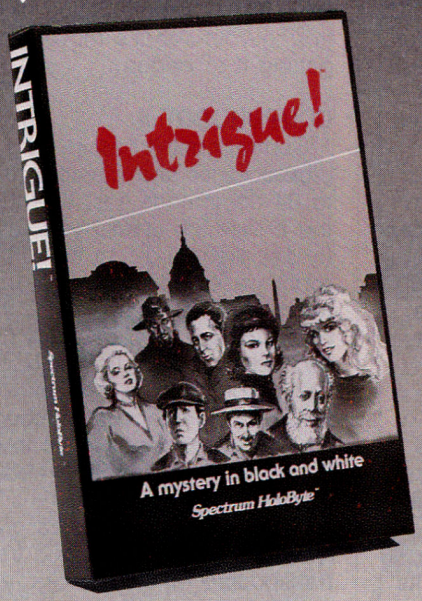
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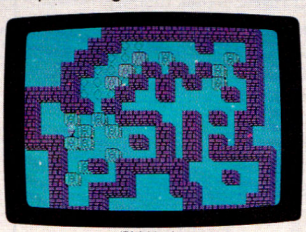
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WAO: MOVIT 2

The WAO (Wise Argent Orb) is a programmable electronic robot kit that comes with WAO-BASIC software, a cable for hookup to your Apple, and an optional interface card. Once assembled, the little robot can move forward or backward, turn left or right, circle, beep, buzz, and light up. With a little pen (included in the package) placed in its special holder, WAO can be programmed to make designs or write letters. Two probes extend from its head to act as sensors; you can also use them to transport lightweight objects.

It took me four hours to assemble Orb. (Less timid hobbyists might manage it in two or three hours.) The package includes several numbered plastic bags containing many tiny parts. The instruction book takes you through the 15-step assembly process with detailed, clearly labeled diagrams. You'll need a hammer, Phillips screwdriver, needle-nosed pliers, and one 9-volt and three penlight batteries.

Setting the terminal distance for the 9-volt-battery hookup is very frustrating; mine never quite fit properly and required technical assistance from the company to stay in. The manufacturer would do well to preset the distances for ease of installation.

You can program WAO directly from its own 25-button keyboard. Apple owners, however, can load the accompanying software, run a program (with a maximum of 27 steps), attach the interface cable to its 12-prong terminal, send the program to the robot, disconnect the cable, shift the mode switch to "run," and press the reset button; WAO will move as programmed. The software comes with three sample programs; the manual has lots of ideas for more.

Disconnecting the cable before executing a program is a good design feature, making the robot free-standing and independent. But the cable interface wasn't designed with kids in mind: Its prongs bend easily; take extreme care to avoid bending them out of shape. Overcome the cable and battery problems, however, and you should have plenty of fun polishing your BASIC programming skills, controlling your robot's movements, and getting it to perform.

COMPUROBOT II

Compurobot II has its own 4-bit microprocessor and memory to store up to 64 commands (lost when you turn the power off, unless you save them to disk first). You can command the robot via its remote-control unit to move forward or backward, turn or curve left or right, pause a number of seconds, move in low or high gear, dance, play music, and execute the previous command a number of times. The controller uses four penlight batteries, while the robot uses four C cells.

The package includes a crayon with holder, a clear plastic tray for transporting drinks, snacks, and other lightweight items, two instruction manuals, and a program-editor disk. Available options include a bumper sensor to make the robot back up and turn around after a collision and a digital clock for timekeeping and morning wake-up.

Such options make the Compurobot II somewhat more like a toy than the other educational robots, but the unit can accept commands from an Apple with a Super Serial Card (jumpered for terminal, not modem, use) in slot 2. After typing commands from the keyboard (no programs are supplied on disk, but the manual explains the commands in detail and includes a sample program), press T for transmission, and connect the computer and robot with an RS-232C cable.

Next, press the "receive" key on the remote controller, any key on your Apple keyboard to start transmission, and A to save the program to disk; disconnect the cable, press a key on the remote controller, and the Compurobot will move as programmed. Children aged 10 and up will find the robot easy to control, but it requires practice and patience to get it to stay on a piece of paper instead of drawing crayon lines on your floor. ■

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Product Information

Compurobot II
Maxtron
1825A Durfee Avenue South
El Monte, CA 91733
(818) 350-5707
Turtle-like floor robot; 48K Apple II or later, Super Serial Card in slot 2, male RS-232 cable
$80 (not including serial card or cable)
Rating: ■■■■

Fischertechnik Computing Kit
Fischer America
175 Route 46 West
Fairfield, NJ 07006
(201) 227-9283
Instructions for building ten robotics models; 48K Apple II, II Plus, IIe, IIGS
$224 (computing kit only); $116 (Apple interface only); $310 (kit with interface); $24 (power supply); $19.95 (science-applications manual)
Rating: ■■■

Robotic Workshop MB230
Multibotics Inc.
2561 South 1560 West
Woods Cross, UT 84087
(800) 824-2549
(801) 298-9077
50 projects and experiments in robotics, engineering, and science; 48K Apple II Plus, IIe, IIGS
$169.95
Rating: ■■■■

Valiant Turtle
Harvard Associates Inc.
260 Beacon Street
Somerville, MA 02143
(617) 492-0660
Turtle-like floor robot that executes Logo commands; 128K Apple II Plus, IIe, IIc with Apple, Krell, or Terrapin Logo software, Apple Super Serial, Orange Micro, or Harvard Apple serial interface
$499.95
Rating: ■■■■

WAO: Movit 2 (9511)
OWI
1160 Mahalo Place
Compton, CA 90220
(213) 638-4732
Kit for assembling turtle-like floor robot; 48K Apple II, II Plus, IIe
$59.95 (WAO); $24.95 (interface)
Rating: ■■■

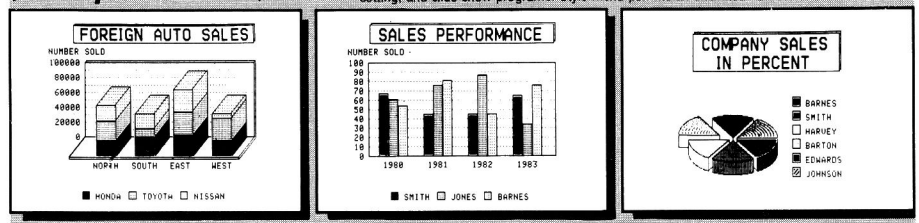
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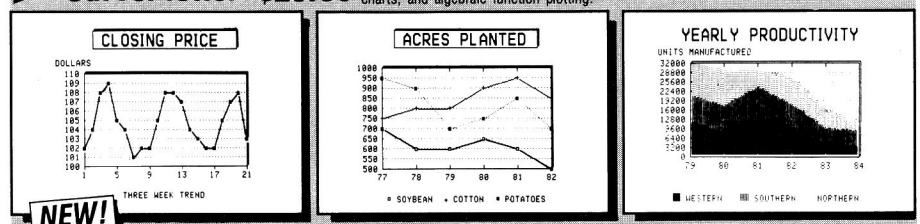
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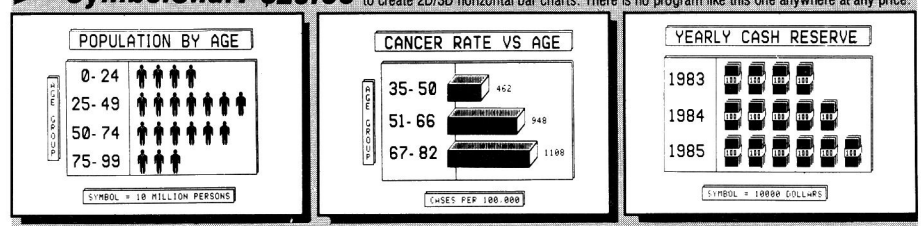
This progam creates standard, connect-the-points, charts, with up to three curves per chart. Also included are area charts (stacked curves with shaded areas), best-fit straight line trend charts, and algebraic function plotting.



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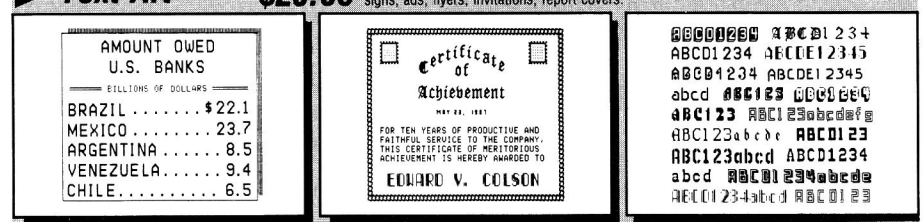
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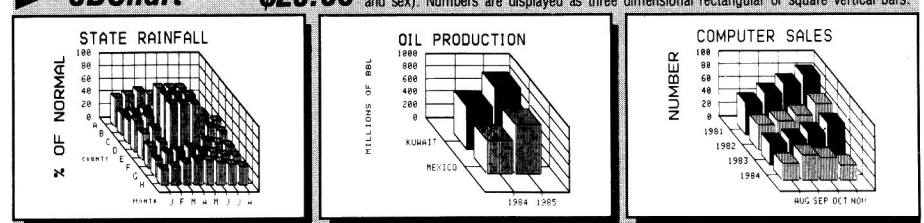
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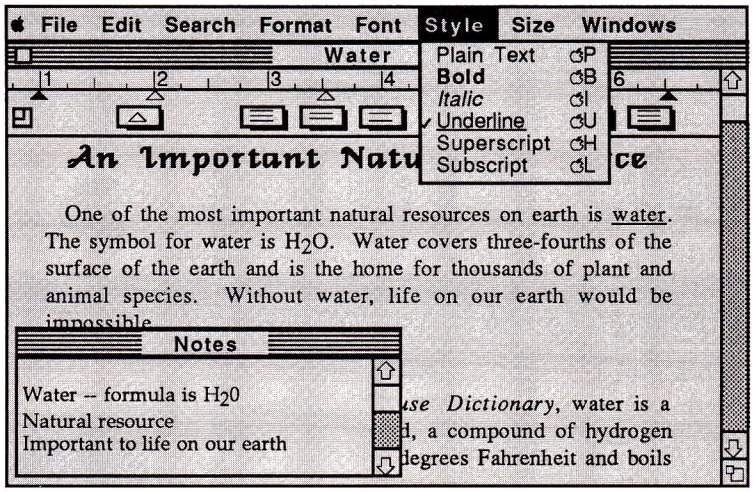
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System Requirements:
// Write runs on the Apple IIe/c (128K) and Apple IIGS. Requires only one disk drive. All functions can be used with the keyboard or with a mouse.

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$199.50 (complete); $49.50 (home level only)
Rating: ■■■

Are you searching for something that will help you with your home or business finances? Do you get the shakes when trying to balance your checkbook or payroll system? If so, Archimedes Bookkeeper may be worth a try. This bookkeeping system won't solve all your problems—in fact, the software is sometimes cantankerous, and the manual occasionally cryptic. But it's an inexpensive solution that can take you from simple household money management to advanced business functions.

The Archimedes system was designed with virtually every user, and every Apple II, in mind. Instead of one program, the package contains three—a home level and two business levels, in both DOS 3.3 and ProDOS formats for 48K, 64K, and 128K Apples. The least complex, the home level, balances your checkbook and prints your checks. It can also keep track of individual assets and liabilities while providing you with printed reports in general-ledger and monthly-journal formats.

Business-level one gives you more versatility in customizing account entries and report formats. Business-level two adds detailed ledgers for accounts payable and receivable, a payroll function, an invoicing function, and a shipping journal. These two levels are more than adequate to handle the needs of small- to medium-sized companies, and would be excellent for most day-to-day operations.

We tested the system on a 128K Apple IIe and also got it running on our IIGS using standard clock speed, though we couldn't run it at the GS' fast speed. Many of the program's features impressed us, but certain programming and documentation oversights also surprised us.

AWKWARD AREAS

For example, the documentation is divided into three sections for the three program levels. The printed manual in the box contains the full

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text for running the home level, but doesn't mention business-levels one and two. Their manuals are supplied on disk, not as text files you can read on screen, but as files you must print—a tedious process. We had to boot ProDOS, specify the documentation disk's prefix, then run the START-UP program for each business level's documentation.

We don't recommend Archimedes Bookkeeper for the faint-hearted or novice computer user. The program assumes you have a good understanding of office bookkeeping, and slings around all sorts of both accounting and technical jargon in the manual.

For example, even the instructions for printing the documentation were unclear: The manual said to insert "the ProDOS disk," without specifying that it wanted the ProDOS User's Disk. The manual has no step-by-step tutorial information, and covers some important topics quickly and skimpily. The manual also lacks an index and a glossary of bookkeeping terms. Beginning bookkeepers or computer users will have a tough time getting started.

We also encountered some program bugs, mainly failed attempts at error trapping, such as "Path Not Found" or "Break in 1000" messages. At various times throughout the testing, we were thrown out of the program entirely. We got back to the main menu by simply typing RUN and a carriage return, but the process was disconcerting nonetheless.

We were dismayed to find that Archimedes' home level won't work unless your printer is on and on line. That fact isn't clearly stated until midway through the manual in the discussion of some other, more advanced features. Also, though the manual doesn't mention it, the program supports a printer connected only to slot 1; we first tried our printer in slot 2 and crashed the program.

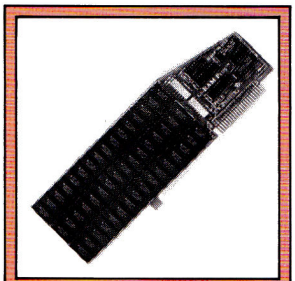
On the positive side, the developers told us that a later version of the system has addressed the bug problem. We feel that Archimedes Systems is interested in developing its software further and is eager to receive information about potential bugs from users. And, once we got the system running, it certainly lived up to the company's promises. The program accomplished everything from writing

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REVIEWS

checks and justifying our accounts to tracking our expenditures and printing reports.

HOME AND LEARNING

The home level is also intended to function as an introduction to Archimedes Bookkeeper if you intend to go on to either of the business levels. This level's main menu gives you three options—a current menu for daily activity, a monthly menu for journal upkeep and account maintenance, and an "occasional menu" for customizing the program—identifying your printer and printing your name or company name on every page. Business-levels one and two add more customizing functions, such as defining another printer.

At the home level, the "Chart of Posting Accounts" is your guide. It's a printable list of all accounts available for data entry and processing. It acts as a guide to your entries, referred to as assets, liabilities, expenditures, and income. The program assigns your accounts three-digit numbers for identification purposes. Assets, for example, are in the 100–199 range (101 for your checking account, 104 for your savings account, 150 for automobiles, and so on).

The current menu gives you the choice of check writing, transaction entry, checking the current status of accounts, or copying a disk. One drawback here is that you can't simply go in and look around; some of these functions have no way of letting you back out to the menu. But if you're entering real figures, the program does everything promised.

For instance, it lets you enter your paycheck into the transactional record; specify which parts go to checking, savings, taxes, medical expenses, and so forth; put all of these expenditures into proper categories; and justify the amounts against the total. You can print the contents of a single account or the entire ledger at any time.

GETTING DOWN TO BUSINESS

The first business level is essentially the same as the home level, but adds some bells and whistles. A business-options menu gives you more choices for customization, such as defining a new chart of accounts or changing general-ledger definitions, increasing or decreasing the three-digit number ranges, or adding five-digit labels for departments or categories from which to print specialized reports.

Other additional features include text formatting, which lets you break from the preset pattern found at the home level, and, not least, the ability to function without the printer on line.

While the first business level isn't much more powerful than the home level, it's more versatile (though still a bit short on error trapping, especially when we tried to do something out of the ordinary). Business-level two, however, is where full-fledged accounting comes into play. Besides the assets, expenditures, income, and liability functions of the home level and the printing flexibility of the intermediate program, this version adds payroll development, accounts payable and receivable, invoice printing, and detailed ledger features.

The payroll option lets you print one paycheck or an entire payroll and updates your checking account as it prints your checks. When managing accounts payable and receivable, you can request monthly, quarterly, or yearly reports of each account; all balances are justified throughout the program against your income, expenditure, and invoice accounts.

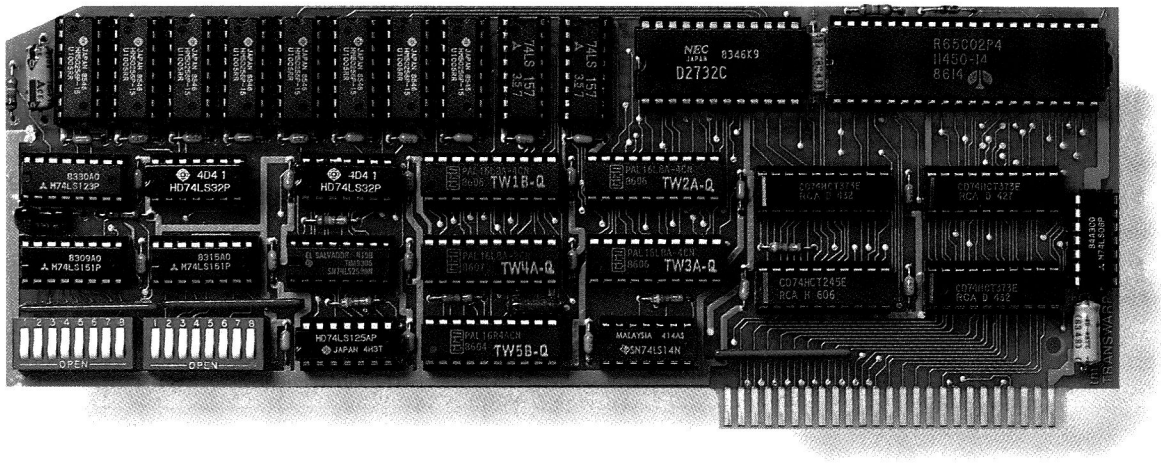
The invoice feature not only prints an invoice with seven separate accounts, but also lets you include a detailed description of each item and posts invoice amounts to the appropriate journals. Printing detailed ledgers of receivables, departmental accounts, or payroll summaries saves you from sifting information from a general ledger.

All in all, Archimedes Bookkeeper performed fairly well after we sorted out some initial problems. For anyone with a good basic knowledge of accounting, or anyone willing to spend the time to work through each level before advancing to the next, it's a highly useful software package.

Beginners may be thrown by some of the terms the program uses, but the Archimedes staff impressed us as being interested in fixing bugs and eager to help users get up to speed. The program seems to be a labor of love from a small company, and we're sure it will evolve with time. It already delivers on its promise of being a complete home or small-business accounting package for almost any Apple II.■

Joseph J. Lazzaro
Cynthia E. Tumilty
Watertown, MA

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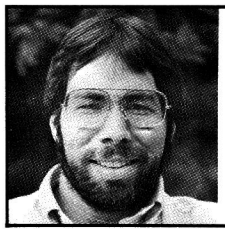


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TELECOMMU

by Cynthia E. Field

There's no secret to telecommunicating; you've been doing it for years. When you want to chat with a friend or confer with a business associate, you give him or her a call. When a relative is feeling under the weather, you dial your florist, order a bouquet, and pay for it with your credit card. When you plan a business trip or vacation, you telephone the airline or your travel agent to make reservations.

With a modem—a hardware device that lets your Apple send and receive information over ordinary telephone lines by converting your computer's digital signals to analog—you can perform all these tasks, and many more, without uttering a single word.

Once you've cut through the technical jargon and stripped away the telecommunications mystique, selecting a modem, communications software, and an on-line information service isn't as difficult as you might have imagined.

INFORMATION AT YOUR FINGERTIPS

Like Mohammed, you don't have to go to the mountain; telecommunications brings the mountain—or at least mountains of information—to you. When you own a modem and a communications program, you and your family can increase your knowledge of computers, math, history, investments, aviation—even pets. All you have to do is *log onto* (call up) a *BBS* (electronic bulletin-board system) and meet others who share your interests. Such on-line computer clubs are often called *SIG*s (special-interest groups).

According to Hakeem Ajijola, the *system operator* (sysop) for the National Geographic Society's BBS, callers give and receive information and advice on topics ranging



There's a wealth of information just a phone call away. How can you access it? Get a modem, boot up your Apple II telecommunications software, and log on, with inCider *as your guide.*

UNICATIONS

from geography to chemistry to Doberman pinschers. (See the accompanying sidebar for a description of another telecommunications project—the Kids' Network—sponsored by the National Geographic Society.)

Like thousands of other BBSs throughout the United States and the world (see the accompanying sidebar, "Running Your Own BBS"), the Society's is organized into various departments. There's a "bulletins" section, where you can find out about the newest exhibits in the Society's museum, Explorers' Hall in Washington, D.C. You can also learn about the Society's Geography Alliances, clubs for elementary and high-school teachers.

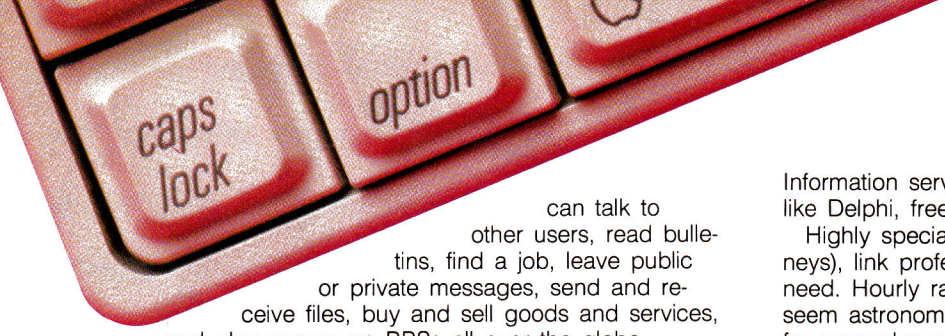
In addition, the BBS' *electronic-mail* system (E-mail) lets you send messages to other BBS users' "mailboxes"—areas of memory reserved for them on the BBS.

A WORLD OF POSSIBILITIES

Many BBSs, including the National Geographic Society's, offer games you can play on line. Even better, if you see a game you like, you can *download* it. That is, the Society's computer will send the game file to your Apple over telephone lines; you can then save it to disk.

All the Society's downloadable software is from the public domain: It's free for the asking. (See "Public Domain's Greatest Hits," September 1985, p. 22, and "Striking Gold in Public-Domain Software," February 1987, p. 40, for more information.) One of Ajijola's responsibilities is to ensure that no pirated commercial software ever makes its way onto the Society's BBS.

Giving your Apple the ability to communicate with remote computers benefits both children and adults. You



can talk to other users, read bulletins, find a job, leave public or private messages, send and receive files, buy and sell goods and services, and play games on BBSs all over the globe.

Some BBSs are dedicated to disseminating information about specialized subjects, such as religion, French language and culture, or the concerns of the physically disabled. A number of computer-products companies, such as Beagle Bros and L&L Productions, offer on-line ordering 24 hours a day.

GO LOBSTA

While most BBSs are run by individuals and are free of charge, some are commercial ventures. More sophisticated than home-grown BBSs, these *information services* not only offer the basics described above, but also provide access to large databases of specialized or proprietary information.

Boston CitiNet, for example, is an on-line *videotex* service offering sections on the arts, entertainment, news, and education. You can even have lobsters shipped anywhere in the United States or write to your government officials through an interactive political section—all during a single phone call. (This latter service is similar to the legislative-policy forum available to California residents through the Capitol Connection, a BBS set up by that state's Utilities and Commerce committee in Sacramento.)

CitiNet is supported by its advertisers. The service is free to those who log on to find out about jobs in the Boston area or real estate for sale or rent (through RealNet, a subsection of Boston CitiNet). Not unlike other information utilities, CitiNet imposes a surcharge for special services. For instance, for $50 a year you can rent an electronic mailbox.

Other general-interest information services, such as CompuServe, The Source, GEnie, and others listed in the accompanying Product Information box, are user supported, so you can expect to pay a one-time registration fee, usually less than $50. Some services, such as NewsNet, charge annually for subscription rights.

In addition to your registration fee, you pay for the time you're on the system. Generally speaking, hourly rates are lower (as low as $5) during nonprime time: 6 p.m.—8 a.m. Information services routinely offer trial subscriptions or, like Delphi, free on-line demonstrations.

Highly specialized databases, such as Lexis (for attorneys), link professionals with the research information they need. Hourly rates for these technical-database utilites may seem astronomical ($100 and more), compared to those for general-purpose services such as CompuServe. (For details on these and other commercial databases, see "On-Line Services," p. 58 in this issue; "What's On Line?" May 1986, p. 44; and "*inCider*'s On-Line Sampler," June 1985, p. 15.)

IN COLLEGE AND ON THE JOB

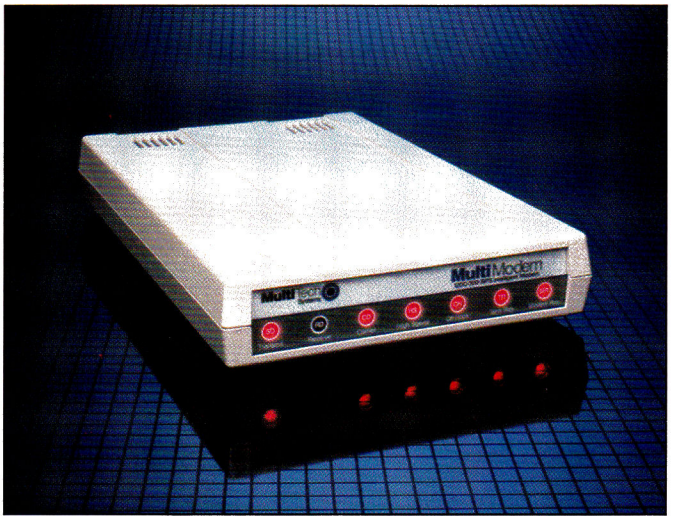
The BBSs and information utilities mentioned so far help you advance your education in an informal way. The Electronic University Network (see "Earn Credits On Line," October 1987, p. 87), fosters formal education—but in a nontraditional way. Through this network, you can take courses for college credit, even complete undergraduate and graduate degrees, from fully accredited institutions—without leaving your desk. In a nutshell, the Electronic University Network provides a grand E-mail link between you and your professors.

Not only can you use the power of telecommunications to get your MBA, you can use it in your business. Sales representatives on the road use modems to enter and transmit customers' orders. Journalists use personal computers equipped with modems to send articles to their editors.

Telecommunications via modem isn't just for salespeople and writers, however. Don Warren, president of Medical Monitoring Systems, Inc., in Madison, Wisconsin, designs keyboard emulators so that people paralyzed from the neck down can support themselves in a work-at-home environment.

Warren's system consists of a special interface card with *firmware* (software built into ROM); a pneumatic, pressure-sensitive switch; and a hose that the disabled individual keeps in his or her mouth. Using macros consisting of "puff" and "sip" commands, the employee can perform virtually any computer trick that those who operate "hands on" can do—whether it's developing new software applications or analyzing spreadsheets.

At the beginning of each workday, the user downloads assignments from his or her employer's central computer. At the end of the day, he uploads the finished product to the employer. A hard disk, in lieu of several floppies, eliminates the hassle of shuffling media.



MultiModem, from Multi-Tech Systems.



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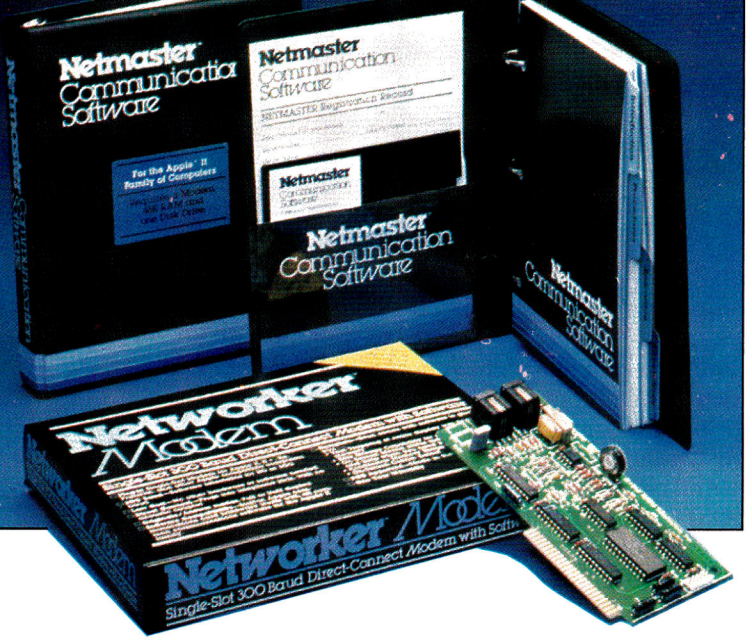
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Networker modem, from Zoom Telephonics.

OK, I'M CONVINCED—WHAT NEXT?

Once you're motivated, the only hardware you need is a modem, a telephone line, and, perhaps, an interface card and cable to connect the modem to your Apple.

Like automobiles, modems come in different makes and models. (See the Product Information box for details.) Some transmit information faster than others. A 300-baud modem can send or receive the equivalent of a double-spaced typewritten page of text in about a minute. A 1200-baud modem is proportionally faster. A 2400-baud modem is speedier still.

But, like automobiles on the freeway, telecommunications has a speed limit. Most BBSs and information utilities support a rate of 300 baud. Many can transmit/receive at 1200 baud. Few support 2400 baud. In actual use, your 1200-baud modem must downshift to 300 baud if the computer with which you're communicating is running at 300 baud. On the other hand, your 300-baud modem can't communicate with a remote computer operating at 1200 baud.

Many beginners get their feet wet by purchasing an economical 300-baud modem, but may soon find that they outgrow it. Large numbers of BBSs are upgrading to 1200 baud. One owner of a 300-baud modem called a BBS recently only to be told to "call back when you have a real modem"—meaning a 1200-baud unit.

User fees for the pay-as-you-go information services are another consideration. When you subscribe to CompuServe, for instance, communication at 300 baud costs only $6 per hour in the evening and on weekends; communication at 1200 baud costs $12.50. And, remember, these fees are in addition to the cost of your telephone charges—which may be for long-distance calls.

If you like to telecommunicate casually—browsing through departments and reading each screenful of text as it appears—300 baud may be appropriate. But for serious users, especially those who upload and download files frequently, faster is better, since you can transfer more information in much less time.

Some modems, such as the Apple Personal Modem, are "switchable" and can run at either 300 or 1200 baud—a feature that lets you telecommunicate at slower speeds when you can and at high speed when you must.

Whether you purchase a 300-baud modem, a 1200-baud modem, or a hybrid, you also need to consider whether you want a modem that sits on your desk (*external*) or one you install inside your Apple (*internal*).

If you use an Apple IIc, a "closed" system, you probably won't be able to find an internal modem. Some external units connect to the IIc's serial communications port by cable; some, such as the **Prometheus 300C**, plug directly into the port to keep the IIc compact and portable.

Owners of the II Plus, IIe, or IIGS have more choices. External modems require a cable and, in the case of the II Plus and IIe, a serial-interface card. You can attach an external modem like the Apple Personal Modem to the GS' external serial communications port and eliminate the need for a card. Appropriate cables, if not included with the modem, can cost an additional $30 or so.

Serial-interface cards, such as those listed in the Product Information box, carry list prices of more than $100. In most cases, you're getting more than just a modem inter-

Setting Up Your Own BBS

"I like the idea of running a BBS—it's an interesting way to meet a lot of people," quips 16-year-old Paul Larkin, a sysop (system operator) from West Kingston, Rhode Island.

Paul's "board," Alcazar, has undergone a half-dozen name changes since he first set it up nearly two years ago. So has Paul's "handle": He used to be The Celestial Knight; now he's Asmodeus Rex. (His friends call him "Rexxy.")

Paul runs Alcazar on what he considers to be a minimum system: a 128K Apple IIe with 5¼-inch Duodisk drives and a **Cermetek AppleMate 1200** modem. Paul is currently adding a 10-megabyte ProAPP hard-disk drive.

Paul used a 300-baud **Zoom Modem IIe** originally, but hankered after greater speed. According to Paul, "Three hundred baud is pretty lame." After investigating a number of options, he chose **GBBS Pro 1.3** software to go along with the Cermetek 1200.

About 200 people, ranging in age from 14 to 41, have joined Paul's board to send E-mail and public messages, upload and download files, or just chat with the sysop. Paul claims to have users from all 50 states and Canada.

And they don't just talk about computers. Paul notes, "Somebody on the board asked another guy about Goddard Park (a public recreation area in a neighboring town). Before you knew it, everybody started talking about it. Last August about 30 of us planned a picnic there, coordinated in part by Jay Wilbur, the Apple II editor at *UpTime*."

According to Paul, setting up your own board needn't be expensive. He estimates that you can install a dedicated phone line and purchase a 1200-baud modem and BBS software for about $300 total if you shop carefully.

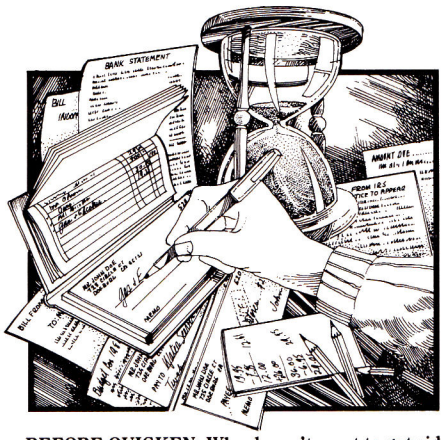
Paul's advice for those starting their own BBSs? "I learned that there are hard times and there are good times, and you've got to stick with it," he says. "One week you might get two calls (summer is an especially slow period), and the next week it seems everybody's calling."□

—C.F.

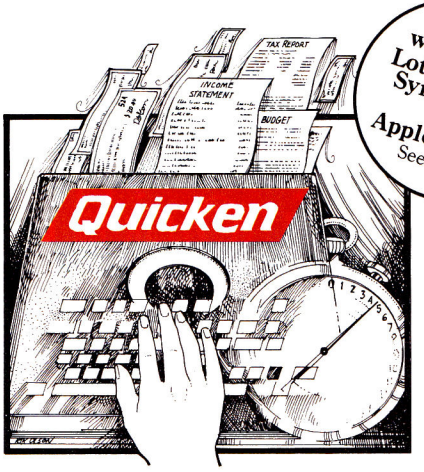
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Apple® IIgs, IIc and IIe (IIe requires extended 80-column card), with one or two floppy disk drives, or UniDisk™ 3.5 or hard disk. Any printer. No modem required. AppleWorks optional.

Product names are trademarks of their respective manufacturers.

*Patent Pending **Lotus Transfer Utility available for $15 from Intuit

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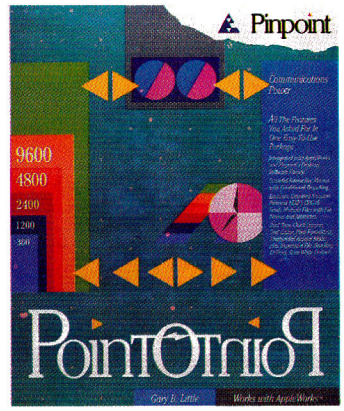
Circle 193 on Reader Service Card.

face, though. Some have clock/calendars or intelligent printer interfaces, as well.

An internal modem looks like an interface card, but with an *RJ-11* port (for the phone cable) and a speaker. It inserts into one of the peripheral expansion slots in your II Plus, IIe, or IIGS.

Generally speaking, the faster the modem operates and the more features it includes, the higher its purchase price. List prices for 300- and 1200-baud modems range from $100 to $600. You can buy most brands through mail-order companies or on sale from your dealer at a substantial discount, so shop around.

To protect your investment from the damaging effects of power surges, you might consider spending another $70–$110 for a product, such as the Curtis **Diamond-Plus** or **Ruby-Plus**, that protects both your AC line (to your Apple hardware) and the telephone line (to your modem).



Pinpoint's Point-to-Point telecommunications software.

EXPAND THE POWER

Whether for word processing or telecommunication, hardware without software is . . . well, just a doorstop. Most modems today recognize the command setup that Hayes Microcomputer Products, a leading modem manufacturer, has made the standard for the industry with its **Smartmodem** line. You can tell your modem what to do by typing in Hayes commands such as ATDP16039249801 (*A*ttention! *D*ial! My phone does *p*ulse dialing. Here's the number: *16039249801*).

Expanded communications software automates the processes of dialing or answering, connecting, editing files, uploading, downloading, printing, saving files, and logging off. Some modems, such as the Prometheus Promodem 300C mentioned above, come with communications software on disk, including a built-in phone directory in which you store numbers you call frequently. Prometheus' **ProCom A** software, which you can buy separately, lets you use the keyboard or the mouse to simply point to the information service you want, then press the return key or click the mouse button to start the auto-dialing process.

ProCom A's interface is AppleWorks-like. Each BBS, on-line service, or personal computer in your directory has its own screen "file card" on which you type phone number, log-on procedure, and *setup* information, or *protocol*. Setup usually involves just four values: *baud rate* (number of bits transmitted per second), number of *data bits* (the number of bits per character), *parity* (adding either an extra one or an extra zero to each byte so that the count of all ones or zeros is always odd or always even, used for error detection), and number of *stop bits* (marking the end of each character). Seven or eight data bits, even or no parity, and one stop bit are standard settings.

A number of modems, including most Hayes models, are sold without software, so you have to shop around for compatible programs. There are a number from which to choose. (See the accompanying Product Information box.) Advanced programs offer such desirable features as macros (**ProTerm**), AppleWorks compatibility (**CommWorks** and **Point-to-Point**), a Macintosh-like interface (**ASCII Express MouseTalk**), and immunization against call-waiting signals. Keep in mind also that certain IIe/IIc communications programs are incompatible with the GS serial port.

TAKE THE PLUNGE

Before you dive headfirst into telecommunications, there are issues to consider, aside from the hardware and software decisions you must make.

To be blunt, subscribing to an information service can be costly. First, there are the registration fee and on-line user fee. Then, although you can access some services through toll-free numbers or numbers in your area code, in many cases you'll have to pay for long-distance telephone calls. Set priorities. Select the information service that's most appropriate to your needs, or, if you're a home Apple user, the one that's best for everyone in your family. Allot each person a certain number of hours per month; perhaps you'll want to restrict usage to nonprime time.

To add insult to injury, the Federal Communications Commission is tinkering with the idea of imposing access charges. If such a ruling passes, as much as $5 an hour may be passed on to the consumer.

Another consideration is security. Commercial information

The Kids' Network

The National Geographic Society's BBS isn't its only telecommunications endeavor. The Society's Educational Media Division sponsors a Kids' Network Project, through which children in elementary schools throughout the U.S. can participate in ecological studies and relay their data by modem from their school computers to the Society's central computer. A staff scientist evaluates the information, compiles data from participating schools, and graphs the results in the form of a U.S. map. Children use their school computers to call the Society's computer and see the outcome of their collaborative study.

One recent experiment, for instance, challenged students to use pH paper to test for acid rain. When you dip a piece into a sample of tap water or freshwater (from a pond, say), the paper changes color. You compare it to a color chart, which tells you how acidic the water is on a scale of 1–14.

The students, and the National Geographic Society, too, were surprised to find a high level of acid rain in Nebraska. The Society called the U.S. Environmental Protection Agency, and learned that strong wind currents moving over Nebraska at the time of the sample carried acid-causing pollutants from certain industrial areas in the Southwest.

For more information about how your school can become involved, write to the National Geographic Society, Educational Media Division, 17th and M Street NW, Washington, DC 20036, ATTN: Kids' Network Project.□

—C.F.

utilites, such as CompuServe or Delphi, require a credit card or checking-account number when you sign up. In return, the service assigns you a password, which it encourages you to change frequently. Cracking into computer systems by figuring out passwords is the ultimate hacker's high. An unscrupulous person can log on and siphon off more than your electronic mail. Guard your password and caution your children to do so, too.

So what are you waiting for? Use the Product Information box to select a modem, communications software, and a BBS or commercial on-line service. When you know how to tap into these limitless electronic resources, you have a world of information at your fingertips.■

Cynthia E. Field is the author of Field Trip, inCider*'s column on educational software. She teaches botany at the University of Rhode Island and is a free-lance journalist specializing in computer-related topics. Write to her at 10 Border Avenue, Wakefield, RI 02879. Enclose a self-addressed, stamped envelope if you'd like a personal reply.*

Product Information

Access II, $75
Apple Personal Modem (300 or 1200 baud), $399
Super Serial Card, $139
Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014
(800) 538-9696
(408) 973-2222

Reader Service Number 309

Apple Cat II (300 baud), $319
Apple Cat II (1200 baud), $595
Professional 1200XE, $299
Professional Modem (2400 baud), $750
Novation, Inc.
21345 Lassen Street
Chatsworth, CA 91311
(818) 998-5060

Reader Service Number 310

ASCII Express Pro, $129.95
ASCII Express MouseTalk, $99.95
United Software Industries
8399 Topanga Canyon Blvd.
Canoga Park, CA 91304
(800) 332-7244
(818) 887-5800

Reader Service Number 311

Boston CitiNet (includes RealNet: Electronic Real Estate Marketplace)
Suite 717
World Trade Center
Boston, MA 02210
(617) 439-5699
(617) 461-1940 (data, 24 hours)
no charge
$50 E-mail privileges (maximum of 5 hrs/week usage)
Setup: 300 or 1200 baud; 7 data bits, even parity, 1 stop bit

Reader Service Number 312

BRS Information Technologies
1200 Route 7
Latham, NY 12210
(518) 783-1161
(800) 235-1209
After Dark (evening and weekends): $75 one-time registration fee; usage fee $6—$38 per hour
Colleague (medical): $95 one-time registration plus usage fees
Search: $75 and $500

Reader Service Number 314

Capitol Connection
(916) 442-0746 (data, 24 hours)
no charge
Setup: 1200 baud; 7 data bits; even parity; 1 stop bit

Cermetek Applemate 1200
Cermetek Microelectronics
1308 Borregas Avenue
Sunnyvale, CA 94088-3565
(408) 752-5000
$249

Reader Service Number 315

CommWorks
PBI Software
1163 Triton Drive
Foster City, CA 94404
(800) 843-5722
(800) 572-2746 (CA)
$95

Reader Service Number 316

CompuServe Information Services
5000 Arlington Centre Blvd.
Columbus, OH 43220
(800) 848-8199
(614) 457-0802 (OH)
$39.95 registration

Reader Service Number 317

Computer Shopper
5211 South Washington Ave.
P.O. Box F
Titusville, FL 32781
(800) 327-9926
(305) 269-3211
$21 per year
(monthly publication)

Reader Service Number 318

Computers and Communications
Koji Kobayashi, author
MIT Press
55 Hayward Street
Cambridge, MA 02142
(617) 253-5251
$16.95

Reader Service Number 319

Courier 1200, $349
Courier 2400, $599
Courier HST, $995
Sportster 1200, $149
Sportster 2400, $299
U.S. Robotics
8100 North McCormick Blvd.
Skokie, IL 60076
(312) 982-5010

Reader Service Number 320

DataLink (300 and 1200 baud, internal), $219
Serial Pro, $139
Applied Engineering
P.O. Box 798
Carrollton, TX 75006
(214) 241-6060

Reader Service Number 321

Delphi
General Videotex Corp.
3 Blackstone Street
Cambridge, MA 02139
(800) 544-4005
(617) 491-3393
(617) 576-0862 (data; 300 and 1200 baud)
$49.95 registration; includes handbook, 2 free evening hours, quick-reference command card

Reader Service Number 322

Dialog Information Services
3460 Hillview Avenue
Palo Alto, CA 94034
(415) 858-3792
$25 registration

Reader Service Number 323

Diamond-Plus, $74.95
Ruby-Plus, $114.95
Curtis Manufacturing
305 Union Street
Peterborough, NH 03458
(800) 548-4900

Reader Service Number 324

Direct Connections: How to Get Computers to Talk to Each Other
Arielle Emmett and David Gabel, authors
Plume Books
The New American Library
1301 Avenue of the Americas
New York, NY 10019
(212) 397-8000
$22.95

Reader Service Number 325

Dow Jones News/ Retrieval
Dow Jones & Company
P.O. Box 300
Princeton, NJ 08543
(609) 452-1511
startup fee: $29.95
personal; $44.95 corporate
$12 annual service fee

Reader Srvice Number 326

EasyLink/InfoMaster
Western Union
1 Lake Street
Upper Saddle River, NJ 07458
(201) 825-5000
$25 minimum monthly usage fee

Reader Service Number 327

Educational Products Information Exchange Institute
P.O. Box 839
Water Mill, NY 11976
(516) 283-4922
$49.95 registration fee plus access to CompuServe

Reader Service Number 328

Continued

Continued

Electronic University Network
Telelearning Systems
1150 Sansome Street
San Francisco, CA 94111
(415) 274-3100
(800) 22-LEARN (modem)
(800) 44-LEARN (modem CA)
$200 one-time registration fee

Reader Service Number 329

Fabri-Tek 242ADH, $395
Fabri-Tek 242AMH, $495
CTS Fabri-Tek
6900 Shady Oak Road
Eden Prairie, MN 55344
(612) 941-9100

Reader Service Number 330

GBBS Pro 1.3
L&L Productions
P.O. Box 5354
Arvada, CO 80005
(303) 420-3156
(303) 420-3568 (data, 24 hours)

Reader Service Number 331

GEnie
General Electric Information Services
401 North Washington St.
Rockville, MD 20850
(800) 638-9636
(800) 638-8369 (modem)
$18 one-time registration fee plus connect time

Reader Service Number 332

***inCider* BBS**
80 Elm Street
Peterborough, NH 03458
(603) 924-9471
(603) 924-9801 (data, 24 hours)
Setup: 300 or 1200 baud, 7 data bits, no parity, 1 stop bit

Reader Service Number 333

Lexis (law)
Nexis (general interest)
Mead Data Central
9393 Springboro Pike
P.O. Box 933
Dayton, OH 45401
(800) 543-6862
$125 yearly plus search fees ($0.53—$16 per minute)

Reader Service Number 334

Micro-to-Mainframe Links
Ronald F. Kopeck, author
Osborne/McGraw-Hill
Princeton Road
Hightstown, NJ 08520
(609) 426-5000
$21.95

Reader Service Number 335

Micromodem IIe with Smartcom I, $199
Smartcom I, $119
Smartmodem 300, $199
Smartmodem 300 with Smartcom I, $239
Smartmodem 1200 (external), $399
Smartmodem 1200A (internal for the IIe), $349
Smartmodem 2400 (external), $599
Hayes Microcomputer
P.O. Box 105203
Atlanta, GA 30348
(404) 449-8791

Reader Service Number 336

Modem MGR
MGR Software
305 S. State College Blvd.
Suite 101
Anaheim, CA 92806
(714) 993-0294
$49.50

Reader Service Number 337

MultiModem (300/1200 baud), $349
MultiModem 212E, $399
MultiModem 224 (300/1200/2400 baud), $599
MultiModem 224E, $649
Multi-Tech Systems, Inc.
82 Second Avenue S.E.
New Brighton, MN 55112

Reader Service Number 338

National Geographic Society BBS
Educational Media Division
17th and M Street N.W.
Washington, D.C. 20036
(202) 857-7378
(202) 775-6738 (data, 24 hours)
Setup: 300 or 1200 baud; 8 data bits; not parity; 1 stop bit

Reader Service Number 339

Netmaster (software), $29
Networker (300 baud), $79
Zoom Modem IIe (300 baud), $99
Zoom Modem IIe Plus, $119
Zoom Telephonics
207 South Street
Boston, MA 02111
(617) 423-1072

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$75 6-month registration
$15 monthly registration
($30 credit for on-line time)

Reader Service Number 341

Point-to-Point
Pinpoint Publishing
P.O. Box 13323
Oakland, CA 94661-0323
(800) 633-2252
(415) 654-3050
$129

Reader Service Number 342

Popcom X100
Prentice Corporation
266 Caspian Drive
Sunnyvale, CA 94088
(408) 734-9810
$475

Reader Service Number 343

Practical 1200SA Mini
(300 or 1200 baud)
SeriAll, $115
Practical Peripherals
31245 La Baya Drive
Westlake Village, CA 91362
(818) 991-8200

Reader Service Number 344

ProAPP 20-MB Hard Drive
ProAPP
10005 Muirlands, Suite M
Irvine, CA 92718
(714) 855-9088

Reader Service Number 345

ProCom A, $49
Promodem 300C with ProCom A, $119
Promodem 1200 (external, expandable), $349
Promodem 1200A (internal), $299
Promodem 1200G, $249 (external, not expandable),
Promodem 2400 (external, expandable), $499
Promodem 2400G, $399 (external, not expandable),
Prometheus Products
4545 Cushing Parkway
Fremont, CA 94538
(415) 490-2370

Reader Service number 346

ProTerm
Checkmate Technology
509 South Rockford Drive
Tempe, AZ 85281
(800) 325-7347
(602) 966-5802
$95

Reader Service Number 347

Signalman Express
(1200 baud), $299
Signalman Lightning
(2400 baud), $499
Volksmodem 12, $199
(accompanying cables, $14.95)
Anchor Automation
20675 Bahama Street
Chatsworth, CA 91311
(818) 998-6100

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Softronics
7899 Lexington Drive
Suite 210
Colorado Springs, CO 80920
(800) 225-8590
(303) 593-9540
$195

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Patricia Moser Shillingburg, author
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Russell Holt and Gary Little, authors
Brady Books
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ON-LINE SERVICES



by Tom Sherman

On-line services offer Apple II users a wide range of information and entertainment. inCider *presents an on-line primer, plus a look at the four major services—CompuServe, GEnie, Delphi, and The Source—and their special Apple II sections.*

On-line networking—it's useful, certainly. Educational, of course. A little scary at first, granted. But fun? Yes—whatever your initial reasons for going on line, you'll soon be hooked on the variety and scope of information you can access with a modem and your Apple II.

You might begin your on-line adventure by exchanging messages or programs on a local bulletin-board system, or BBS—a good place to develop your skills. Or maybe on-line banking or electronic mail (E-mail) attracts your interest. Wherever you start, you'll eventually want to try out the major information services, which offer a broad range of activities—from astrology and adventure games to zen and zoology. (See "Telecommunications," p. 48 in this issue, for a rundown on hardware, software, and bulletin boards for Apple II telecommunicators.)

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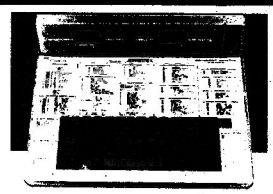
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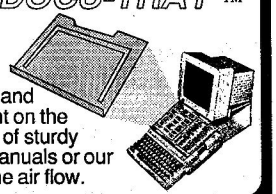
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4. News, Weather, Sports <NEWS>

5. Shopping <SHOP>

6. Travel <TRAVEL>

7. Business and Finance <BUSINESS>

8. Education and Reference <LIBRARY>

9. Special-Interest Groups <SIG>

1Ø. Sign Off <BYE>

Enter number, name or ? for help:
```

international network, which in turn ties into the service's computers. Some information services are accessible through networks such as Telenet, Tymnet, and Datapac; others have their own networks. You can find out which network is best for you (and other information about making the connection) from on-line services' brochures or customer-service offices when you subscribe.

Once connected to an information service, you'll see a main menu on screen offering a list of options like those in **Figure 1**. Typing either a menu number or the first letters of a service takes you to a submenu—often the first of many. For example, typing "1" or "SER" from the sample main menu might bring you to a submenu like that shown in **Figure 2**. Once again, typing a number or service name brings you to another submenu, until you reach the specific information you're looking for.

Navigating through menus is easy, though it may not seem that way at first. As one expert recalls, learning your way around an information service feels a lot like learning to drive a car: You worry about making mistakes, you fear costly accidents, and you're certain that everyone is watching you make a fool of yourself.

HELP'S JUST A KEYSTROKE AWAY

It's reassuring to know that all these systems are menu-driven and detailed help is rarely more than a keystroke or two away. Not only can you type a question mark or "HELP" at almost every decision point, but you can also take an introductory <TOUR> of the system, get a list of <COMMANDS>, or see chapters in the <MANUAL>.

Even with an excellent map and good navigation skills, however, it's still possible to find yourself in unfamiliar territory. You'll enjoy your initial on-line experiences more if you make it a point to determine certain basic commands, such as those to stop and restart scrolling (Control-S and Control-Q), interrupt current activity (often BREAK, Control-C, Control-P or Control-O), return to the main menu (often TOP, MAIN, or MENU), and disconnect from the system (OFF or BYE).

```
        CUSTOMER SERVICES

  1. What's New <NEW>

  2. Tour <TOUR>

  3. Manual <MANUAL>

  4. Command Summary <COMMANDS>

  5. Member Information <INFO>

  6. Billing <BILL>

  7. User Profile <USER>

  Enter number, name or ? for help:
```

Figure 2. Above, submenus take you to the particular database or text screen you're looking for.

Figure 1. Left, typical information-service main menu.

Some of these commands differ from system to system, so it's a good idea to read the manual or on-line files to find out the specific keystrokes. Even if you usually prefer to learn new programs by guesswork, you'll avoid frustration and unnecessary phone charges by reading the documentation first, either in an accompanying manual or in a downloaded file.

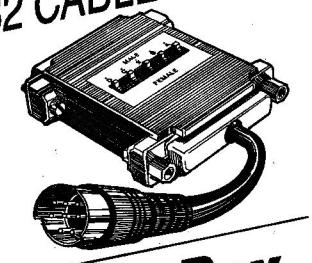
Once you've learned the basics—it won't take more than a couple of visits—you'll begin to discover the shortcuts that make it quicker to travel around familiar on-line neighborhoods. For example, these systems let you move from place to place with commands instead of menus if you prefer, so that you can use a shorter menu form or even turn the menus off entirely. As a beginner, you'll relax when the service asks you whether you want to continue after every screenful of text. But that "more?" prompt soon becomes unnecessary; you can refine your settings to get rid of it.

Shortcuts are valuable not only because they save frustration, but also because they save time—and time on line is money. As you compare service rates, keep in mind your equipment, your reasons for using that service, and the time of day you're most likely to be on line. If your modem's highest transmission rate is 1200 baud, the fee for 2400 baud makes no difference. If you spend most of your on-line time in conversation, you don't need to pay for speeds above 300 baud. If you're most interested in downloading long files or programs, however, then 1200 or 2400 baud makes sense.

Hourly rates are lower in nonprime time (weekends and 6 p.m. to 7 or 8 a.m. weekdays) so check to see how your on-line schedule will affect your bill.

In any case, remember that commercial on-line services offer deductions and variations in rates. (See the Product Information box for details.) Promotional materials packaged with modems and communications software, for example, may save you the initial sign-up fee, or the sign-up fee may cover the cost of a manual and a little time on

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line. On the other hand, access to certain features, such as on-line databases, may cost extra, as does storage of your own files on the information system's computers.

FROM ADVENTURE TO ZOOLOGY

As you learn to navigate the information services, you'll discover many diverse, intriguing activities. Although each service offers features that distinguish it from the others, the major vendors have a lot in common. Let's take a look at some of the activities represented in their main-menu categories:

Communications. You can exchange electronic mail almost instantly with other individuals or groups in the system's searchable directory of members. In fact, some services let you send electronic mail to other systems, to have messages printed and sent through the U.S. mail, and to send and receive telex messages.

You can also participate in real-time "conversations" in which a group of people on line at the same time type messages to each other. Often called "chat" or "CB," this mode of communication is a popular way to make friends. **People/Link**, lacking other features of the major information systems, emphasizes social activity of this kind.

Entertainment and leisure. Do you open your copy of *inCider* directly to Mace on Games? Then you'll be delighted to find both single- and multiplayer games on line. Or maybe you'd like to twist the plot of a collaborative novel, take a look at movie reviews, get reports on this year's wines, see what happened on the soaps last week, or read your horoscope. You've come to the right place.

News, weather, and sports. If you're looking for the latest reports, you can get them from the Associated Press, United Press International, or a variety of newspapers on line. What's more, you'll find a number of specialized newsletters and other publications. Many of them provide information about the world of computers, including hardware and software reviews.

Shopping. You can order computer programs and equipment, books, records, and much more electronically; you pay by credit card and the products are delivered to your doorstep—saving time and sometimes money.

Travel. Check out the attractions of places around the world, then schedule your airplane flight, make hotel reservations, even rent a car. It's not as easy as calling a travel agent, but it'll extend your horizons.

MAUG on CompuServe

Today it's called the Micronetworked Apple Users Group, but the acronym dates back to 1978, when CompuServe's hobbyist service was called MicroNET. The first "forum" on the first consumer information service, MAUG is also the most "densely populated" of the Apple SIGs—it has the largest number of members, messages, and files. Neil Shapiro, founder of MAUG and its chief sysop, estimates that 35,000 members add more than 30 new files every week to libraries that already hold some 3000 files.

MAUG is now divided into five forums, two for Mac people and three for Apple II and III users, developers, and user groups. In MAUG, as in the other Apple SIGs, much activity now centers on the IIGS—with messages about ROM upgrades and library files of programs, graphics, and music.

To stimulate the development of useful new programs, MAUG offered prizes to developers of the best new GS desk accessories. That "DAcathalon," Shapiro says, illustrates both the community spirit of MAUG and its influence on Apple II development.

In general, MAUG does a good job of dealing with an enormous amount of information. For example, one program in the library, the MAUG Message Manager, automates the process of getting messages and replying to them, reducing on-line time.

But the message board exemplifies one of the challenges of rapidly growing on-line discussions—the "rolling present." The board can hold only 1000 messages, so the newest messages bump the oldest messages at the rate of 100–350 each day. If you haven't read important messages addressed to you, the sysops will try to forward them to your mailbox before they scroll off into oblivion. Some message threads are saved in the *Apples On Line* newsletter, but, if you don't sign on every few days, you'll find it impossible to keep up with other ongoing discussions. MAUG seems to have a distinctive sense of urgency, and, like other CompuServe services, benefits from its new reduction in prime-time rates, now the same as nonprime.□

—T.S.

Delphi: Apple II and III User Group

In 1983, when Delphi became a public service, its manual boasted that "Delphi was designed for humans. . . . To use it you don't have to know any language except English." Although all the information services have changed significantly since then, many people find Delphi more intuitive and less intimidating than the others to use. For example, in the Apple Group message board, you follow a message thread by typing FOLLOW, instead of CompuServe's RR (for "read replies"). Although its power to search—by date, for instance—is more limited than other systems', Delphi SIGs are easy to use.

Despite ease-of-use and the encouraging presence of sysop expert Cecil Fretwell, the Delphi Apple Group has been languishing lately, often recording only a message or two each day. More energy may be focused on ICONtact, the section for Apple programmers, where, as in other Apple SIGs, you'll find Apple's technical notes for developers and information about the Apple Programmers and Developers Association (APDA).

According to Peter Olson, manager of the Delphi Apple Group, important changes are anticipated in the library—not only adding a much larger number of public-domain programs, but also adding powerful YModem and WXModem file transfer to the current XModem and Kermit protocols. With its nucleus of loyal and expert members, and its ability to poll members' interests, this Apple SIG has plenty of potential to respond to newcomers.□

—T.S.

Business and finance. There's a lot more here than just market prices—including investment analysis, brokerage services, personal-finance programs, tax information, and employment services.

Education and reference. Services for teachers, parents, and students of all ages are reinforced with extensive text from on-line encyclopedias and a mind-boggling variety of databases. Health information, sometimes quite specialized, is particularly well represented on line.

Special-interest groups. Also called "roundtables," "forums," or just plain "groups," SIGs are many people's primary reason for going on line. Most of these meeting areas are public, but some are private, created for businesses or membership organizations.

Among the hundreds of interests represented publicly are law, medicine, management, consulting, photography, politics, religion, engineering, science fiction, space, ham radio, home offices, public relations, rock music, journalism—and, not surprisingly, computers of every kind.

CompuServe, **Delphi**, **GEnie**, and **The Source** all have comprehensive SIGs devoted to the Apple II. In each case, the major features are a message board, a library, and a conference area.

APPLE SIG MESSAGE BOARDS

SIG message boards resemble enormous bulletin boards, where people post hundreds of messages to ask and answer questions, make comments, or simply get to know each other.

To help keep things straight, messages are organized into categories, such as telecommunications, games, programming, AppleWorks, IIGS, and so on. You decide which of these general sections you want to explore, then, within each category, follow the thread of particular topics or discussions.

Suppose, for example, you're thinking about buying a new word processor. You've read the reviews and checked the prices—both in magazines and on line—and you want to find out what others think about your tentative choice. On the Apple SIG message board, you discover a category called "Software," and, using the board's search features, you locate a series of messages from a number of people who use the program you're considering.

Apple II special-interest groups on line offer message boards with scores of categories of information, plus public-domain programs, libraries, electronic "conversation," and real-time conferences. To the left and below you'll find profiles of the Apple SIGs belonging to the four major on-line services.

GEnie: American Apple Roundtable

Scarcely two years old, GEnie is the fastest-growing information service, thanks in part to competitive pricing in nonprime time. Although it lacks a few features found on other services—a detailed member directory and personal-file storage, for instance—its message-board format particularly distinguishes GEnie SIGs from the others. Divided into categories, messages aren't linked in threads, but are instead posted permanently in subtopics, which users define.

The permanent message board sometimes holds repetitive notes—for example, many messages pointing to library files of instructions that aren't so easy for newcomers to find. But the Index command displays all Roundtable categories with their subtopics, making it possible to find and read particular discussions of interest. This message structure also supports topics allocated to special-interest groups within the American Apple Users Group and to vendors such as Pinpoint, Checkmate Technology, and the A.P.P.L.E. Coop, which stores its product list here.

According to GEnie's sysops, whose breezy humor makes this a friendly SIG, their bulletin board reflects AART's emphasis on complete and current Apple information, telecommunications, and the community of Apple owners. Those topics are reinforced by related GEnie roundtables for representatives of Apple user groups nationwide and for Apple II programmers and developers, headed by the widely known writer Michael Fischer.

GEnie has taken the lead, now followed by some other information services, in giving users free time to upload files to its libraries. Growing by some 25 files each week, the AART library now holds more than 3000 files and, according to AART's manager, Kent Fillmore, is especially strong in home productivity, education, and entertainment. GEnie's XModem file transfer is the fastest among the information services. In downloading files of equal length from all four, I found that GEnie took two-thirds the time of CompuServe and Delphi, and a little more than half the time The Source did.□ **—T.S.**

The Source: AppleSIG

Although The Source was introduced in 1979, the current AppleSIG began late last May. According to Jack Griffin, its sysop and a former Apple executive (1980–1986), the new SIG is developing in response to members' interests, giving it an exciting potential for users at all levels of expertise. Drawing particularly on the software and newsletter articles collected by the Apple Two Information Exchange, the SIG's librarian, Joe Kohn, is adding 20 files per week to the base of 200 carefully selected programs. Unlike MAUG, whose file-transfer instructions emphasize DOS 3.3, AppleSIG has based its library on ProDOS. Thanks to that simplification, AppleSIG instructions are the clearest available.

AppleSIG is also distinguished by its new message board, which lets you search the text of all messages for any word, and by access to "Participate" conferences. Although earlier versions of Parti, as it's called, were difficult to use, the current version is perhaps the most powerful system among the four SIGs discussed here for organizing and storing messages. In addition, AppleSIG also connects you to Craig Crossman, an Apple expert who promises an answer to any question within 24 hours.□ **—T.S.**

Maybe their comments aren't quite persuasive enough, so you add your questions to the string: "Has anyone tried this program with the printer I use? Have you had any problems with customer support? Are there any problems with the new version?" When you return to the message board a few days later, you find several responses from people who may well become your on-line friends.

You may even find your questions answered by the author of the very program you're considering. More and more software and hardware vendors go on line to answer questions, offer advice, and listen to your comments about their products. It's even more likely that your questions will provoke a generous response from other experts or, in some cases, an Apple staff member. In recent months, a great deal of discussion has focused on the IIGS, and Apple SIG message boards are certainly a comprehensive source of information about the new hardware and software being developed for it.

Much of that GS software is being written by technical wizards who share information on line in special areas for developers. If you're interested in programming, you don't have to speak machine language to learn a lot from these discussions. Looking back through the messages, you may find debates that influenced the development of new programs.

APPLE SIG LIBRARIES

Like message boards, SIG libraries are divided by category—games, utilities, graphics, music, education, AppleWorks templates, household management, and programming, to name a few examples. You can search the library directories to find the information, pictures, or programs you want to download to your own Apple. And you can upload to the library those files you've developed yourself so that others can use them.

Most of the hundreds of available programs are in the public domain, free for the taking. Other "shareware" programs have been placed in the library by authors who ask that you send them a small payment—rarely more than $50—for use of their software. New versions of these programs are often available on line, as are useful patches to improve commercial programs such as AppleWorks.

Among public-domain programs, the most useful are often available in the libraries of all four Apple SIGs—including excellent communications and word-processing software. The variety, quality, and usefulness of their programs makes these libraries popular among Apple II users.

ELECTRONIC CONFERENCES

Everyone knows the frustration of waiting for the mail to arrive and of calling people who happen to be away from the phone. Exchanging information through electronic mail, message boards, and libraries overcomes many of those problems. Electronic communication is fast, and you don't

Information Services and the FCC

One of the most heated recent topics on line is the increase in access costs proposed by the Federal Communications Commission (FCC). The outcome of this debate will have important consequences for on-line information services.

In 1983, the FCC arranged that long-distance carriers such as AT&T pay local exchanges (Bell of Pennsylvania, for instance) for making connections through them. In fact, long-distance carriers pay for access at both the originating and terminating ends of a long-distance call, along with other variable costs. Or, rather, you pay those fees—which have dropped in recent years—in your long-distance bill.

Four years ago, there was concern that the "rate shock" caused by rapidly increased access fees might seriously threaten the providers of computer-based communications, information retrieval, and network services. So the FCC originally exempted these "enhanced-service providers" and others from paying access charges. Instead, they pay local business rates and subscriber line charges for their switched-access connections to local exchange-company central offices. Some of those included originally—telex carriers, for example—have already lost their exemptions.

Now the FCC proposes to end the exemption for enhanced-service providers in January. The FCC and those who share its viewpoint argue that all users—voice and data—should bear access costs equitably.

In its July *Notice of Proposed Rule Making*, the FCC says that given the exemption, enhanced-service providers "do not contribute sufficiently to the costs of the exchange-access facilities they use in offering their services to the public." The FCC's objective is "to establish a set of rules that provide for recovery of the costs of exchange access used in interstate service in a fair, reasonable, and efficient manner from all users of access service, regardless of their designation as carriers, enhanced-service providers, or private customers."

Those favoring continued exemption argue that continued growth of the computer-services industry is in the public interest and that without the exemption, as CompuServe puts it, "the steady growth and healthy competition that have characterized this young industry will be stifled."

The affected companies, including value-added networks such as Telenet, electronic-mail services, and database providers, predict substantial increases in their costs—as much a $5 an hour. Although they haven't determined how much of that increase would be passed on to their customers, any higher cost, they argue, would be especially detrimental to consumers and public-interest groups.

ADAPSO—the industry association for computer software and services—claims that ending the exemption "would have a devastating effect on the U.S. computer-services industry while severely and unnecessarily increasing costs to users of data-processing services." Looking at the government support of these technologies in other countries, many argue that the United States, as a matter of national policy, should find ways to support its computer-service industry.

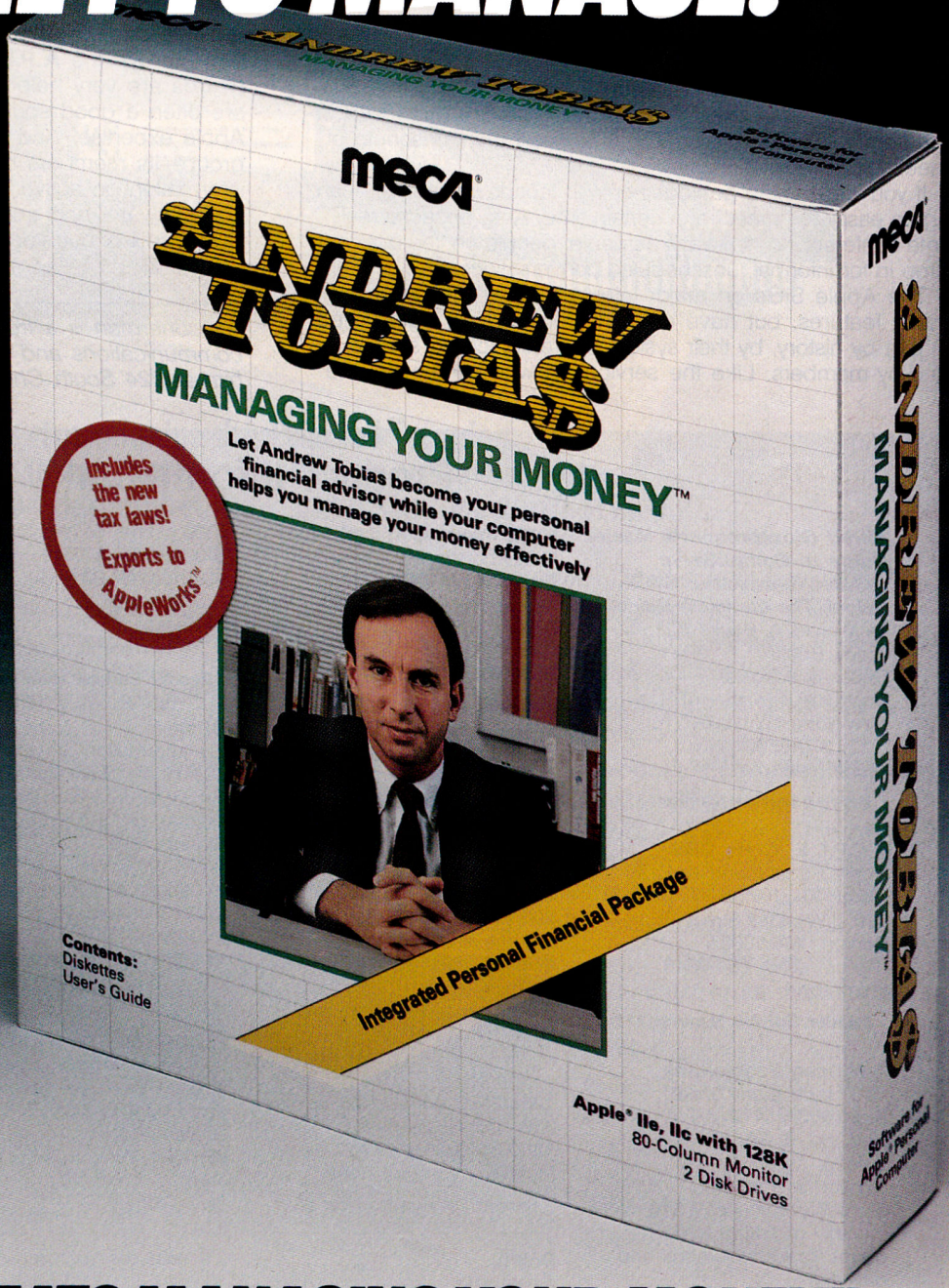
The FCC accepted public comments on the proposed change until September 24 and comments on those comments until October 24. You can read the testimony on docket number 87-215 at the FCC offices in Washington, D.C., or order copies of it. It's unlikely that the organization will reach a decision before the end of this year.□ **—T.S.**

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have to be waiting at your computer at the moment someone sends you a message.

There's a drawback: Unlike conversations in person and on the telephone, *asynchronous* communication doesn't allow the quick back-and-forth of comment and response. People on line at the same time, however, can have a discussion in an electronic conference "room."

In addition to offering regularly scheduled on-line meetings—of an AppleWorks user group, for example—Apple SIGs sometimes schedule formal meetings with invited guests, including *inCider* editors. These events give you a chance to talk on line with software authors, vendors, people from Apple Computer, and others in the Apple II world. Records of these special meetings are often filed in the library, giving you a chance to read the transcripts of meetings you can't attend.

If you just want to get together with friends on line, you can agree easily to "meet" at a certain time. And, because real-time conferencing is always available, people on line often drop in for informal, unscheduled conversations.

The Apple SIGs on major information services share many features, but have different personalities, determined in part by history, by their system operators (called *sysops*), and by members. Like the services in which they live, the Apple SIGs continue to develop in response to the rapidly growing number of people on line. For a look at some "snapshots" of the four leading Apple SIGs, see the accompanying sidebars.

A FEW ALTERNATIVES

If you're searching for Apple information in particular, there are several alternatives to the large information services. Among national systems, **BIX** and **The WELL** have active Apple users.

If you don't mind the long-distance phone call (or if you live nearby), the **A.P.P.L.E. Crate** and ***inCider*** bulletin boards are very helpful. Other local bulletin-board systems are often a good source of public-domain programs and Apple expertise. And don't forget your local Apple user group—its members represent a storehouse of up-to-date information on active BBSs, telecommunications hardware and software, and any number of other topics and problems you'll encounter when you boot up your II and go on line.■

Tom Sherman is a free-lance journalist specializing in telecommunications and other computer-related topics. Write him at 224 South Chester Road, Swarthmore, PA 19081.

Product Information

Alfred Glossbrenner's Master Guide to CompuServe
by Alfred Glossbrenner, $19.95

Delphi: The Complete Guide
by Michael A. Banks, $21.95

Brady Books
Simon & Schuster
One Gulf & Western Plaza
New York, NY 10023
(212) 373-8500
$19.95 each

Reader Service Number 377

A.P.P.L.E. Crate BBS
Apple PugetSound Program Library Exchange
290 S.W. 43rd Street
Renton, WA 98055
Signup: (206) 251-0543 (modem)

Reader Service Number 378

American People/Link
350 North Clark Street
Suite 650
Chicago, IL 60610
Signup: (800) 524-0100
Signup: $15 (hourly discounts if you pay $10 monthly minimum; other discounts for weekends and daytime)
300 prime: $11.95
1200 prime: $12.95
2400 prime: $14.95
300/1200 non: $4.95
2400 non: $11.95
Monthly minimum: none

Reader Service Number 379

BYTE Information Exchange
One Phoenix Mill Lane
Peterborough, NH 03458
Signup: (800) 227-2983
Signup: $25
300/1200 prime: $18
300/1200 non: $11

Reader Service Number 380

CompuServe Information Service
5000 Arlington Centre Blvd.
P.O. Box 20212
Columbus, OH 43220
Signup: (800) 848-8199
Signup: $39.95
300 prime: $6.25 (rates assume access through CompuServe's own network; access through other networks increases costs by $9.75 per hour prime time, $1.75 per hour nonprime)
1200/2400 prime: $12.75
300 non: $6.25
1200/2400 non: $12.75
Monthly minimum: none

Reader Service Number 381

Delphi
General Videotex Corporation
3 Blackstone Street
Cambridge, MA 02139
Signup: (800) 544-4005
Signup: $49.95
300 prime: $17.40
1200 prime: $17.40
2400 prime: $17.40
300 non: $7.20
1200 non: $7.20
2400 non: $7.20
Monthly minimum: none

Reader Service Number 382

GEnie
GE Information Services
401 North Washington St.
Rockville, MD 20850
Signup: (800) 638-9636
Signup: $18
300/1200 prime: $35
2400 prime: $45
300/1200 non: $5
2400 non: $15
Monthly minimum: none

Reader Service Number 383

How to Get the Most Out of The Source
Charles Bowen
and David Peyton
Bantam Books
666 Fifth Avenue
New York, NY 10103
(212) 765-6500
$14.95

Reader Service Number 384

***inCider* BBS**
inCider magazine
80 Elm Street
Peterborough, NH 03458
Signup: (603) 924-9801 (modem)

Reader Service Number 399

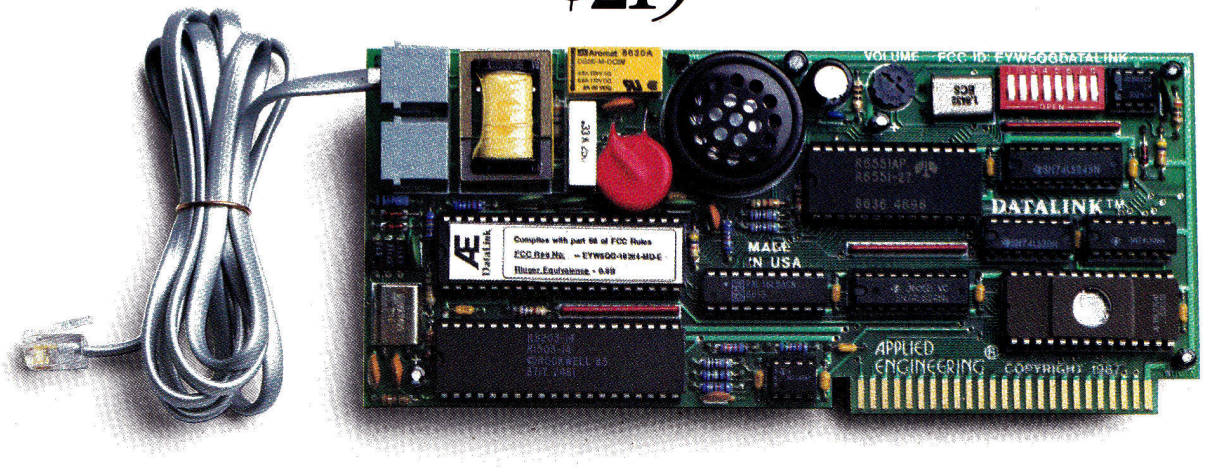
The Source
Source Telecomputing Corporation
1616 Anderson Road
McLean, VA 22102
Signup: (800) 336-3366
Signup: $49.95
300 prime: $21.60/$10 (reduced hourly rate for most features of Apple and other SIGs)
1200 prime: $25.80/$10.80
2400 prime: $27.60/$12
300 non: $8.40/$6
1200 non: $10.80/$7.80
2400 non: $15/$9
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Reader Service Number 385

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Sausalito, CA 94965
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Unlike the Smartmodem®, Datalink comes with its own easy-to-use communications software in ROM and on disk that supports macros, file transfers, on-line time display, data capture and datascope mode. The software also allows you to store hundreds of phone numbers for auto dialing and log on.

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The compact design allows Datalink to fit in any slot — including slots 1 and 2 of the IIGS with a cooling fan installed. Datalink operates at 1200 or 300 baud. Built-in diagnostics check for accuracy of data transmission, and Datalink lets you track the progress of calls either electronically or via an on-board speaker.

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Price	$219	$439
Max. transmission rate	1200 baud	1200 baud
Warranty period	5 years at no charge	2 years or 4 years for $75
Software included	YES	NO
Hayes AT command set	YES	YES
Help screens	YES	NO
On-board telephone jacks	YES	NO
Fits any slot (even with fan)	YES	NO

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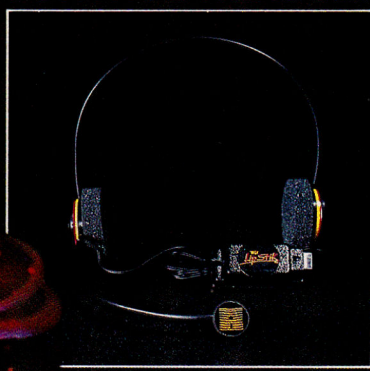
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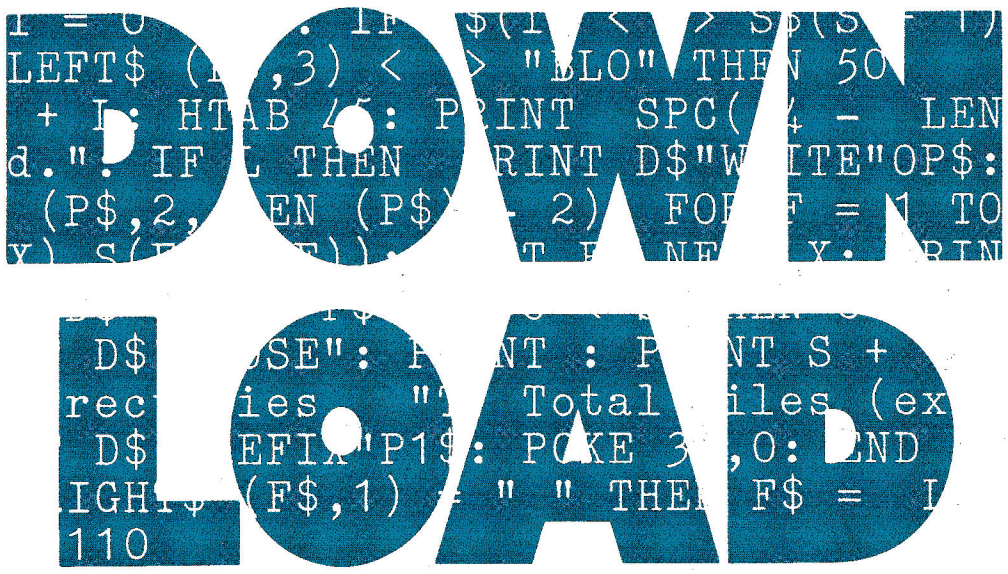
The **LipStik Plus** adds new life to games you've grown tired of playing. Using the headset gives you a greater feeling of power and control than a joystick alone. The first time you use it with your favorite game you'll know what we mean. You'll find yourself getting more absorbed in the action than you ever thought possible.

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Going on line opens up a whole new selection of accessible files—but how can you download them fast and ensure that they're error-free? inCider *explains the basics of file transfer and offers some advice to help you capture data quickly and efficiently.*

by Michael F. Montgomery

You finally did it: Seduced by the promise of using your Apple II and the phone lines to acces hard-to-find information and free software, you bought a modem, communications software, and maybe a serial-interface card. No matter what combination of add-ons you choose, you've made a significant investment in telecommunications.

With your modem and communications software ready to go, you call your local bulletin-board system (BBS) or commercial information service and stumble across a must-have program.

YOUR METER'S RUNNING

There the program sits, yours for the taking, but time is your enemy here. On a noncommercial bulletin board, you may have only a limited amount of time. Commercial boards are more than happy to charge you, so they don't usually restrict your connect time. In both cases, if you're calling long distance, you can add phone expenses, too.

After reviewing your communications program's sequence of commands for downloading, you decide to give the file transfer a try. Amazingly, you download the software smoothly and quickly, saving the program you wanted to disk.

After you hang up and go back to the operating system, you try to run the program, only to get an error message. You try different procedures, but nothing works.

WHAT WENT WRONG?

You've discovered through independent—and possibly expensive—"research" that there's no generally accepted standard for the transfer of Apple II files over the telephone lines. You can do it, though: we'll discuss various ways to upload and download, but there's no agreement on how to best accomplish the transfer. Gary Little's **Apple II Binary File Format** is a strong, efficient contender, but it's not a standard yet. (See News Line, March 1987, p. 12, for details.) We'll come back to this later.

The problem is that in the most-used Apple II operating systems, files have two parts: the data themselves, which make a program run, and the file *attributes*, which perform more of an administrative function. In ProDOS, file attributes are things such as filename, file size, file type, dates of creation and modification, and access and storage codes:

If you've downloaded a file that refuses to work, chances are you received the data, or the data were uploaded originally, with no problem. Important file attributes are missing, however.

In some operating systems, such as CP/M, attributes are stored as part of the file. In a system like ProDOS, however, those file attributes aren't stored as part of the file itself: They're contained on the physical disk in the disk directory, which resides in the disk's catalog-track zero.

So what happens when you try to run accurately transferred binary data without file attributes? Probably nothing. The data alone are useless. In addition, the XModem protocol commonly used by many terminal programs for file transfer defaults to a TEXT file type when it finds no other identification. So XModem always assigns TXT as the file type when it has no other information to go on.

Software developers recognize this problem, so most communications programs offer some proprietary, extended version of XModem protocol to take file attributes into account. These extended protocols work only when communicating with another Apple using the same software, one that uses the same method of encoding file attributes. That means their usefulness is limited. On larger systems, which are unlikely to use any kind of Apple operating system, that translates into no usefulness at all.

PUBLIC-DOMAIN SOLUTIONS

Before talking about solutions, remember that we're not talking about ASCII text files, or nonprogram data files, here. You can usually transfer a text file relatively unscathed.

Keep in mind, though, that the text file you've prepared so carefully with AppleWorks, saved in .AWP format, then uploaded to, say, GEnie, may sabotage another user unintentionally—say, someone using WordStar on a Kaypro computer who downloads your file and tries to read it. Control characters that are perfect wallflowers in AppleWorks may zap and boogie when they're out on the town in WordStar, and vice versa. So, when transferring text files, it's best to just stick with the plain-vanilla ASCII type.

What we *are* talking about, though, are the kinds of files everyone's usually interested in—BASic, BINary, and SYStem, the ones that are problems to transfer. If you see them, how do you get them? If you have them, how do you share them?

THE EXECUTIVE

The.Executive is a public-domain program written for ProDOS. It reads a file, translates its data and file attributes into lines of text, and stores the combined result in a new text file. You only have to EXEC it to restore the original file in a form your operating system can understand.

Since text files are relatively easy to upload or download, the advantage of The.Executive's approach is obvious. You can use the EXEC command to run a BASIC or binary program from a text file containing the program. And since the EXEC command is resident in the Apple operating system, you automatically have a way to transform the downloaded file into a usable program—no special software required.

Files prepared this way by The.Executive, files that can be EXECed, are usually denoted in listings with an *-.exe* suffix to distinguish them from other types of text files.

The.Executive is just one example of many programs that convert binary code to a text file, which your Apple system monitor can then use.

If you're thinking that there must be some catch to this method, you're right. That catch is the size of the transferable (and EXECutable) text file The.Executive creates: It's more than three times as large. As a result, so are your phone charges (if you're using long distance) and your connect charges (if you're using a commercial service). But at least you know the file will get there.

PROPACKER

Propacker, another public-domain ProDOS program, gets around some of these file-length problems by compressing all data (including the operating system) on any 5¼-inch floppy disk, then combining it into a single transmittable file. You can specify any name for this file, but Propacker version 3 assigns a prefix of *XX.<your name>* automatically.

The improved version 6 uses a suffix of *-.PP*; disks squeezed into a single file with this newer edition, however, aren't compatible with those prepared with version 3. Version 6 features improved squeezing, corrects some minor bugs, supports ProDOS pathnames, and works faster.

Of course, once you have one of these Propacked files in your possession, you must unpack it with Propacker. Version 3 also restricts you to two physical floppy drives, so a RAM disk or hard disk is useless.

Probably the worst problem with this program is the sheer volume of the packed files, which can make them quite time-consuming to send and receive.

Depending on the number and types of files on the original disk, you can estimate that Propacker can shrink the disk to anywhere between 55 percent and 70 percent of its original size. Sure, that packed file is big, but consider the amount of information that even one full floppy disk, batched into one squeezed file, can represent. And since Propacker doesn't care about the native operating system of the original disk, it's ideal for DOS 3.3 or Pascal.

You can find other disk squeezers. If you use one of them, it's important to identify the resulting file in the filename in some way that informs other users so that they know how to prepare it for use. Different BBSs use different methods, and you'll want to stick with whatever one it recognizes. What we're after here is a standard, remember?

BINARY II PROTOCOL

Two public-domain programs adhere to Gary Little's Binary II protocol: **Binary.up** and **Binary.dwn**. These two programs encode and decode file attributes in a 128-byte file header. Binary.up may need to add some material to the data portion of the file to make it add up to a multiple of 128 bytes, but at worst the Binary II form of a file won't be more than 255 bytes longer than the original.

Give files you want to upload with Binary.up a suffix of *-.bny*, so that anyone else who wants to download it knows about its special form and the need to download it with Binary.dwn.

Simple, right? Unlike The.Executive, there's no big increase in file size and resulting transfer time. Unlike Propacker, Binary II programs aren't disk-based and don't suffer from the inherent limitations of disk-based programs.

A Binary II file can also include multiple standard files, although Binary.up in its current form won't handle underlying subdirectories. Also, these public-domain programs operate only with ProDOS at this time.

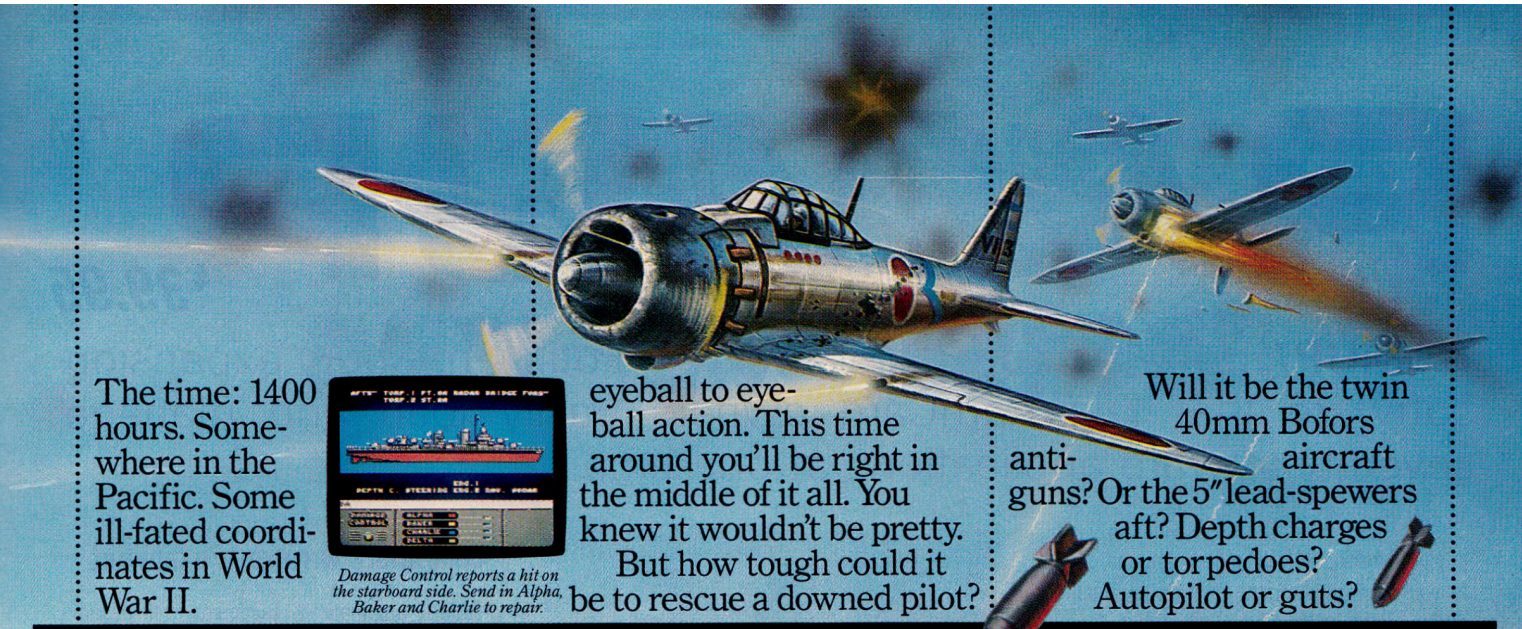
Utility programs, however, typically evolve (or are adapted by other applications programs) to become more sophisticated and easier to use. In fact, there's already a Binary.dwn version 1.5; the major change is that the program now supports ProDOS pathnames.

HOW DO I GET THEM?

The programs discussed here are available on many BBSs. (See "Striking Gold in Public-Domain Software," February 1987, p. 40, and "Public Domain's Greatest Hits," September 1985, p. 22, for a discussion of other sources.) For simplicity, you may want to search out the *.exe* form of each program to start with. That way you won't need any special software to decode it into a usable program. Be sure to download the accompanying documentation, too. It will give you more in-depth information on how to use the program and how it works.

After that, test-drive the programs and play with them. Then use the method that suits you best. Armed with this information on methods of file transfer, you'll save yourself money and frustration.■

Michael F. Montgomery is a free-lance writer specializing in telecommunications and other computer-related topics. Contact him at 104 West 35th Street, Farmington, NM 87401.



The time: 1400 hours. Somewhere in the Pacific. Some ill-fated coordinates in World War II.

Damage Control reports a hit on the starboard side. Send in Alpha, Baker and Charlie to repair.

eyeball to eyeball action. This time around you'll be right in the middle of it all. You knew it wouldn't be pretty. But how tough could it be to rescue a downed pilot?

Will it be the twin 40mm Bofors anti-aircraft guns? Or the 5" lead-spewers aft? Depth charges or torpedoes? Autopilot or guts?

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You've embarked on the first simulation that actually combines the intricate, large-scale strategy of wargaming with the intensity of furious,

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Or so you thought. But now look what you've got. Thirteen fully-operational, ear-bursting battle stations to worry about, all armed to the gills. Not to mention radar. Navigation. Sonar.

And half the Japanese fleet crawling up your spine.

Time to make some tactical decisions.

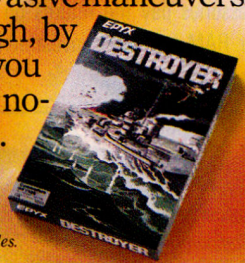
Any choice could be your last, so make it good.

Suddenly, you hear the ominous rumble of incoming Zeroes. You fire, and send one plummeting to the sea, trailing a plume of smoke.

On instinct, you instruct the bridge to commence evasive maneuvers.

Even though, by experience, you know there's nowhere to run.

YOU'VE ALWAYS DREAMED OF BEAUTIFUL MODELS. Now you can pick up an entire assault fleet, including a replica Fletcher Class Destroyer, from Revell. Or win an authentic scrambled eggs *flight deck cap. Sweepstakes details are in every box, or write for an entry coupon. No purchase necessary. Sweepstakes ends June 15, 1987. Official rules are available at participating dealers.*



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RAMUP/ram-əp/noun: The latest RAM utility memory expansion software that lets RamCard owners easily load and manage several software applications at one time.

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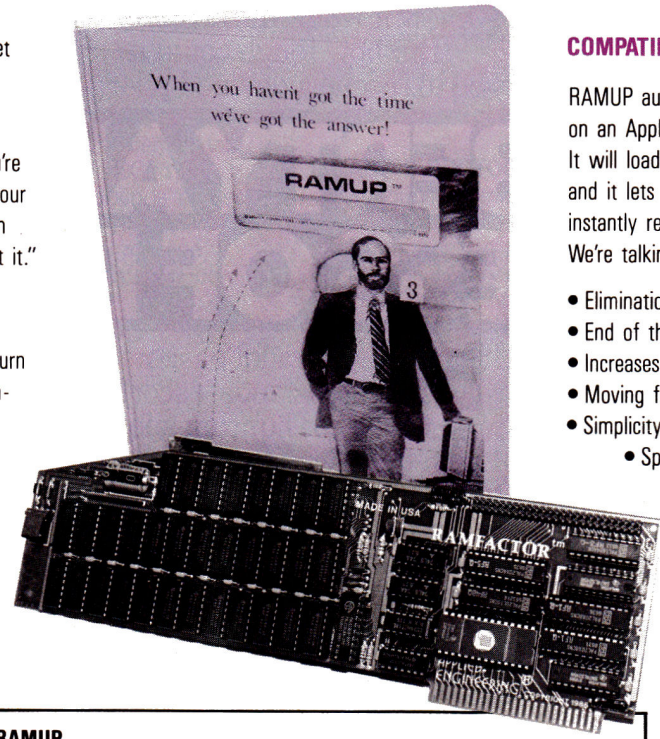
In even plainer English, RAMUP means you're the boss. With RAMUP, you'll never hear your computer say "Just a minute" to you. With RAMUP, it's either "Right now" or "You got it."

INSTANT ACCESS

You can stop disk swapping. RAMUP can turn Control-Open-Apple-Reset into Control-Open-Apple-ACCESS. RAMUP lets you boot from your RamCard and it allows you to flip — at will — from one program to another. In a flash.

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Talk about friendly! You don't need to know about programming or even about pathnames to use RamCards. These powerful accessories pay the returns on your RAM hardware investment.



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RAMUP automatically configures itself to run on an Apple IIe, IIc, IIGS and Laser computers. It will load just about any ProDOS software, and it lets you boot other software then instantly return to programs on your RamCard. We're talking about these major advantages:

- Elimination of disk access
- End of the floppy shuffle
- Increases productivity
- Moving from program to program — at will
- Simplicity
- Speed
- INSTANT ACCESS!

RAMUP $39.95

RAMUP Time Trial	With Ramup	Without
AppleWorks to Sensible Speller	2.6 Sec.	30 Sec.
Sensible Speller to Grammer	1.3 Sec.	29 Sec.
Power on to AppleWorks	2.8 Sec.	22 Sec. *
Control A- Reset to AppleWorks	2.9 Sec.	28 Sec. **

*Requires Battery backup option
**Requires Ramfactor (or apple [slot] compatible) Memory Expansion

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Item		Price	Item	Price
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Ramfactor	1mg	$278	Transwarp	$208
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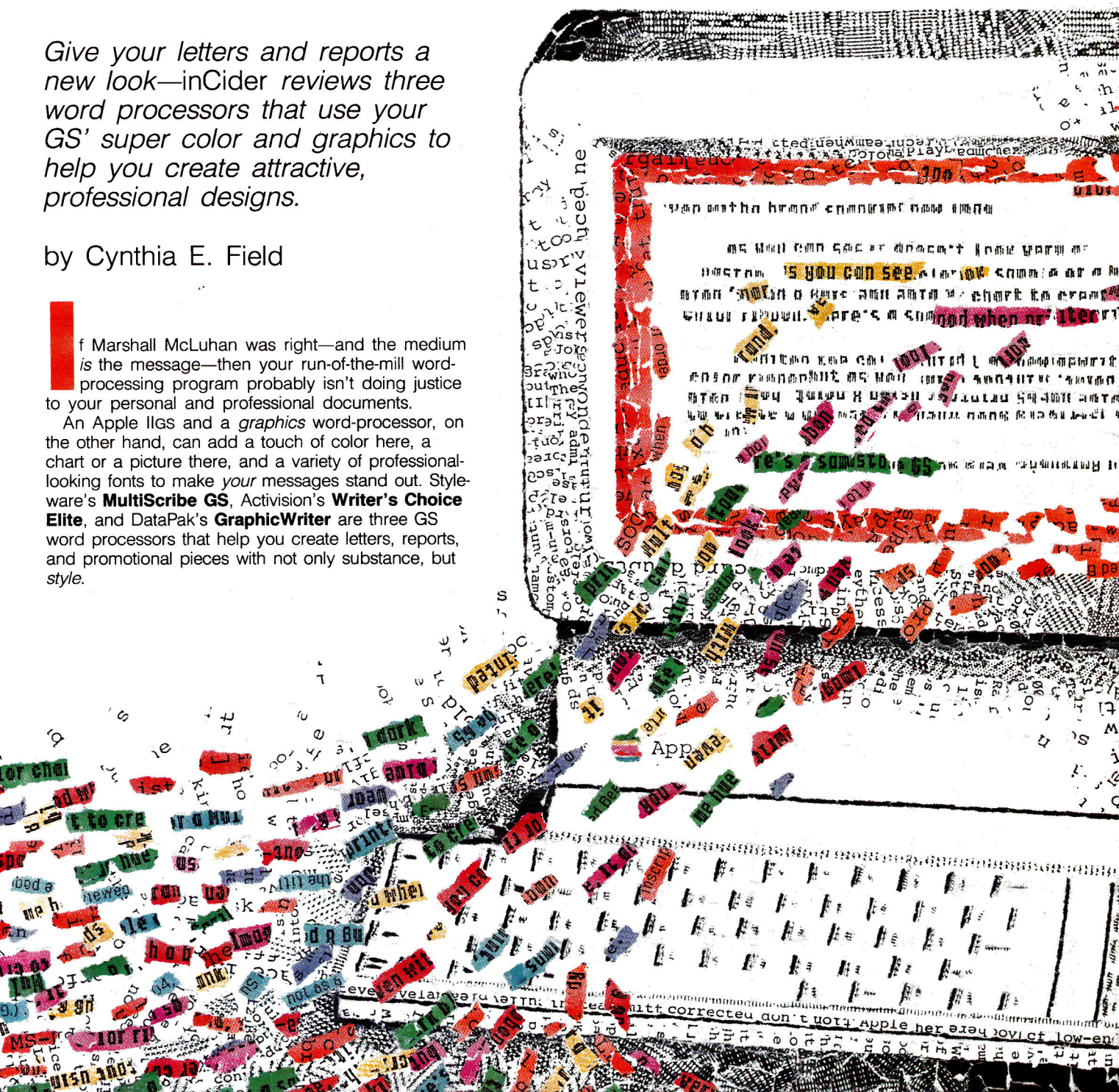
COLOR MY WORDS

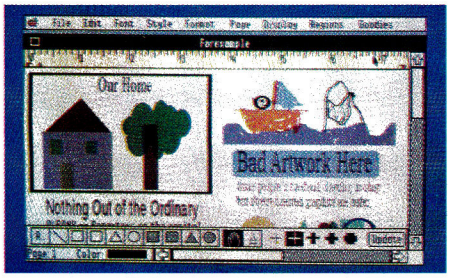
*Give your letters and reports a new look—*inCider *reviews three word processors that use your GS' super color and graphics to help you create attractive, professional designs.*

by Cynthia E. Field

If Marshall McLuhan was right—and the medium *is* the message—then your run-of-the-mill word-processing program probably isn't doing justice to your personal and professional documents.

An Apple IIGS and a *graphics* word-processor, on the other hand, can add a touch of color here, a chart or a picture there, and a variety of professional-looking fonts to make *your* messages stand out. Styleware's **MultiScribe GS**, Activision's **Writer's Choice Elite**, and DataPak's **GraphicWriter** are three GS word processors that help you create letters, reports, and promotional pieces with not only substance, but *style*.





GraphicWriter 1.1 emphasizes page layout and drawing tools, but is awkward to use.

THE MAC INTERFACE—AND MORE

MultiScribe GS, Writer's Choice Elite, and GraphicWriter share that now-familiar look and feel of Macintosh software—but with a colorful twist. All feature a menu bar; pull-down menus; mouse control; and dialog, close, and scroll boxes.

What's more, each program's colorful screens are particularly striking on an RGB monitor. (For more on RGB technology, see "The Cadillac of Monitors," October 1987, p. 63.) MultiScribe GS and GraphicWriter both sport yellow formatting rulers, for instance; Writer's Choice Elite has an attractive blue border. With crisp, clear, easy-on-your-eyes menus and dialog boxes, each of these three programs is a joy to work with.

These initial versions of MultiScribe and Writer's Choice Elite, however, contain some pesky bugs that nearly clouded my appreciation of their features. Screen freeze-ups, "fatal" system errors, and other surprises frustrated some of my creative efforts. Seeing a program quit just as your work is nearing completion is like finding out there's no Santa Claus.

IN LIVING COLOR

These gripes aside, one of the strongest features of the three graphics word processors reviewed here is their what-you-see-is-what-you-get (WYSIWYG) approach to word-processing enhancement. Each program updates your documents readily to show the effects of style and formatting changes.

Switch from one font to another, and your correspondence displays the new typestyle. Change point size, emphasis (underlining, boldfacing), or color, and see the results almost immediately. You may wonder how you tolerated embedded commands so long!

While these three graphics word processors share such similarities, and many others, they're nevertheless quite distinct. A rundown of their various features will help you decide on the one that's right for you.

MULTISCRIBE GS

MultiScribe GS gives you the most bang for your buck. In a word, it's versatile. And it's the only graphics word processor of the three reviewed here that isn't copy-protected.

The program's ten fonts are diverse, ranging from the staid to the calligraphic. You can also adjust point size easily with its "plus or minus one point" feature. The program offers a multitude of style enhancements, too, including boldface, underlining, italics, shadowing, outlining, superscripts, and subscripts, which you can combine for special effects.

MultiScribe GS rulers show markers and icons representing the most common global and local formatting features. With mouse clicks and drags, you can center text, justify a whole page, triple-space it, and reset margins and tabs.

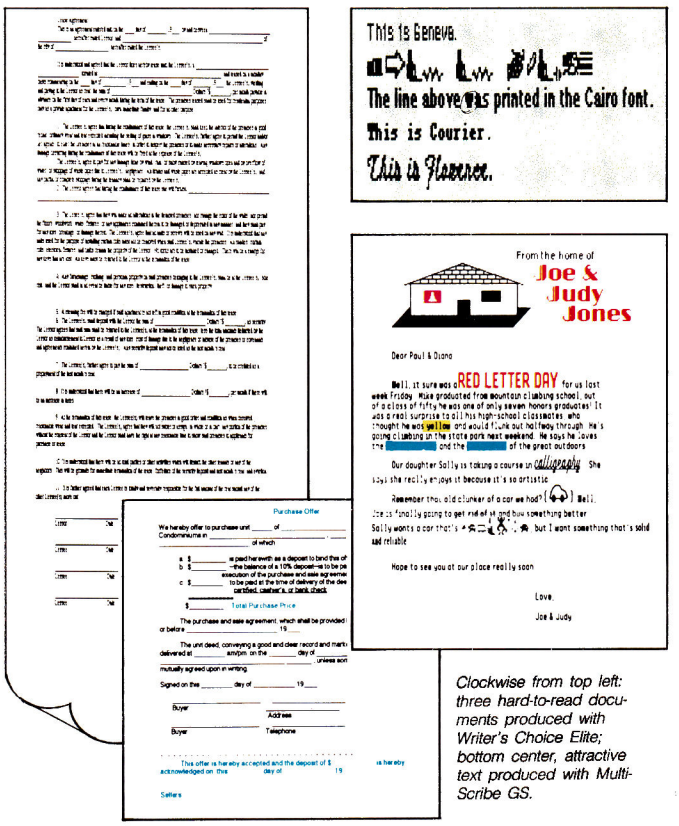
Like the other two programs featured here, MultiScribe GS offers "shortcuts"—alternative keyboard commands using the open-apple key and another key, usually mnemonic. Many of these key commands may remind you of AppleWorks: Open apple-S saves and Open apple-P prints, for instance. MultiScribe GS includes AppleWorks' vertical ruler (Open apple-0 through -9) to move quickly within your document. In AppleWorks fashion, MultiScribe GS lets you to keep more than one document on your desktop.

Styleware's program can display and print a document in two pure colors or up to 15 *dithered* hues (mixing pixels of different pure colors—placing them side by side—to create an illusion). The color menu hides MultiScribe GS' default pull-down palette. Using RGB and HSI (hue, saturation, intensity) "sliders," you can mix a custom palette from the GS' 4096 color choices.

There's a downside to all this power, though: weak color-printing technology. Most dithered colors look terrible printed on the ImageWriter II. (Sometimes they look blurred or spotty on screen, too.)

Using pure colors to display and print text yields better-looking printouts. By experimenting I discovered that certain dithered shades work fine, too, if they're intense enough. Whether working with pure or dithered colors, you'll achieve the most attractive results in boldface, which encourages your ImageWriter II to pack as many colored dots together as possible. (See the accompanying sidebar for the results of a speed test of these three word processors.)

Beyond its color-text capabilities, MultiScribe GS, like the other two graphics word processors discussed here, can integrate pictures into printed documents. A feature like this makes advertisements, flyers, brochures, and even newsletters possible.



Clockwise from top left: three hard-to-read documents produced with Writer's Choice Elite; bottom center, attractive text produced with MultiScribe GS.

But there are problems. *Bit-mapped* pictures (images composed of a grid of dots, each corresponding to its own memory location), such as the ones you create with a paint program, consume inordinate amounts of memory. According to David Macdonald of Styleware, "You can't load an entire bit-mapped picture into a MultiScribe GS document on a 512K IIGS, whereas you can load several full pictures into a document on a 768K IIGS." To integrate paintings with text, then, you may need to increase your GS' memory.

Another inconvenience is that MultiScribe GS uses a different palette from those of certain paint programs, such as **Paintworks Plus**, **DeluxePaint II**, and **816/Paint**. Unless you take pains to use the same colors as in the MultiScribe GS palette, your pictures may not look the way you'd hoped. Worst of all, bit-mapped pictures printed in color on the ImageWriter II usually look awful—no matter what graphics program you use.

For better memory management, screen appearance, and printouts, Styleware recommends you use *object-oriented* graphics—drawing programs, such as Styleware's **TopDraw** or Activision's **Draw Plus**, that help you create illustrations, drawings, plans, flowcharts, and graphs.

Object-oriented graphics is "much more memory-efficient," according to Macdonald. Images created with drawing software are composed of layers of basic shapes, stored as assembly-language programs that reproduce the process of creating those images and take up less memory than a bit map. (For more information on graphics programs and technology, see "Presenting Business Graphics," March 1987, p. 42; "The 'G' Stands for Graphics," October 1987, p. 46; and "IIe/IIc Graphics," October 1987, p. 55.)

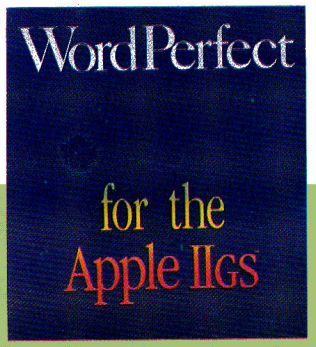
Although it's not a full-blown object-oriented graphics program, MultiScribe GS offers certain basic drawing tools, too—hollow and filled shapes (circles, ovals, and rectangles) and various pen sizes.

Whether you intend to integrate bit-mapped or object-oriented graphics with text, or just embellish text with color and different fonts, take a close look at MultiScribe GS.

WRITER'S CHOICE ELITE

Activision's program takes a unique approach to displaying and printing color text. With Writer's Choice Elite you don't have to color the words themselves—you color the background instead. Rather than type a title in blue letters, for instance, you'd type it in black and select "background in blue" from the program's color menu.

I don't care for the results. First, you can't choose from 4096 colors: You have only green, red, yellow, blue, black, and white (the default) backgrounds. Close examination reveals that these screens look like slips of graph paper.



WordPerfect 2.0

What happens when you tamper with perfection? WordPerfect Corporation has dared to do it—in hopes that WordPerfect 2.0 can give GS owners "the best of both worlds," according to Dale Taylor, WordPerfect's manager of Apple II development.

Like WordPerfect 1.1 for the IIe, IIc, and GS, this version (free to registered owners of version 1.1) offers nearly every conceivable word-processing feature—including footnotes, hyphen help, macros, spelling checker, mail merge, support for more than 200 printers, even protection against widows and orphans (one-line segments of paragraphs that end up "alone" at the end or beginning of a page).

But 2.0 offers even more: It handles end notes and "floating" footnotes and includes a 10,000-entry thesaurus for those moments when you're at a loss for words.

But most important of all, WordPerfect 2.0 works the way most GS users think it should. The "old" WordPerfect was strictly a clean-screen word processor. (A keyboard template reminded you about apple-key commands.) WordPerfect 2.0, on the other hand, sports the Mac interface.

Almost. WordPerfect 2.0 has only three pull-down menus: "Apple," "Edit" (cut, copy, append, paste, and show clipboard), and "Commands." Pulling down this last menu opens up a long window (the "command interface") through which you scroll to select the program option (from the 125 or so available) you want.

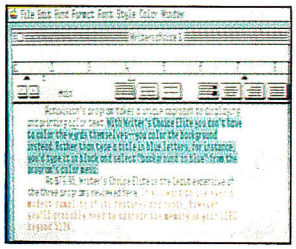
Since mousing around long command windows isn't my idea of powerful word processing, I much prefer the alternative (and user-definable) keyboard commands built into WordPerfect 2.0. Instead of scrolling with the mouse through the Command Interface, you can simply press Control-B to move quickly to the commands beginning with the letter B. Or you can press Open apple-L to go directly to the "list files" command. Although that's faster than the mouse, there's a hitch: WordPerfect seems to have regressed to the days when users had to memorize commands—without benefit of even a keyboard template. At press time, however, Dale Jaylor at WordPerfect told *inCider* that the lastest version of the package, scheduled for release in November, would include a true Mac-like interface, with full menu bar across the top of the screen, in addition to the interface described here.

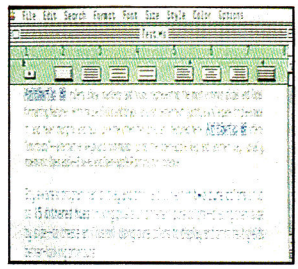
Regardless of my personal misgivings, WordPerfect 2.0 stands apart from the other GS graphics word processors reviewed in the accompanying article. According to Taylor, WordPerfect's authors wrote special "output to screen" code, so the program responds quickly to turbo typing and gives you high-speed editing when you need it.

WordPerfect 2.0 lacks fancy fonts, but it's graphics-oriented in other ways. Using the program's RGB sliders, you can alter screen color to suit your preferences. How does hot-pink text on a baby-blue background with boldface text in gold strike you?

If you're looking for a powerful word processor that incorporates some of the GS' special features, consider WordPerfect 2.0. But don't be surprised if you end up parking your mouse and longing for a keyboard template. Maybe you shouldn't tamper with perfection after all.□

—C.F.





Left, screen from Writer's Choice Elite; right, MultiScribe GS.

When printed, even without boldface, Writer's Choice Elite fonts are too dark and heavy for my taste. This characteristic sometimes imparts a whimsical-looking appearance; at other times, it makes the text virtually unreadable.

Writer's Choice Elite rulers aren't in color, so they don't stand out well. When you want to add a ruler, you select "change ruler" from the format menu, a move that doesn't make sense to me, at least not semantically. And Writer's Choice Elite includes two kinds of rulers: "main" and "local." The latter type treats paragraphs as individual units.

On the plus side, Writer's Choice Elite offers a few more fonts and document windows than MultiScribe GS. For emphasis, you can cross out text, in black, white, or red.

The program works amicably with PaintWorks Plus via its "copy image" command on the editing menu. Writer's Choice Elite treats pictures like paragraphs; you can place text above or below a picture, but not beside it.

With my 512K GS, Writer's Choice Elite reminded me often that "memory is becoming full" or "no more processing is allowed"—even if I had only a couple dozen words on screen. The problem, it seems, is this: The average Writer's Choice Elite font uses 30K; a Paintworks Plus picture can swallow up 50K more. If you consider that after the program loads, only 93,000 characters (about 93K) of memory are left, you can see that trying to change fonts even once can create an overload.

To make matters worse, whenever I approached the memory limit, the program forced me to quit and reboot—even after closing or saving a document. Writer's Choice Elite also has the dubious distinction of taking the longest time of these programs to load—more than two minutes from the GS Program Launcher, versus a little over a minute for MultiScribe GS and only 35 seconds for GraphicWriter.

At $79.95, Writer's Choice Elite is the least expensive of the three programs reviewed here. If you want to use even a modest sampling of its features and fonts, however, you'll probably need to upgrade the memory in your IIGS beyond 512K. The program's features—unprofessional-looking background color and unsightly fonts—don't justify the additional expense.

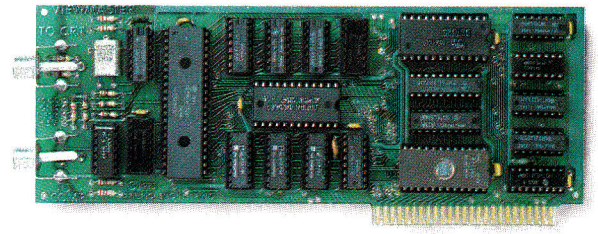
GRAPHICWRITER

According to Gary Crandall, author of GraphicWriter, this program, first and foremost, isn't a word processor. For instance, it lacks certain ordinary word-processing features, such as search and replace and superscripts and subscripts. GraphicWriter emphasizes page layout instead, with such features as horizontal scrolling (on a 15-inch page) and bordered or borderless "regions."

Using GraphicWriter's "hand" cursor, you can move its regions (with text, pictures, or a combination of the two) freely around the page. A "show full page" option helps you visualize the total layout.

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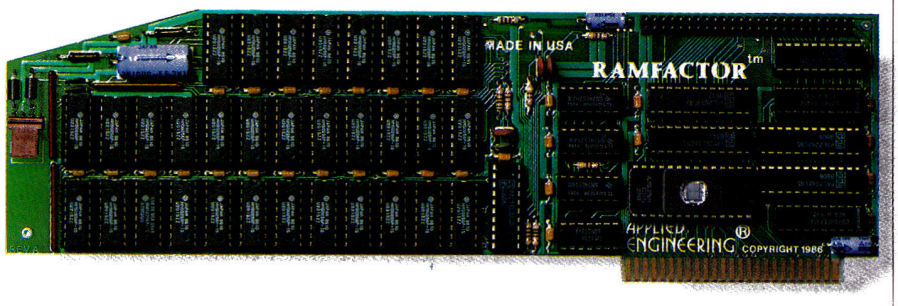
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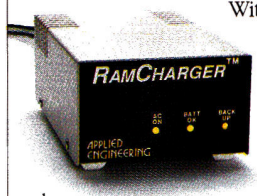
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There are other slot 1-7 cards that give AppleWorks a larger desktop, but that's the end of their story. But RamFactor is the only slot 1-7 card that increases AppleWorks internal memory limits, increasing the maximum number of records in the database and lines permitted in the word processor, and RamFactor is the only standard slot card that will automatically load all of AppleWorks into RAM dramatically increasing speed and eliminating the time required to access the program disk, it will even display the time and date on the AppleWorks screen with any ProDos clock. RamFactor will automatically segment large files so they can be saved on 5¼", 3½", and hard disks. All this performance is available on the Apple II+, IIe, Franklin, or Laser 128 when used with an 80 column display. RamFactor, no other standard slot card comes close to enhancing AppleWorks so much.

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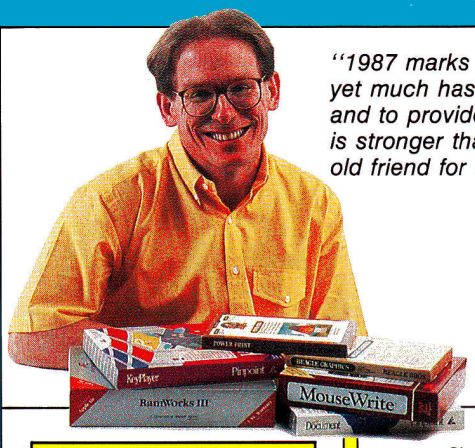
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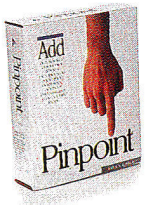
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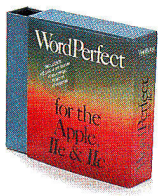
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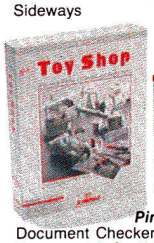
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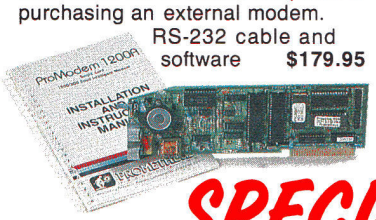
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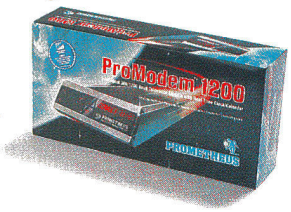
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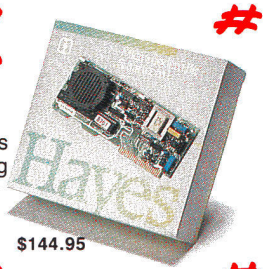


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Like MultiScribe, GraphicWriter offers drawing tools to create object-oriented graphics within the program. GraphicWriter seems to be the most adept of the three programs at importing Paintworks Plus bit-mapped pictures in their native ("original" Paintworks Plus) colors without distorting their overall shape, either.

Although GraphicWriter was the only program among the three that didn't crash, it nevertheless suffers from some awkward features. Because the program's three fonts are sometimes unreadable, you need the "screen stretched" feature to enlarge them. The program couldn't keep up with my speedy typing, and, to my dismay, continued to erase characters after I'd taken my finger off the delete key.

DataPak promises improvements for version 2.0, which at press time was due for release in mid-August. According to Crandall, this new edition is "a virtual desktop-publishing program." DataPak has fortified the word processor and added some enhanced design features, including multiple columns, more fonts, and custom font sizing.

GraphicWriter 1.1 supports the ImageWriter II, but version 2.0 is expected to support the Apple LaserWriter and, perhaps, a color ink-jet printer from Xerox, as well. (MultiScribe and Writer's Choice Elite support both the ImageWriter and LaserWriter.)

DON'T DUMP APPLEWORKS

None of the three programs reviewed here is "full-featured"—even in the somewhat limited sense of the AppleWorks word processor. You still need AppleWorks or an equally capable program to perform mail merge, print mailing labels, or write your epic novel. (See the accompanying sidebar for a preview of WordPerfect 2.0, likely to be the most powerful word-processing program available for the Apple II family.)

If you've already invested in Apple Writer, AppleWorks, or another word-processing program, it needn't sit idle. MultiScribe, Writer's Choice Elite, and GraphicWriter can import ASCII files; MultiScribe even reads AppleWorks word-processor files directly. You can prepare your initial draft faster and more easily with a standard word processor, then boot up a graphics word processor to dress up the final version with fonts and color.

If you haven't yet decided on a word processor for your GS and the idea of creating more attractive text appeals to you, take a look at one of the three programs discussed here. If you use AppleWorks or another word processor, think of a graphics word processor as a communications enhancement—a program that can make your writing more presentable through careful use of alternative fonts, color text, clip art, and custom illustrations.■

Speed It Up

Printing graphics takes a long time, no matter which program you use. In an informal speed test of the three word processors reviewed here (identical one-page documents in one font—12-point Helvetica—with bold, pure color in selected areas and some underlining), Writer's Choice Elite came in first, at six minutes. MultiScribe took second place, at nine minutes; GraphicWriter was third, at 11 minutes. My daisywheel printer seems supersonic in comparison; with a good design, though, the outcome is often well worth the wait.

If you print single-color documents exclusively, consider bypassing these word processors altogether and purchasing Beagle Bros' **SuperFonts**—an AppleWorks-enhancement program with a number of typefaces that support a variety of printers. (For more on color printing, see "Add a Splash of Color" and "A Guide to Color Printers," December 1986, pp. 66 and 74, respectively.)□

—C.F.

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

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Writer's Choice Elite
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Baudville
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(616) 957-3036
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SuperFonts
Beagle Bros
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San Diego, CA 92110
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$79.95
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DataPak Software
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Suite 507
Sherman Oaks, CA 91423
(818) 905-6419
$149.95
Reader Service Number 373

MultiScribe GS 2.0
TopDraw
Styleware Inc.
5250 Gulfton
Suite 2E
Houston, TX 77081
(713) 668-1360
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WordPerfect 1.1
WordPerfect 2.0
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288 West Center Street
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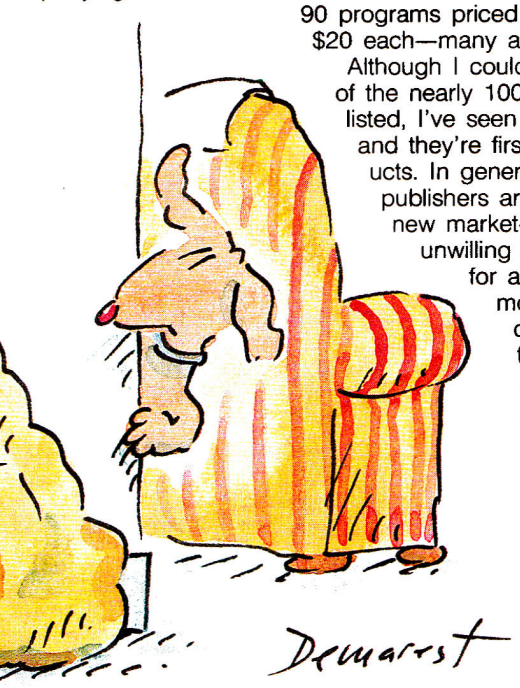
STOCKING STUFFERS

From ABCs to wine tasting, Apple II software offers an exciting choice of gift items to brighten your holidays.

by Cynthia E. Field

You can be a popular Santa with your family and friends this holiday season. How? Instead of ski caps or candy, why not stuff your favorite Apple fan's Christmas stocking with software from some of the industry's major publishers?

I'm not talking about AppleWorks at $250—no, we're looking at less extravagant presents here. The accompanying **Table** and Product Information box list more than 90 programs priced at less than $20 each—many at only $9.95. Although I couldn't review all of the nearly 100 programs listed, I've seen a fair sample, and they're first-quality products. In general, it seems publishers are addressing a new market—those of us unwilling to spend $40 for any but the most sophisticated educational and entertainment programs.



That's a smart move—and their new tack could make you look smart this holiday season. At these prices, you can afford to lengthen your gift list—without straining your budget.

Use the **Table** and the Product Information box as you would any gift catalogue. Scan the second column, listing these value-priced programs by suggested age range; browse through the titles available. Does something pique your interest? Call the publisher for more information—most have toll-free numbers.

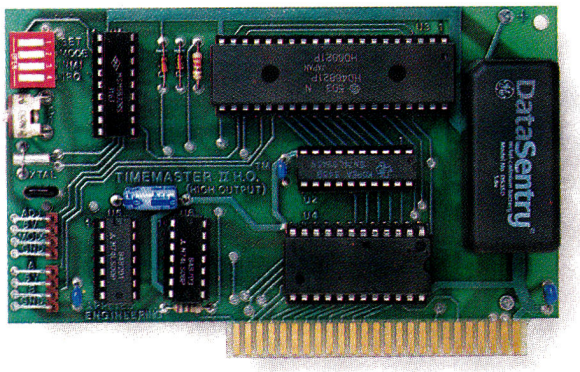
Here are capsule reviews of programs I recommend enthusiastically—programs I'd like to give to my friends and relatives—or find in my stocking on Christmas morning.

FOR 3- TO 6-YEAR-OLDS: ELECTRIC CRAYON AND SESAME STREET CRAYON

Electric Crayon and its Muppet counterpart, **Sesame Street Crayon**, are creative, yet practical, electronic coloring books. Each series consists of three programs: Electric Crayon includes **ABCs**, **Fun on the Farm**, and **This Land Is Your Land**; the newly released Sesame Street titles are **Letters for You**, **Opposites Attract**, and **Numbers Count**. Each program features pictures a child can paint using the program's 16-color palette and a mouse, joystick, KoalaPad, or keyboard.

A calendar-printing feature makes these coloring books unique. Your child can print a monthly calendar for December, say, featuring color pictures of ice cream cones (brrrrr!) or sailboats (hello, Bermuda!), for example. The program supports color printing on the ImageWriter II and Apple Scribe.

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Above top, This Land Is Your Land; bottom, Sesame Street Crayon; above right, Creature Creator.

FOR 4- TO 8-YEAR-OLDS: CREATURE CREATOR AND TINK TONK

According to Thomas Paderna of Britannica Software, publisher of the Designware line, **Creature Creator** was "designed and written by the author of Spinnaker Software's best-selling [program] Facemaker." And the similarity shows!

Creature Creator lets your child build monsters and other indescribable beasts by assembling predrawn body parts on screen. Using simple one-letter mnemonic commands, such as R (roar), T (turn head), G (grab), W (wave), H (hop), and S (stomp), he or she then choreographs a dance sequence. A Monster Match then tests your child's observation and programming skills: He or she must analyze a dancing monster's motions and write the corresponding letter sequence—almost like a simple program—to make a copycat monster.

If the little elf on your list could benefit from early math, spelling, or thinking-skills software, consider the **Tink Tonk** series from Mindscape. I haven't tested the programs listed here, but, based on others in the series I've seen, I can vouch for the software's cast of characters, including



Tink, the leader of the pack; Tonk, Tink's best friend; Tuk, the gardener; and Tinka, the Tonkerball team coach. This crew makes learning traditional, preschool skills fun for any tot.

FOR 5- TO 10-YEAR-OLDS: THE NOTABLE PHANTOM

This creativity program from Designware teaches music theory playfully. The **Notable Phantom** package includes a durable plastic overlay similar to a piano keyboard, with white and black "ivories" comprising one and a half octaves. The keyboard fits the Apple IIe, but clearly marked dashed lines let you cut it to fit the II Plus or IIc.

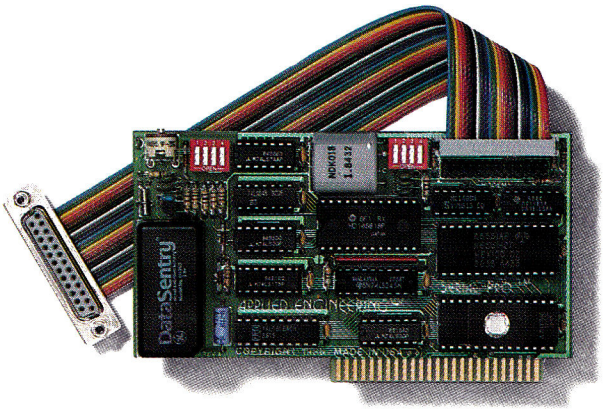
The program's name refers to the creepy-crawly creatures who teach music theory. Ghosts put notes on the musical staff; bats stay on screen until the child plays the correct note. Spiders teach the names of notes, and the Phantom involves the child in ear-training exercises. Besides learning theory, the child can play the songs included on disk or compose and save his or her own.

FOR 6- TO 14-YEAR OLDS: WORD MUNCHERS

Two of my all-time favorite programs are MECC's **Word Munchers** (phonics) and **Number Munchers** (math). These games consist of a matrix of either words or numbers (or mathematical expressions). Similar to Pac Man's scenario, the goal of this phonics program is to move your Muncher around a Bingo-card-like game board and gulp any word that includes a sound matching the target sound (such as the "ou" in mouse). Not as easy as you might think—you have to be ever-vigilant to elude the Troggles. They follow Munchers around—and sometimes eat them.

Ordinarily these programs are priced at $29.95 ($34.95 for the 3½-inch disk). If you join the MECC Home Software Club and pay the $75 one-time initiation fee, though, you can select any four products free from MECC's Home Software Library.

Serial Pro®
The intelligent multifunction card from Applied Engineering.



Serial Pro is a powerful multifunction card for the Apple IIe, II+, IIGs and compatible computers. Serial Pro combines a powerful serial port for interfacing to a printer, modem or other serial device, with a full function clock/calendar. Serial Pro's serial port is compatible with virtually all letter quality and dot matrix printers, including Apple's Imagewriter and Imagewriter II, and can communicate with the fastest external modems at baud rates from 50 to 19,200.

Set up is easy, because unlike other cards, there are no switches to program serial parameters or disks to use. Serial Pro has a built-in setup screen that allows all parameters to be set. And on-screen help that makes it super-easy. An on-board battery stores your selections for over 20 years, but you can change them at any time. Serial Pro is the perfect upgrade for Super Serial card owners looking for more performance or a built-in clock.

Serial Port Features • Fully Super Serial Card compatible but more versatile and easier to use • Compatible with printers • Compatible with modems • Prints graphics to printer (without software) in normal mode, 90° rotation, double size, side by side, and black/white inversion • Variable word length, number of stop bits and parity selection • Crystal controlled circuits are used to provide ultra accurate baud rates.

Clock Calendar Features • ProDos, DOS and AppleWorks compatible. Displays time and date on the AppleWorks screen • Automatically time and date stamps AppleWorks files • 20 year auto recharging nickel-cadmium battery • Realtime interrupts • Built-in on screen time and date settings (no software needed) • Does not use phantom slots.

Serial Pro is perfect for Apple IIe, II+, IIGs or compatible owners in need of a serial port or clock/calendar or both. But unlike other multifunction cards on the market, Serial Pro does not use phantom slots, so all the slots in your computer are useable.

Serial Pro comes complete with manual, cable and instructions for connecting to all the leading printers and modems.

Serial Pro **$159**

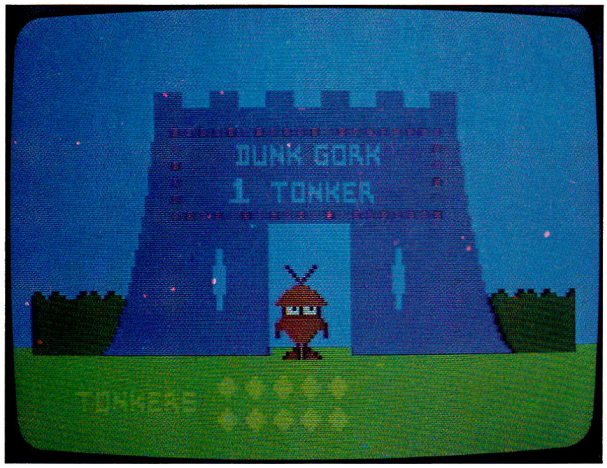
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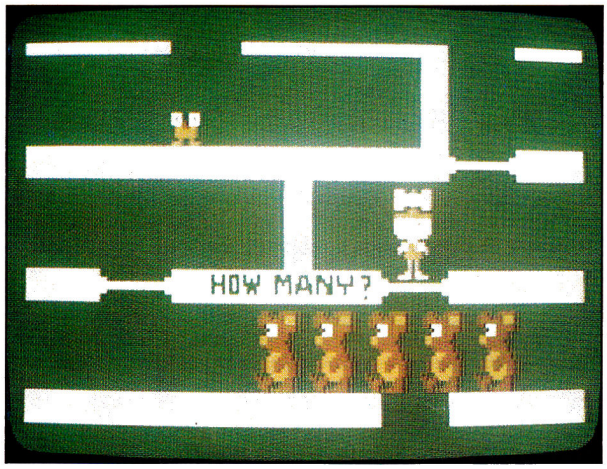
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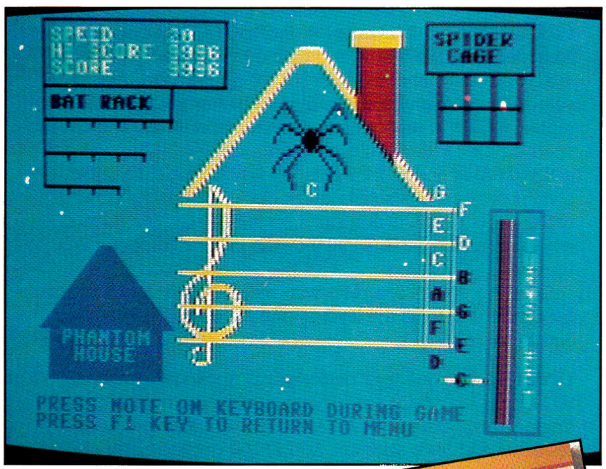
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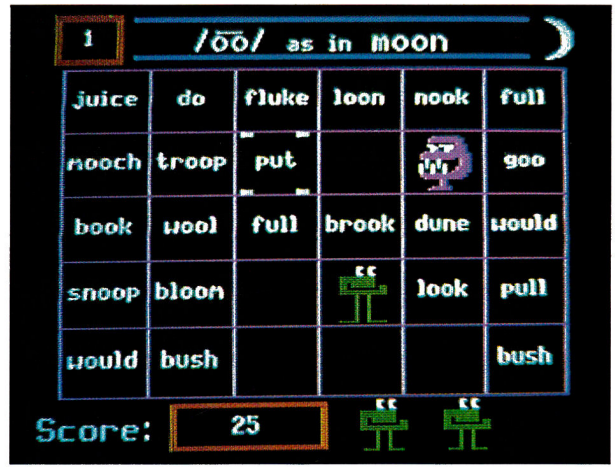


Top, Tink's Subtraction Fair; bottom, Tinka's Mazes.



Screen from Notable Phantom (Designware).





MECC's Word Munchers teaches phonics to the 6- to 14-year-old set.

FOR AGES 8 TO ADULT:
THE SPY'S ADVENTURES

These geography games challenge you to search for stolen jewels, pay off informers, decipher clues, and track down the elusive Dr. X. While in pursuit, you learn about a variety of cities, states, and nations. Designed and published by Polarware, **The Spy's Adventures** feature excellent color graphics.

Working alone or with a collaborator (Spy Network) or competitor (Spy Against Spy), your favorite spy catcher learns the geography of a continent. Any one of The Spy's Adventures makes a terrific family gift—especially if you're planning a trip to another country. What a great way to blend social studies, travel, and sleuthing!

FOR AGES 12 TO ADULT:
PLANTIN' PAL AND EASY WORKING PLANNER

Most older children and adults enjoy their leisure time by taking up hobbies or engaging in sports. One activity that's growing in popularity is gardening. And, next to harvesting the fruits of your labors, planning the garden is probably the most fun. What a way to chase the winter doldrums!

With **Plantin' Pal** your Apple helps you select vegetables, plan a layout, visualize your garden in color on screen, and even print a reference list for seed shopping.

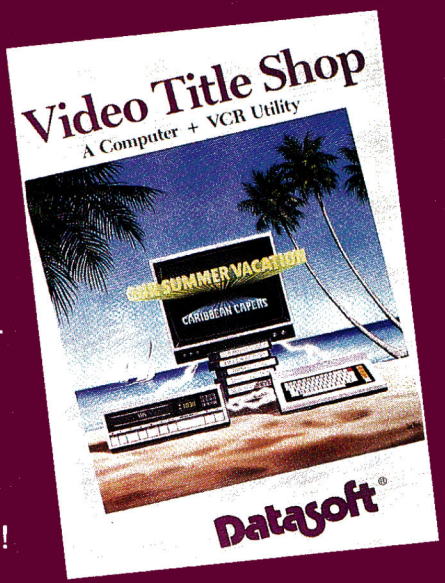
If you don't already own a spreadsheet program and you'd like to plan a family budget, organize your paper route, or keep sports stats, look into Spinnaker's new productivity programs. The **Easy Working Series** features **The Writer** (a word processor with spelling checker), **The Filer** (an electronic card file), and **The Planner** (a spreadsheet), which I like best.

You don't have to be afraid of spreadsheets any longer—this one's easy to learn. The setup is conventional, and commands are displayed in pull-down menus. While it doesn't have all the built-in functions AppleWorks and most others spreadsheet programs include, it does contain the ones you'll use most often—summing, averaging, counting, and finding the minimum and maximum values in a series of numbers. As a bargain-priced, light-duty spreadsheet program, The Planner shines.

FOR ADULTS: HOLIDAY BEST,
AMERICA COOKS, AWARD-WINNING WINES

First there was productivity software, then educational and entertainment software. Now there's "life-style" software, published by Concept Development Associates.

Turn Your Computer Into A Video Studio!!



Bring any video performance to life with **VIDEO TITLE SHOP**™. This exceptional application lets you combine a computer and VCR to create title animations and graphics effects never before available in such an inexpensive, easy-to-use program.

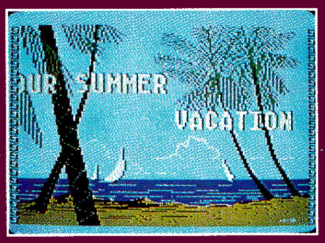
Whenever a presentation needs pizzaz, **VIDEO TITLE SHOP** makes it shine! It spices up any video production—from multi-media shows to educational and training seminars to product exhibitions. And of course, **VIDEO TITLE SHOP** turns home movies into hot-popcorn crowd-pleasers!



Superimpose text over artwork.



Add waves of colorful graphics by using **MICROPAINTER**™ **PLUS.**



Produce special effects like wipes, scrolls, fizzles, fades, and more!



Design borders and choose from an array of font styles and sizes.

VERSATILE . . . AND REFRESHINGLY EASY TO USE

- **Use the enhanced design and editing options**
- **Create on the entire screen (no menu clutter)**
- **Import graphics for use as title backgrounds**
- **Control when and where art pens and colors are used**
- **Chain screens together, a different effect on each, to design full-length Title Sequences**
- **Learn from the Introductory Demonstration (major features are shown on-screen).**

Available for Atari® XE/XL, Commodore 64™/128™ and Apple®II Series computers.
Visit your retailer or call 800-245-4525
(in California call 800-562-1112) for ordering information.

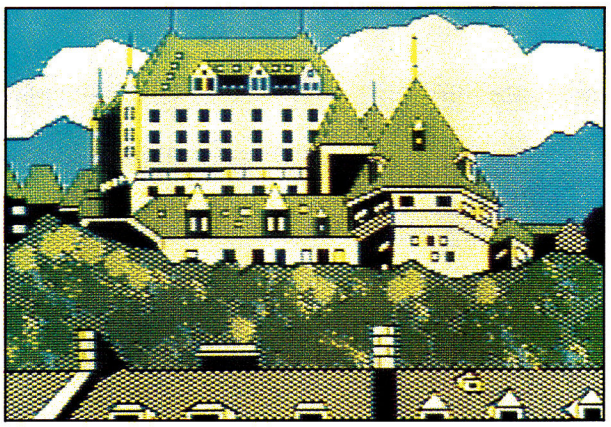
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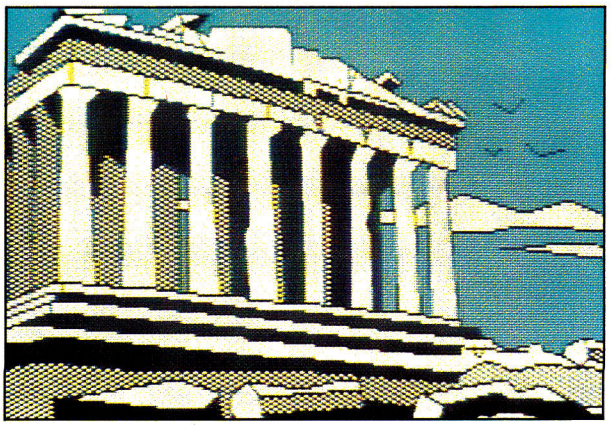
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Circle 235 on Reader Service Card.





Top, The Spy's Adventures in North America; bottom, The Spy's Adventure in Europe.

CDA may not be the Visicorp of the 1980s, but it's recognized that many of us want our Apple IIs to show us commonplace things like cooking, entertaining, and traveling in a new light.

CDA programs are databases, but they function like interactive books-on-disk. They can liven up or regenerate your interest in gourmet cooking, wine tasting, or visiting inns and B&Bs (bed-and-breakfast establishments). Each database is flexible: You can search by ingredient or size a recipe, and edit and add to each database, too. Another appealing feature is that many CDA programs sport the AppleWorks tabbed-file-card interface.

Perhaps the most timely CDA program to give this season is **Holiday Best**, a compilation of tips and information on cooking, wine tasting, drink mixing, and traveling.

How many times have you searched your recipe box for unique treats to bring to holiday parties? You want something that won't chain you to the oven, but will be eye-catching and different. Holiday Best includes appetizer-through-dessert recipes, such as "Toasted Pecans," "Egg Nog for Kids," and "Bread Pudding with Whiskey."

The program's Wine and Libations section includes a mini wine guide and an assortment of recipes for 34 holiday drinks. The Travel book-on-disk is a database of 51 records describing selected inns and restaurants around the U.S.

If you prefer straight cooking programs, look into the **America Cooks** series. Each cookbook-on-disk in this group concentrates on a particular cuisine (American, Chinese, French, Italian, or Mexican), offering recipes from 20 or so top chefs. Meal-planning guidelines, search functions, a sizing option, and notes on preparation time and level of difficulty are included. You can print the recipes, of course, so you won't need to keep your Apple in the kitchen—though with the America Cooks series, that's not such a bad idea.

Product Information

America Cooks Series:
American, Chinese, French, Italian, Mexican,
$14.95 each
American Home Cooking:
Calvert's Cedar Street, Contemporary Cuisine, Cooking with Kids, Southern Cooking, The Spice Hunter,
$14.95 each
Holiday Best, $14.95
Regional Cooking:
Chachie Dupuy's New Orleans Home Cooking, Dining in Manhattan, Dining in San Francisco,
$14.95 each
World of Wines Collectors Series:
Award-Winning Wines, Bordeaux, Classic Companions: Matching Food and Wine, Champagne, Chardonnay, Great Vintage Years, Wines of Australia, Wines of Germany, $14.95 each

Official Mr. Boston Micro Bartender's Guide
deluxe, $29.95
abridged, $14.95
Concept Development Assoc.
45 Cordova Street
St. Augustine, FL 32084
(904) 825-0220
Reader Service Number 386

Creature Creator, Notable Phantom
Designware
Britannica Software
185 Berry Street
San Francisco, CA 94107
(800) 572-2272
(415) 546-1866
$9.95 each
Reader Service Number 387

Easy Working Series:
File, Planner, Writer
Spinnaker Software
One Kendall Square
Cambridge, MA 02139
(800) 826-0706
(617) 494-1200
$9.95 each
Reader Service Number 388

Electronic Crayon:
ABCs, Fun on the Farm, This Land Is Your Land
Sesame Street Crayon:
Letters for You, Numbers Count, Opposites Attract,
$14.95 each
The Spy's Adventures:
Europe, North America, South America,
$17.95 each
Polarware
Box 311
Geneva, IL 60134
(800) 323-0884
(312) 232-1984
Reader Service Number 389

K–12 Micromedia Publishing
6 Arrow Road
Ramsey, NJ 07446
(800) 922-0401
Reader Service Number 390

Number Munchers, Word Munchers
MECC
3490 Lexington Avenue N.
St. Paul, MN 55126
(800) 228-3504
(612) 481-3640
$29.95 home edition
$34.95 school edition
(MECC Home Software Library: four free programs with $75 initiation fee)
Reader Service Number 391

Plantin' Pal
ShareData, Inc.
Green Valley Publishing
7400 West Detroit Street
Suite C-170
Chandler, AZ 85226
(800) 328-6061
(602) 961-7519
$7.99
Reader Service Number 392

Tink Tonk Series
Thunder Mtn./Mindscape
3444 Dundee Road
Northbrook, IL 60062
(800) 221-9884
(800) 942-7315 (IL)
$9.95 each
Reader Service Number 393



VISIT EXOTIC LANDS AND WIN OVER THE NATIVES.

There is a place, probably a long, long way from where you're sitting right now, where grown men actually wear dresses and throw telephone poles in the air as a sign of athletic prowess.

It is true.

There is another rather bizarre land where grown men actually throw *themselves* in the air as a sign of athletic prowess.

Right off the edge of a cliff.

We're talking, of course, about Scotland's famous Caber Toss and the death-defying divers of Acapulco.

Two of the events you'll find in *World Games*,™ the newest sequel in our bestselling "Games" series.

Here's your chance to dash around the globe as a big-time international athlete competing in 8 extraordinary sports.

Go stomach to stomach with a 400 pound sumo. Jump barrels in Germany.



Anyone who can throw a telephone pole long distance is entitled to wear a dress.



You haven't lived until you've taken a log out for a spin.

Try Canada's ridiculously difficult log roll. Or ski the brutal, wintry slopes of France.

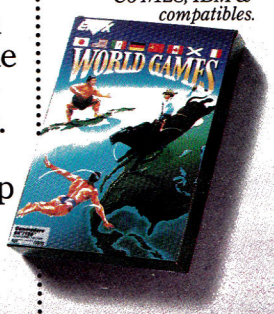
Then it's back to the good old US of A to ride a bucking bull. And off again to bully Moscow with some heavy-duty weight lifting.

If you manage to upset enough countries, your name will be permanently inscribed in the World Hall of Fame.

This then, is a challenge of global proportions.

The question is, are you ready to go the distance?

One to eight players. Amiga, Apple II & compatibles, Atari ST, C64/128, IBM & compatibles.



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Table. Additional stocking-stuffer programs.

Program	Ages	Publisher	Price
Counting Parade	3–6	Spinnaker	$9.95
Up & Add 'em	3–6	Spinnaker	$9.95
Serendipity	3–9	K–12 Micromedia	$14.95
Alphabuild	4–8	Spinnaker	$9.95
Paint with Words	4–8	MECC	Club*
Frog Jump	5–8	Mindscape	$9.95
The Friendly Computer	5–8	MECC	Club*
Picture Parts	5–8	Mindscape	$9.95
Early Addition	5–9	MECC	Club*
Sound Tracks	5–12	MECC	Club*
Path Tactics	5–12	MECC	Club*
Success with Math: Addition with Carry	6–8	Mindscape	$19.95
Laser Math	6–10	K–12 Micromedia	$14.95
Sea Speller	6–12	Spinnaker	$9.95
Success with Math: Long Division	6–13	Mindscape	$19.95
Songwriter	6–14	Mindscape	$9.95
Pattern Maker	6–18	Mindscape	$9.95
Success with Math: Subtraction	7–9	Mindscape	$19.95
Pyramid Puzzler	7–11	Mindscape	$9.95
Picture Writer	7–14	Mindscape	$9.95
Keyboard Cadet	7–18	Mindscape	$14.95
Fraction Fever	7–Adult	Spinnaker	$9.95
Trap-a-Zoid	7–Adult	Designware	$9.95
Success with Math: 1-2-3 Digit Multiplication	8–11	Mindscape	$19.95
Star Maze	8–12	Mindscape	$9.95
The Market Place	8–14	MECC	Club*
Mr. Pixel's Cartoon Kit	8–14	Mindscape	$9.95
Mr. Pixel's Programming Paint Set	8–14	Mindscape	$9.95
Mastertype's Figures & Formulas	8–18	Mindscape	$9.95
Crypto Cube	8–Adult	Designware	$9.95
Spare Moments	8–Adult	MECC	Club*
Mind Puzzles	9–15	MECC	Club*
Problem-Solving Strategies	9–15	MECC	Club*
Number Bowling	10–14	Mindscape	$9.95
Jenny's Journeys	10–Adult	MECC	Club*
A Mission in Our Solar System	11–18	Mindscape	$9.95
Space Journey	12–14	Mindscape	$9.95
Pensate	12–Adult	Polarware	$8.95
Paper Graphics	12–Adult	Polarware	$19.95
Transitions	12–Adult	Polarware	$19.95
Cat Graphics	12–Adult	Polarware	$19.95
ShortCuts	12–Adult	Polarware	$19.95
Maxi Golf	13–Adult	Mindscape	$9.95
The Perfect College	16–18	Mindscape	$19.95

* Available through MECC Home Software Club; see text for details.

Any oenophiles on your holiday gift list will appreciate CDA's **World of Wines Collectors Series**. Some titles concentrate on a particular type of wine, while others compile information on wines from particular regions (Australia or Germany).

Perhaps the most generic among these programs is **Award-Winning Wines**, which includes reviews and recommendations by professional wine tasters belonging to Les Amis du Vin, an international organization of more than 100,000 devotees.

Like other CDA programs, Award Winning Wines isn't just a database. The program is educational (Select Wines to Suit Your Taste) as well as entertaining (Have Fun with Group Tastings). It prints scoring sheets listing the wines' qualities of color, intensity, clarity, bouquet, sweetness, softness, balance, and finish; your guests check off their opinions. Enter each participant's ratings, and the program calculates group scores for each wine in the tasting.

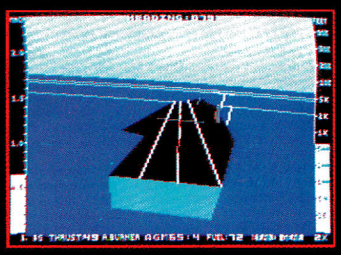
SOMETHING FOR EVERYONE

Whether your Apple friends are 8 years old or 80, whether they typically wear grape-jelly mustaches, Izod shirts, terrycloth aprons, or raggedy garden gloves, you'll find great stocking stuffers among the programs in our under-$20 list. Happy Holidays!■

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



1987 - Expanding Scenery disk coverage; East Coast, Japan, & Europe



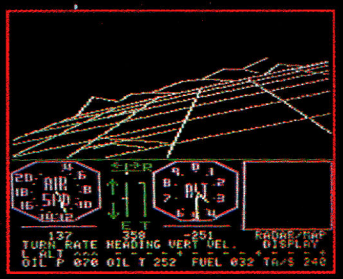
1985 - High-performance Jet flight simulator for the IBM, Commodore 64, and Apple II computers



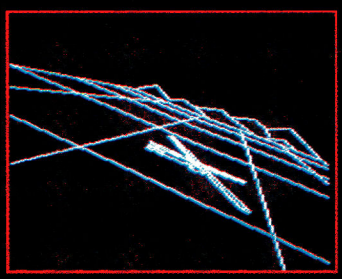
1986 - Flight Simulator II for the 68000 computers



1982/1983 - Microsoft Flight Simulator & Flight Simulator II



1979 - 3D graphics applied to the original FS1 Flight Simulator for the new Apple II and TRS-80 computers



1977 - SubLOGIC's 3D graphics package in BASIC and M6800 Assembly Language

Ten Years of Technology and Dedication

Some say our technology has helped us define the state of the art in flight simulation. We believe our ten years of dedication have gotten us where we are today.

SubLOGIC's first black & white 3D graphics routines, developed in 1977, paved the way for our introduction to flight simulation and aerial combat gaming theory. Our second-generation Flight Simulator II was so well conceived that even we find it difficult to improve upon. Jet's spectacular land and sea battle scenarios set another classic milestone in state-of-the-art simulation gaming. Scenery concepts incorporated into SubLOGIC flight simulation products right from the start continue to evolve as we introduce new, more beautifully detailed areas of the world to explore. And coming in 1988 - a flight control yoke for even more realism!

We invite you to help us celebrate our first decade of success, and share in our anticipation of the next ten years to come. SubLOGIC tenth-anniversary promotional shirts and posters are available at your dealer or directly from SubLOGIC. See your dealer, or write or call us for more information.

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Utilico Software E.D.D. IV 21.00
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GFL Championship Football 26.00
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The Portable-to-

by Jason Meinhart

Combine the convenience of a portable "laptop" computer and the power of your Apple II: With a few cables and a little patience, you can get them talking.

Have you ever been away from your home or office and found that you truly missed your Apple II? It's frustrating to have to record notes and letters by hand while traveling, only to re-enter them into a word processor when you return. One creative solution to this nagging problem is to use a portable, or "laptop," computer on the road, then transfer your letters, notes, and so on to your Apple for editing with AppleWorks or whatever Apple II word processor you use.

The first step in complementing your Apple IIe, IIc, or IIGS with a portable computer is to identify the components and accessories you need. The logical place to start is with the portable computer itself.

CHOOSING A PORTABLE

You'll see a wide variety of portable computers on the market; most are suitable for interfacing to your Apple. The possibilities range from machines with limited functions and memory to models such as the **Toshiba T3100** that are completely IBM-compatible, with internal hard disk and a megabyte of random-access memory (RAM). Prices range from about $500 for the most basic model to more than $4000 for more sophisticated systems.

While IBM compatibility, integrated software, and hard disks are impressive features, they tend to mask the real forte of a portable as a second computer—convenience. Many people want to use a portable to record data at a remote location, and transfer it to the Apple, which performs the actual computations. The portable doesn't require extravagant features to function effectively in this capacity.

The general rule in choosing a portable is "keep it simple." You don't want your portable to create more problems than it solves.

One of the better values in portable computing belongs to the Tandy series. Although these models lack the power of more expensive systems, their standard features include communications and word-processing software, cassette-tape interface, and built-in modem.

The Tandy line of portables also offers affordability. Tandy's **Model 102**, for instance, features 24K of memory for $500. All Tandy portables support optional cassette or disk-drive data storage; **Model 600** sports a 360K 3½-inch internal disk drive.



Apple Connection

While Tandy's portable computers seem best suited as "electronic notebooks," your decision depends ultimately on the features you want and the investment you're willing to make. If you prefer a more sophisticated portable, you'll still connect it to your Apple the same way.

SHOPPING FOR COMMUNICATIONS SOFTWARE

To transfer data between your Apple and your portable computer, you need communications software for both machines. If you're already using a communications program with your Apple, you can use the same software to talk to your portable.

If you don't own a communications program, choose a software package offering the features you'll need later, should you decide to add a modem sometime in the future. Any Apple II communications software that addresses ASCII code (American Standard Code for Information Interchange) and allows RS-232C protocol will suffice. (For more information, see "Telecommunications: The Software Connection," February 1987, p. 52.)

The software you'll select for your portable computer depends on the particular make and model. Because most portables have little software support, choices are limited. The manufacturer or dealership that sold you your portable can supply details of what's available for that machine. Some portables, such as the Tandy series, feature built-in communications software.

THE BASICS OF INTERFACING

Establishing the interface between your portable computer and your Apple can be a tedious process. The types of connectors and cables necessary to complete the interface depend on the particular serial-port configuration of the portable you've selected. In addition, the Apple II series lacks standardization. The IIe, IIc, and IIGS models all have different serial-card configurations.

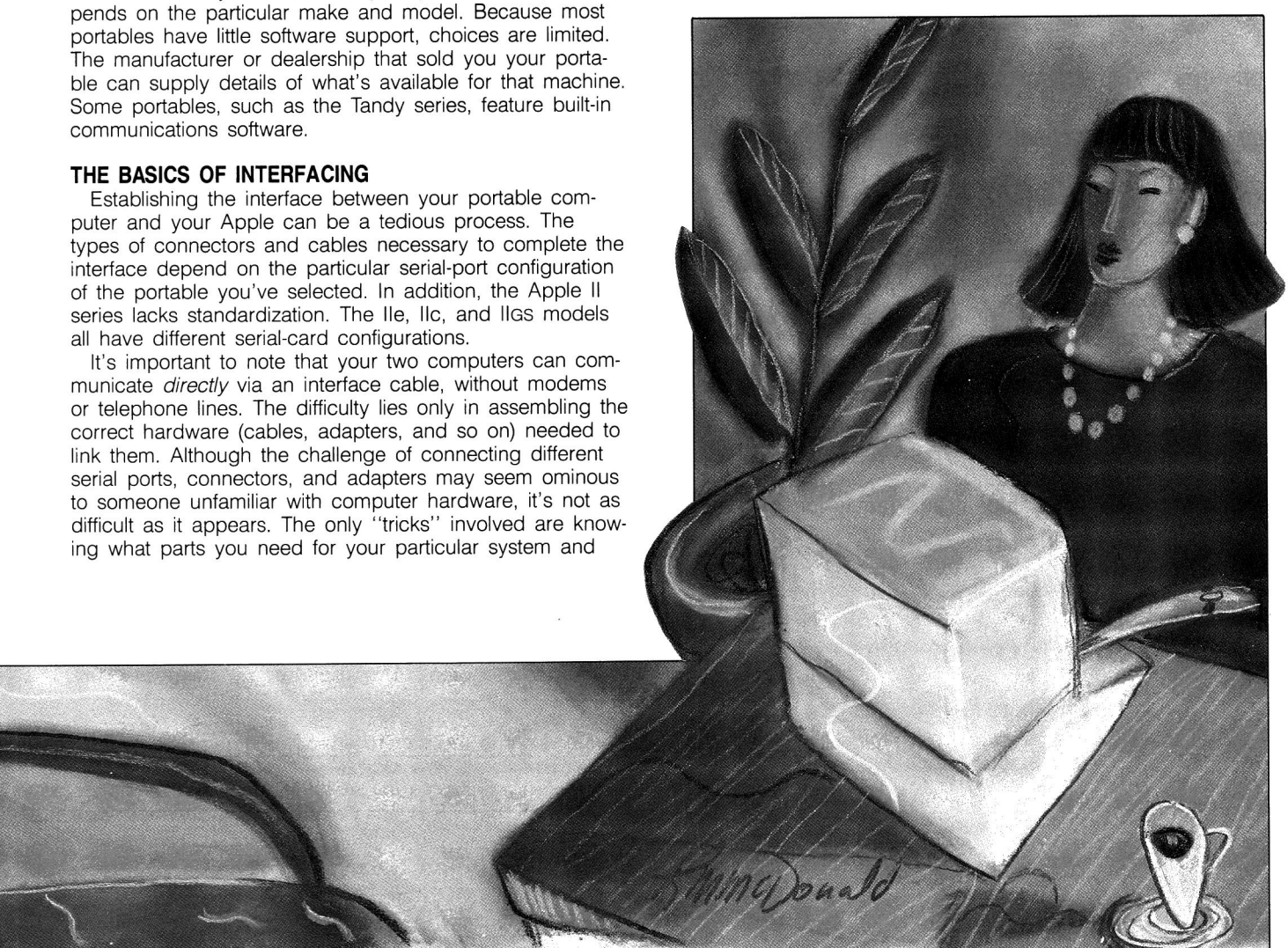
It's important to note that your two computers can communicate *directly* via an interface cable, without modems or telephone lines. The difficulty lies only in assembling the correct hardware (cables, adapters, and so on) needed to link them. Although the challenge of connecting different serial ports, connectors, and adapters may seem ominous to someone unfamiliar with computer hardware, it's not as difficult as it appears. The only "tricks" involved are knowing what parts you need for your particular system and where you can find them.

The main medium of exchange for transferring data between the two computers is the RS-232C communications cable with DB-25 connectors. It's available, in various lengths, from your local Radio Shack Computer Center and other computer stores. To interface your computers, you must prepare the serial communications ports of both the portable and the Apple to accept the cable's DB-25 connector.

PREPARING YOUR PORTABLE'S PORT

Portable computers come equipped with RS-232C (serial) communications ports, but styles of connectors still vary, depending on the particular make and model. Many portables, such as the Tandy series, use a DB-25 (25-pin) connector. (See **Figure 1**.) Others, such as the Toshiba line, sport 9-pin connectors. (See **Figure 2**.)

Until recently, the DB-25 was the industry standard for RS-232C communications ports, but the 9-pin is more



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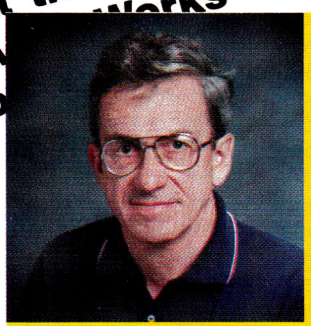
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common now because of its smaller size. A portable using a 9-pin connector requires a cable that will adapt it to a DB-25, with pin assignments compatible with the Apple IIe serial port. (See **Figure 3** and the accompanying **Table**.) Such cables are available from your dealer or from a computer-cable specialist. Once you've adapted the serial port to accept a DB-25 connector, your portable is ready for the interface cable.

PREPARING YOUR APPLE

Simply install a standard serial interface card in your IIe—most have DB-25 connectors—and your Apple is ready to interface. It's important to note that certain communications-software packages, such as **Apple Access II**, address interface cards occupying slot 2 only. This slot is accepted as the standard "home" for the modem interface; make sure you've inserted your serial card there, to meet conventional software constraints.

If you already use a modem with your Apple IIe, your portable computer can share the same serial-interface card. Install a selector switch (available from Radio Shack and several mail-order houses) between your serial port and your modem, then connect the RS-232C interface cable from your portable to that switch. If you don't want to bother with a switch, you can get the same effect by swapping the cables between your serial port and your modem or portable as needed, though this method is inconvenient.

If you don't have a modem and you need to purchase a serial-interface card, invest in one that's compatible with all major communications programs. That way, you can add a modem or serial printer to the same card at a later date. The Apple **Super Serial Card** or a true compatible, such as Applied Engineering's **Serial Pro** (which also functions as a ProDOS clock/calendar), is recommended over a "bargain" interface that may not be as versatile.

Unlike the Apple IIe, the IIc and IIGS don't offer DB-25 connections, but use circular DIN-type serial ports instead. The GS has a Macintosh-style miniature 8-pin DIN serial port, while the IIc uses a 5-pin DIN serial port. (See **Figures 4** and **5**.)

To interface these Apples with your portable, you must adapt the DIN serial port to the DB-25 connector. The easiest way is to buy a cable that plugs into your IIc's or GS' DIN connector and ends in the required DB-25 connector. **Redmond Cable Corporation** offers high-quality universal adapting cables for less than $40 apiece. Redmond also provides the cables required to adapt your portable's serial port, if necessary.

If a modem occupies the serial port of your Apple IIc or GS, simply swap the cables to access your portable computer from the same port. The DIN-type connectors on these machines allow quick, easy cable changes, unlike the IIe's DB-25 connector.

ONE LAST ELEMENT

To wrap up your preparation, you must also connect a *modem eliminator*, or *null-modem* cable, to one end of the RS-232C cable to establish an interface. (See **Figure 6**.) The modem eliminator connects the output of the portable computer to the input of your Apple and *vice versa*. In effect, the modem eliminator lets your computers function as if they were "on line"—using modems and the phone

Figure 1. DB-25 (25-pin) connector.

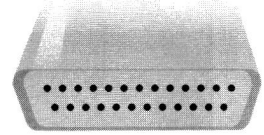
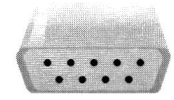


Figure 2. Nine-pin connector.



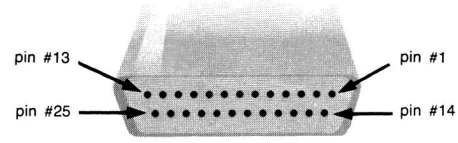


Figure 3. Apple DB-25 pin configuration.

Table. Apple DB-25 pin configuration.

Pin Number	Signal Name
1	frame ground
2	transmit data (TXD)
3	receive data (RXD)
4	request to send (RTS)
5	clear to send (CTS)
6	data set ready (DSR)
7	signal ground
8	data carrier detect (DCD)
19	secondary clear to send
20	data terminal ready (DTR)

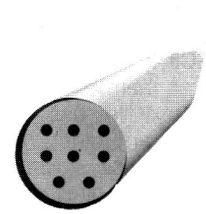


Figure 4. Eight-pin DIN connector.

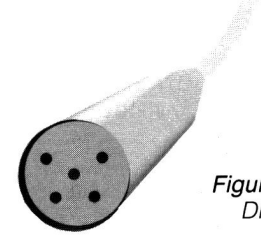


Figure 5. Five-pin DIN connector.

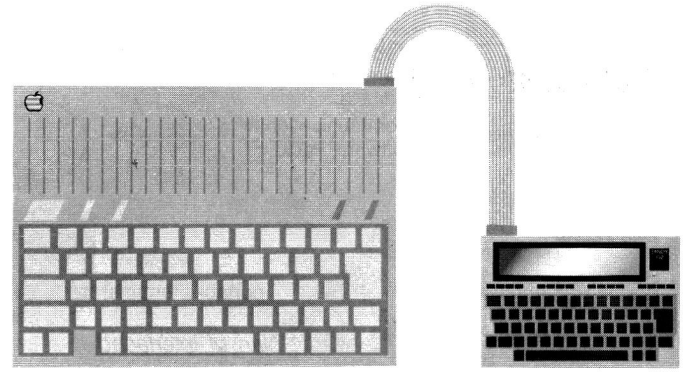


Figure 6. Interfacing your Apple II and portable via RS-232C interface cable.



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Tandy's Model 600 adds a 3½-inch internal disk drive.



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lines. Modem eliminators are available at your local Radio Shack Computer Center and other computer-supply stores.

When you've connected the serial cable, with a modem eliminator on one end, to the communication ports of both the Apple II and the portable computer, the interface is complete and you're ready to transfer files (**Figure 7**).

BOOTING UP

Although specific operations vary according to the individual communications program you use, the basic procedures you employ to transfer data from the portable computer to your Apple are generally similar.

The portable computer's communications software "uploads" data to your Apple. The transmission consists of strings of ASCII code formatted into ASCII text files. Your Apple's communications software stores them on disk as it receives them. You can convert these text files easily to AppleWorks files, though you can also use any other word processor capable of loading ASCII text files.

Transferring data by modem is an alternative to direct interface. If your Apple already has a modem, all you need is a modem for your portable. (The Tandy line includes built-in modems.) The communications software is the same. Your dealer can provide more information on telecommunicating with your portable computer.

ON THE ROAD AGAIN

If you're a sales representative, student, or secretary, one of your Apple II's few limitations is that it doesn't make for much of a traveling companion. With a portable computer, however, you can take notes and write letters, reports, and memos on the road or in the classroom. When you get back to your home or office, don't double your "paperwork"—just upload the information to your more-powerful Apple II and start editing.■

Jason Meinhart is a computer-science major at East Tennessee State University, and is also managing editor of Sci-Fi Research, a software-design firm. Write to him at 1108 Indian Hill Drive, Bristol, TN 37620.

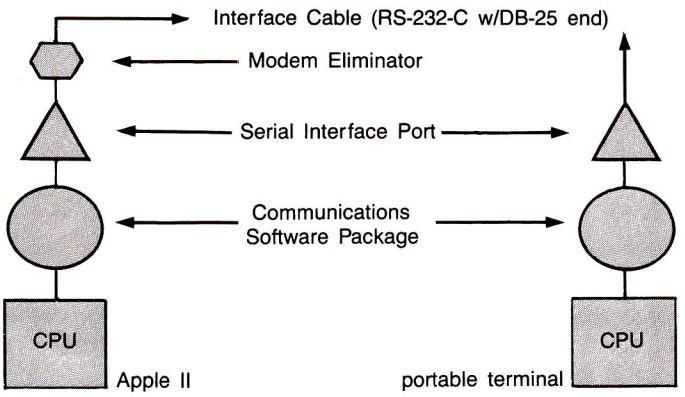


Figure 7. Diagram showing overall plan of interfaced systems.

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Super Serial Card, $139
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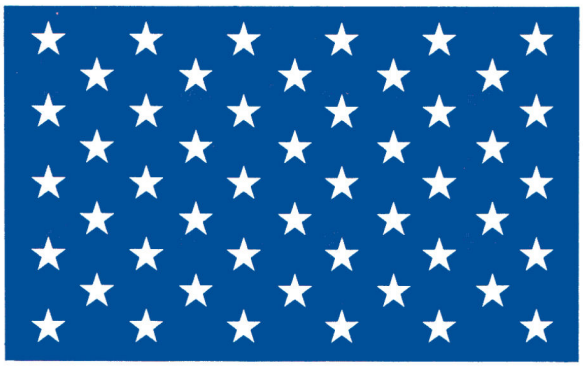
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A Festive Thanksgiving Menu

The AppleWorks word processor helps you dress up your Thanksgiving dinner.



by Ruth K. Witkin

Thanksgiving at my house is a day filled with lots of people, lots of noise, and lots of mouthwatering food. One of the things that adds a warm, festive touch is a homemade menu. A menu not only tells my guests what they're about to eat, but serves as a meal-planning tool and an after-dinner momento.

Preparing the menu and the subsequent shopping list is a breeze with AppleWorks. I start by listing the must-have dishes that are traditional and fun to prepare. Since I lean toward culinary overkill, the list invariably runs on. I then type the "front matter" (titles and date) at the top of the menu, enter the interline spacing, and do the preliminary formatting.

Printing is the moment of truth. Needless to say, the list spills into several pages, so I simply grit my teeth and settle down to some serious whittling. It's not easy for me to deep-six even one dreamy dish. But really—if I bake sweet-potato pie, do I need potato salad, too? Do I have to serve both baked ham and turkey?

Figure 1 shows this year's menu. Centered lines, varied type sizes, and boldface turn the humdrum lines of text you'll see on your screen into a true people pleaser.

A DOCUMENT FROM SCRATCH

Use the AppleWorks Startup and Program disks to bring up a new word-processor screen. Name this file **Menu**. You should see the Review/Add/Change screen with the cursor in line 1 column 1. These line and column numbers (shown at the bottom of your screen) change as you move the cursor.

At several points in the instructions, I'll ask you to save the menu. If you're working with a one-drive system, watch the screen for prompts telling you when to swap the Program disk for the data disk.

Follow the instructions here to enter the basic text of the menu. (Ignore for the moment the centering and boldface you see in **Figure 1**.) Press OA-Z to keep your Returns visible while you work. (They show up on screen as square blots.) If you make a typo, press the delete key to back up the cursor and erase.

On line 1, type **THANKSGIVING** and press Return twice to end the paragraph and insert a blank line. The cursor moves to line 3. Type **Thursday, November 26, 1987**; press Return twice. The cursor moves to line 5. Type **at the Witkin house** (or use your own name); press Return three times. The cursor moves to line 8.

Type **MENU** and press Return three times. The cursor moves to line 11. Type **Appetizers**; press Return twice. The cursor moves to line 13. Type **Whole Fresh Pineapple, Sliced and Garnished with Candied Cherries**; press Return. On line 15, type **Anchovies and Caponata**; press Return. On line 16, type **Fresh Chilled Cantelope Slices**; press Return three times. The cursor moves to line 19.

Type **Soup du Jour**; press Return twice. The cursor moves to line 21. Type **Homemade Chicken Broth with Noodles**; press Return three times. The cursor moves to line 24.

Type **Main Course**; press Return twice. The cursor moves to line 26. Type the list of foods you see under that heading in **Figure 1**; remember to press Return after each item. After **Rolls and Butter** press Return three times. The cursor moves to line 37.

Type **Karen's (Mostly) Home-Baked Desserts**; press Return twice. The cursor moves to line 39. Type in the list of goodies through line 46. After **Whipped Topping** press the Return key three times. The cursor moves to line 49.

Type **Beverages**; press Return twice. The cursor moves to line 51. Type **Soda (regular or diet), Water, Milk, Iced Tea**; press Return. On line 52 type **Hot Coffee or Hot Tea with Lemon or Sweet Cream**; press Return. On line 53 type **Choice of Liquor, Beer, or Wine** and leave the cursor where it is, line 53 column 32.

CORRECTING TEXT

When you finish typing the text, proofread it against the text in **Figure 1**. (Don't worry about formatting yet.) Use the insert cursor (a blinking underline) or overtype cursor (a blinking rectangle) to correct any problem. Pressing OA-E switches between the cursors.

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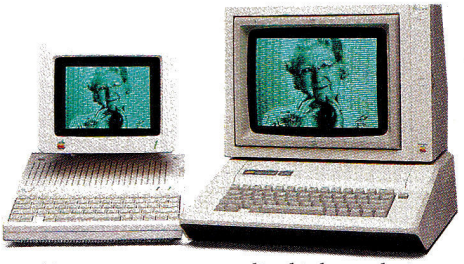


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Figure 1. A Thanksgiving dinner menu created with the AppleWorks word processor.

THANKSGIVING

Thursday, November 26, 1987

at the Witkin house

MENU

Appetizers

Whole Fresh Pineapple, Sliced and Garnished with Candied Cherries
Anchovies and Caponata
Fresh Chilled Cantelope Slices

Soup de Jour

Home-made Chicken Broth with Noodles

Main Course

Plump Juicy Turkey with Gravy
Stuffing Seasoned to Chef's Taste
Sweet Potato Pie a la Grandma Topped with Baby Marshmallows
Steamed Cauliflower
Home-made Cole Slaw
Cranberry Sauce a la Ocean Spray
Fresh Tossed Salad with Choice of Dressings
Pickles and Olives
Rolls and Butter

Karen's Home-Baked Desserts

Mouth-watering Pecan Pie
Scrumptuous Chocolate Pudding Pie
Smooth and Creamy Cream Cheese Pound Cake
Almond Cookies
Figs and Nuts
Vanilla Ice Cream
Fresh Fruit and Assorted Cheeses
Desserts available with Chocolate Syrup or Whipped Topping

Beverages

Soda (regular or diet), Water, Milk, Iced Tea
Hot Coffee or Hot Tea with Lemon or Sweet Cream
Choice of Liquor, Beer, or Wine

If something's missing, the insert cursor belongs on the character to the right of the insertion. If you find a typo, move the overtype cursor atop the character you want to replace. To erase a character, place either cursor to the right of the doomed chararacter and press Delete.

The following keys move the cursor through the menu: Left Arrow and Right Arrow move the cursor one character at a time in that direction; 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. Keys OA-1 through OA-0 (the AppleWorks Ruler) jump the cursor vertically through the text in proportional increments.

Now press OA-S to store the menu on disk. It's always fun to get a "before" shot of your documents, so turn on your printer. Press OA-P to start the Print command. Press Return to confirm *Beginning*. Press the key again to confirm the printer (or, if you have more than one printer, type a printer number, then Return), and press Return a final time to confirm one copy. And here it is.

FORMATTING THE MENU

Formatting transforms those lines of tasteless text into a mouthwatering masterpiece. **Figure 2** shows the format indicators at the top of the menu. Press OA-1 to jump the cursor to line 1 column 1.

Press OA-O to bring up the Printer Options screen. First, set top and bottom margins of one inch: Type **TM** and press the return key; type **1** and press Return again. Type **BM** and hit Return; type **1** and hit Return again.

Now enter the option that centers all lines: Type **CN** and hit Return. Next, have AppleWorks print **THANKSGIVING** at four characters per inch: Type **CI** and hit Return; type **4** and hit Return again. Press the escape key to exit from the Printer Options screen.

The rest of the formatting produces variations in type style (standard or proportional spacing) and character size. Proportional spacing gives each character only the width it needs, unlike standard spacing, which gives every character the same width.

Move the cursor to line 6 column 1 and press OA-O to bring up the Printer Options screen. Enter the code for *Proportional-2* spacing: Type **P2** and hit Return. Press Escape to exit from the Printer Options screen. A P2 character is a bit wider than a P1 character, the other AppleWorks proportional font.

Move the cursor to line 12 column 1. Increase the size of the word *MENU* so that it matches the size of the word *THANKSGIVING*: Press OA-O. Type **CI**

We Won't Be UNDERSOLD*

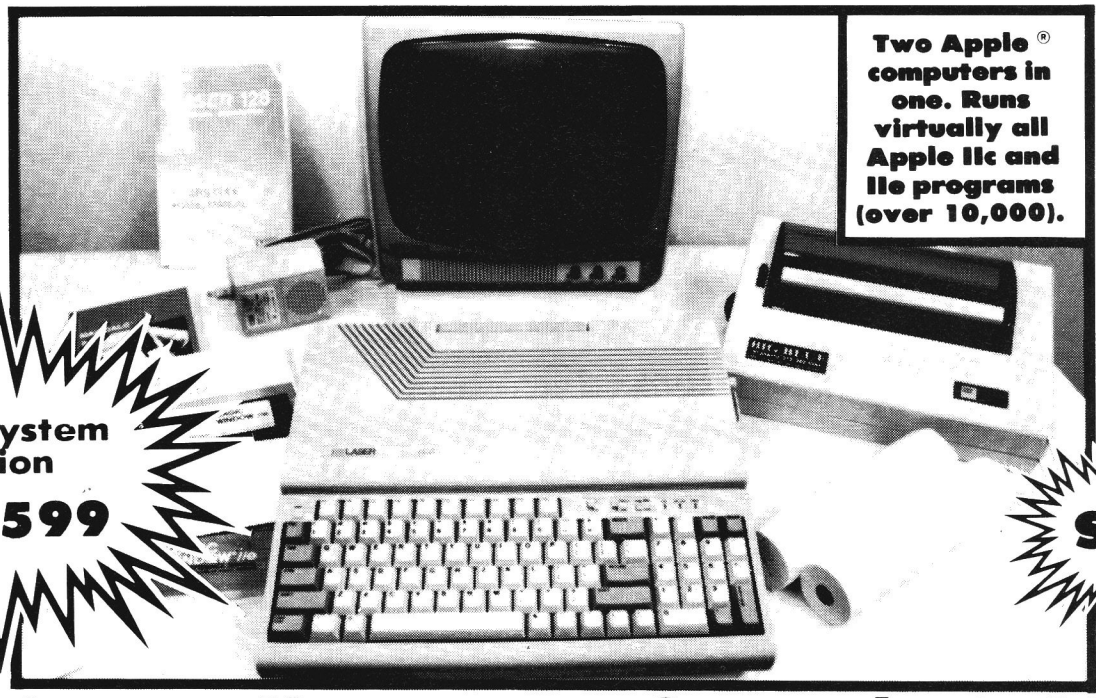
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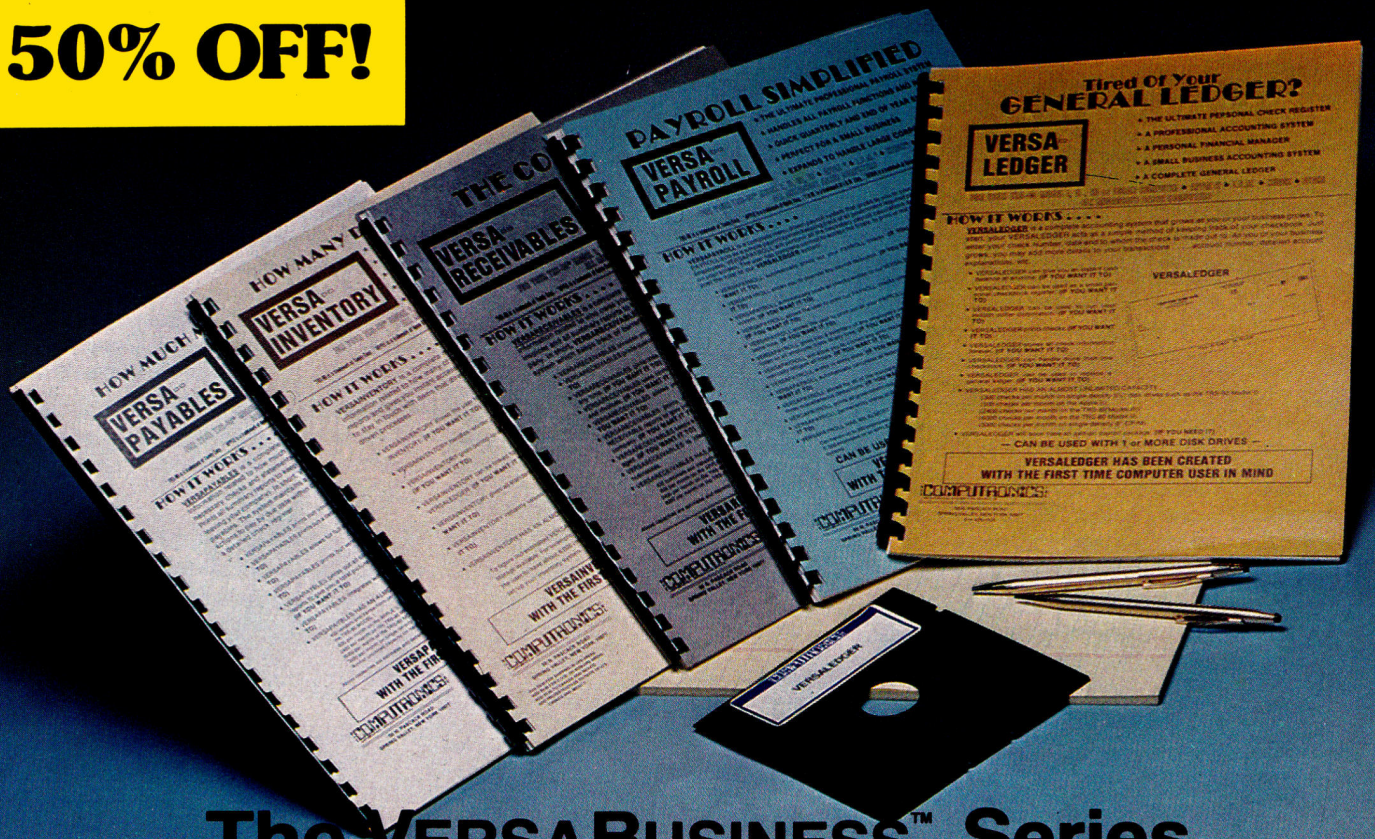
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and press Return. Type **4** and hit Return again.

In the same way, enter the options shown in the accompanying **Table**. In each case, move the cursor to the line indicated and press OA-O to bring up the Printer Options screen. For P2, type **P2** and press Return. For CI (characters per inch), type **CI** and press Return, then type **8** and hit Return.

Table. Additional AppleWorks printer options.

Line	Option	Chars
16	P2	
17	CI	8
20	P2	
26	P2	
27	CI	8
30	P2	
34	P2	
35	CI	8
38	P2	
50	P2	
51	CI	8
54	P2	
65	P2	
66	CI	8
69	P2	

With options in successive lines (such as *P2* in line 16 and *CI* in line 17), enter both options without leaving the Printer Options screen. After you enter the second option, press Escape. Move the cursor to the next line needing an option and bring up the Printer Options screen again.

With a single option (such as *P2* in line 20), enter the option, then leave the Printer Options screen. Move the cursor to the next line and return to the Printer Options screen. Keep going until you enter all the options.

Check your screen to be sure the options are in the lines shown in the **Table**. Now press OA-S to store the menu on disk.

BOLDFACE TYPE

The final step is to print the headings in boldface so that they really stand out. Press OA-1 to jump the cursor to line 1, and move the cursor to line 5 column 1. Hold down the control key and type **B**. Boldface cancels itself at the end of the line.

In the same way, tell AppleWorks to print **Thursday, November 26, 1987** in boldface: Press the down-arrow key to advance the cursor to line 8

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From My Mailbag

It's good to have readers who keep me on my toes. Darrell J. Rushton of Plantation, Florida, writes to say that my electronic checkbook (August and September 1987, pp. 64 and 91, respectively) can be calculated only once, not twice as I wrote, and still produce fully accurate results. All you have to do is change the order of calcuation from the standard columns to rows. To do this, press OA-V and type ROR (for *recaculate order rows*). Save the spreadsheet afterward.

Walt Peterson of Cherry Valley, California, points out that any blank entry rows in the current period (such as rows 23–28 in the example) will invalidate the average balance calculated in E56. Walt's absolutely correct. The solution is simple. To get an accurate average balance, edit Formula 10 to include only those cells that reflect actual activity. In this case, Formula 10 should be @AVG(I22. . .I6).

When you want to edit Formula 10 in your checkbook, place the cursor on E56 and press OA-U. Switch to the overtype cursor (OA-E), then use the right-arrow key to move the cursor through the formula (which is now on the entry line) and correct the cell location in parentheses. Remember to edit each time as the circumstances of your checkbook change.

Next month, I'll take you through a budget spreadsheet that can really help you control your money.□ —R.W.

Figure 2. Printer options at the beginning of the menu.

```
File: MENU                        REVIEW/ADD/CHANGE                    Escape: Main Menu
=====|====|====|====|====|====|====|====|====|====|====|====|====|====|===
--------Top Margin:  1.0 inches
--------Bottom Margin:  1.0 inches
--------Centered
--------Chars per Inch: 4 chars
     ^THANKSGIVING
--------Proportional-2

                        ^Thursday, November 26, 1987

                            ^at the Witkin house

--------Chars per Inch: 4 chars

          ^MENU

--------Proportional-2
--------Chars per Inch: 8 chars

                    ^Appetizers
--------Proportional-2
------------------------------------------------------------------------------
Type entry or use @ commands                Line 1  Column  1        @-? for Help
```

column 5, hold down the control key, and type **B**. Next, make the location boldface: Press the down-arrow key to move the cursor to line 10 column 18, hold down Control, and type **B**.

Now make your headings boldface: Place the cursor before the headings on lines 14, 19, 29, 37, 53, and 68 and press Control-B each time.

This is the moment when all your work pays off. With your printer on, press OA-P to start the Print command. Press Return three times—once to confirm *Beginning*, again to select your printer, and again for one copy. Your menu should now look like the one in **Figure 1**. How wweet it is! Press OA-S to store it on disk.

In laying out a menu, try to describe foods creatively and vary the length of the lines to enhance the overall design. If an item is short and squat, like Cole Slaw, preface it with something sparkly—unless a short line looks more appealing.

Print a menu for every guest, or just print one and run it off on a photocopier. Make it special by using colored bond or textured paper. Bon appetit!■

Ruth K. Witkin is a consultant in computer applications for business. She is the author of the hotCider template disk and handbook Success with AppleWorks (inCider, *CW Communications),* Managing with AppleWorks *(Howard W. Sams & Co.), and* Personal Money Management with AppleWorks *(John Wiley & Sons). (For more of Ruth's templates with documentation, look for* Success with AppleWorks Volume II *this fall.) Write to her at 5 Patricia Street, Plainivew, NY 11803. Enclose a self-addressed stamped envelope if you'd like a personal reply. From time to time,* inCider *will publish a sampling of letters of general interest to AppleWorks users. We reserve the right to edit letters for clarity, style, and accuracy.*

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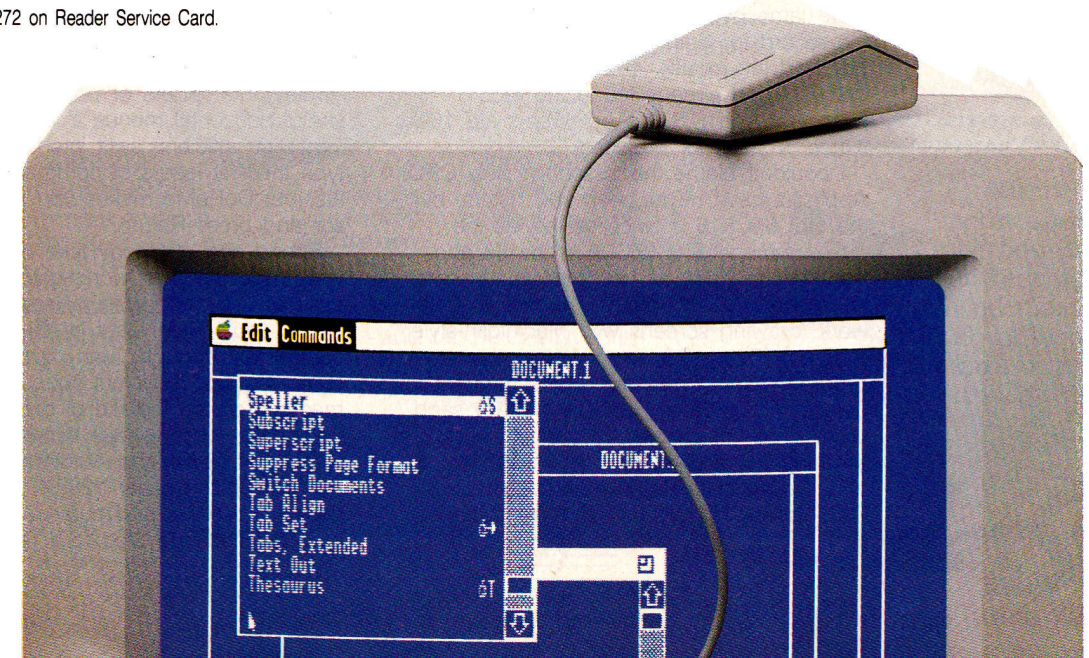
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Disk-Index Selector

Create a disk catalog that doubles as a program-selection menu, complete with highlighted bar.



by Dan Bishop

Do you have trouble keeping the programs on your disks organized? Would you like to view all the program titles on a single screen, or select and run a program with one keystroke instead of typing in the entire name? If so, Disk-Index Selector (see the accompanying **Program listing**) may be just the thing you've been waiting for.

Applesoft's CATALOG command lets you view a list of the programs on your disk, with one filename per line. If your disk contains more than 23 files, you need to toggle the scroll control (Control-S) to pause your Apple midway while you read the topmost titles before they scroll off screen.

Then, to load and run a program, you must type its entire name exactly as it appears in the directory. If it's unusual—or contains cute misspellings—and has scrolled off screen, you may type the name incorrectly. You'll get a FILE NOT FOUND error, so it's back to the CATALOG command, and you'll have to repeat the whole process.

Disk-Index Selector is a short program designed to be used as the HELLO program on each of your disks. It displays up to 40 program names on a single screen. The list doesn't include names of data files, so if you have a disk containing 50 files, say, but ten of them are data files, you can still use Disk-Index Selector. And with slight modifications, Disk-Index Selector can work with 48 program titles.

An index code (A–Z, zero through 9, or any of four punctuation characters—comma, hyphen, period, and slash) precedes each displayed program title. Simply press the key corresponding to the code next to the desired filename to load and run that program. Your days of typing long titles are over!

If you want to abort the program and switch to Applesoft's command editor, just press Control-Reset. The closed-bracket Applesoft command prompt (]) then appears on screen. Your HELLO program is still in memory, though, so be sure to enter NEW to clear it before doing anything else.

I've included one other special feature to demonstrate field highlighting and cursor control (using your IIe's arrow keys) in BASIC. When your list of program filenames appears on screen, the first title is highlighted. Use your four arrow keys to move the highlighted bar through the list (either column). Press Return whenever you want to load and run the highlighted program, just as if you were pressing that program's index-code key.

ISSUING DISK COMMANDS FROM BASIC

You've undoubtedly been using both the CATALOG and RUN commands for some time now as *immediate-mode* commands—that is, whenever the Applesoft prompt appears on screen. However, you can also place these commands within a BASIC program, as long as you enclose them in quotation marks immediately following the command PRINT CHR$(4);.

Try this. Place a program disk into your drive and enter the command LOAD HELLO. (Use the name of your disk's initialization program.) Now enter LIST to see the program listing. Add the following line just before the END command in that program:

```
xxxx PRINT CHR$(4);"CATALOG"
```

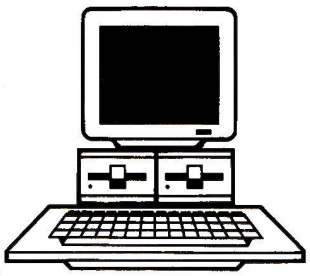
(Use an appropriate line number.) Enter SAVE HELLO, then reboot your system (enter PR#6) after your Apple saves the program.

Your HELLO program should run exactly as it did before until it reaches the new instruction. Then, automatically, your CATALOG file listing appears.

Enter NEW to clear memory for a new program called TESTRUN. Now enter the following program lines:

```
10 HOME
20 HTAB 10: VTAB 10
30 PRINT "TESTRUN IS HERE!"
40 INPUT "PRESS RETURN. . .";X$
50 END
```

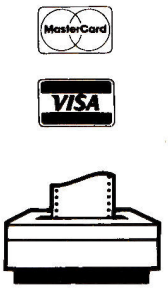
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Type RUN, just to be sure your program works, then enter SAVE TESTRUN. Now load HELLO and add the following line to it, just after the CATALOG command you added previously:

yyyy PRINT CHR$(4);"RUN TESTRUN"

(Again, use an appropriate line number.) Save HELLO and reboot your system with a PR#6 command.

Your Apple should display and run your original HELLO program, followed first by a CATALOG listing for the disk, then by a cleared screen with the message TESTRUN IS HERE! displayed across the center. You should now see the Applesoft prompt at the bottom of the screen.

And that's essentially how Disk-Index Selector works. After you type in the program listing, save it with SAVE HELLO to replace your old HELLO program. Then reboot your system with PR#6. When this new HELLO program runs automatically, your program-title list will appear. Since each listed title has its own PRINT CHR$(4);"RUN . . ." command in the HELLO program, selecting a title (either by pressing the corresponding code key or by highlighting the title and pressing Return) loads and runs that program automatically.

To most of your programs you can add one more feature that closes the cycle. In each BASIC program listed in your HELLO index program, replace the END command with PRINT CHR$(4);"RUN HELLO" and save this revised copy to disk. Now when you select a program from the HELLO index display, it brings up the HELLO program and displays the index again after it runs, instead of simply ending and displaying the Applesoft bracket prompt.

This appraoch is ideal for younger chldren who can't type yet, or for settings in which an operator must run several programs in succession from a given disk. Your HELLO program becomes the "shell" under which all your other programs operate. The operating system itself becomes transparent to the user.

If you set up all your disks this way, the only command you'll need when changing disks is RUN HELLO. This activates the HELLO index on the new disk, and replaces the old CATALOG command entirely.

SETTING UP YOUR PROGRAM

Disk-Index Selector uses two program lines for every program you want to list in the index. You must tailor them to match the specific program titles on each disk. These lines appear between line numbers 510 and 901 in the **Program listing**; you must organize them exactly as the examples show. Lines 510 and 511 deal with the first index listing; lines 520 and 521 are concerned with the second; and so on.

The first line for each listing (such as line 510) is a DATA statement that lists, in quotation marks, the index code followed by the name of the program file as it will appear on screen.

The second line is the PRINT CHR$(4);"RUN . . ." command line for that program. Since the program defines D$ as CHR$(4), we'll use that expression instead. So example lines 510 and 511 from the **Program listing** look like this:

```
510 DATA "A. ALPHABET SOUP"
511 PRINT D$;"RUN ALPHABET SOUP"
```

These lines assume that a program called ALAPHABET SOUP appears on your disk and that you want to associate it with the index code A.

There's room in the **Program listing** for up to 40 titles. Any index code without an associated title should still appear in a DATA line with a PRINT D$;"RUN HELLO" line: That will keep the program from crashing if you select some index code without an associated file. The program just ignores your selection.

You can place program titles anywhere in the list and choose mnemonic index codes to represent specific programs. For example, if you have only two titles to list, ALPHABET SOUP and MEMORY JOGGER, you may want to put ALAPHABET SOUP at the top of the list, with A, and MEMORY JOGGER further down the list, next to M.

Disk-Index Selector also places a disk title on the first line of the display. You enter this name at line 105 in the **Program listing**. Change the message displayed there to match the specific disk you're working on and add any pertinent information from your original HELLO program. If you need more than one line to display this information, replace the PRINT strings in lines 110, 115, and 120 with your own data.

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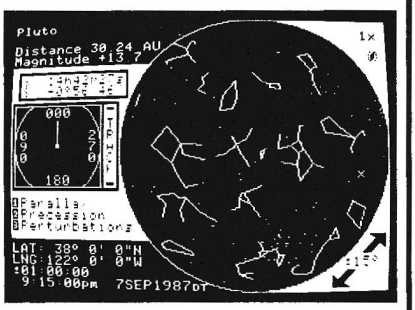
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APPLESOFT ADVISER

Program listing. Disk-Index Selector.

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6  REM   SAVE AS:  HELLO
7  REM   **********************
8  REM
10  GOSUB 100: REM  INITIALIZE
25  GOSUB 400: REM  GET SELECTION
30  END
94  REM
95  REM  **********************
96  REM  INITIALIZE VARIABLES
97  REM  AND DISPLAY PROGRAMS
98  REM  **********************
99  REM
100 L1$ = "--------------------": REM  19 -'S
105  HOME : PRINT "GAMES DISK NO. 1"
110  PRINT L1$;L1$
115  HTAB 1: VTAB 23: PRINT L1$;L1$
120  PRINT "HILITE PROGRAM WITH ARROWS; PRESS <RET>";
125  READ N
130  DIM PN$(N):D$ =  CHR$ (4)
135  FOR I = 1 TO N
140  READ PN$(I)
145  NEXT I
150 VT = 2:X = 20: IF N < 20 THEN X = N
155  FOR I = 1 TO X
160  HTAB 1:VT = VT + 1: VTAB VT
165  PRINT PN$(I);
170  IF N > 20 AND I + 20 <  = N THEN  HTAB 20: PRINT " "; LEFT$
     (PN$(I + 20),19);
175  NEXT I
180 PN = 1:HT = 1:VT = 3
185  GOSUB 300
190  RETURN
295  REM
296  REM  *****************
297  REM    TITLE HILITER
298  REM  *****************
299  REM
300  HTAB HT: VTAB VT
305  INVERSE
310  PRINT PN$(PN);
315  NORMAL
320  RETURN
346  REM  *****************
347  REM   TITLE DEHILITER
348  REM  *****************
349  REM
350  HTAB HT: VTAB VT
355  NORMAL
360  PRINT PN$(PN);
365  RETURN
395  REM
396  REM  **********************
397  REM  KEYBOARD ENTRY AND
398  REM  PROGRAM LOADER
399  REM  **********************
400  GET Z$:Z =  ASC (Z$): GOSUB 350
405  IF Z = 21 AND HT = 1 THEN PN = PN + 20:HT = 21: GOTO 445

410  IF Z = 8 AND HT = 21 THEN PN = PN - 20:HT = 1: GOTO 445
415, IF Z = 10 AND VT < 22 THEN PN = PN + 1:VT = VT + 1: GOTO
     445
420  IF Z = 11 AND VT > 3 THEN PN = PN - 1:VT = VT - 1: GOTO
     445
425  IF Z = 13 THEN  GOTO 450
430  IF Z > 64 AND Z < 91 THEN PN = Z - 64: GOTO 450
435  IF Z > 47 AND Z < 58 THEN PN = Z - 47 + 26: GOTO 450
440  IF Z > 43 AND Z < 48 THEN PN = Z - 43 + 36: GOTO 450
445  GOSUB 300: GOTO 400
450  PRINT
455  ON PN GOTO 511,521,531,541,551,561,571,581,591,601,611,6
     21,631,641,651,661,671,681,691,701,711,721,731,741,751,
```

Listing continued.

The program's only requirement is that the index codes remain exactly as they appear in the **Program listing**. Don't rearrange their order of appearance. In other words, A must appear in line 510, B in line 520, 4 in line 810, and a slash mark (/) in line 900. Don't make substitutions or omit any codes.

To maintain your HELLO program index, be sure to add new titles to HELLO as you place them on your disk. You'll find the savings in time and convenience well worth the time spent keeping the program current.

SELECTOR OPERATION

Disk-Index Selector first sets up the screen display, placing the disk title on row 1 and the following prompt at the bottom of the screen:

HILITE PROGRAM WITH ARROWS;
PRESS <RET>

It then reads the first data item, the number of title rows to be displayed (40), as N and dimensions the array PN$ to this value to contain the index codes and titles to be displayed.

The program then reads in the 40 titles (or just the codes) from the DATA statements and displays them on screen in two columns. HTAB (horizontal tab) and VTAB (vertical tab) commands place the cursor at the appropriate spot on screen before printing; semicolons follow all PRINT commands to prevent unwanted linefeeds. To accommodate 40-column screens, the program truncates each title string to 19 characters.

HT and VT keep track of the horizontal and vertical tab settings for the current cursor postition. PN (program number), a value between 1 and 40, keeps track of your current selection. As you use the arrow keys to move the highlighted bar on screen, all three values change appropriately. Use Applesoft's INVERSE and NORMAL commands to switch screen printing between highlighted and standard characters (lines 300–365).

Line 400 contains the key to cursor control. The GET Z$ command halts program execution until you press a single key. The program stores in Z$ the character corresponding to that key, then resumes execution. (It's more efficient than the INPUT command, which requires that you press the return key, too.)

Using BASIC's ASC function, the program then assigns the ASCII code

Listing continued.

```
      761,771,781,791,801,811,821
      831,841,851,861,871,881,891,
      901
460   RETURN
500   DATA  40
510   DATA  "A. ALPHABET SOUP"
511   PRINT D$;"RUN ALPHABET SOUP"
520   DATA  "B. BOWLING TOURNEY"
521   PRINT D$;"RUN BOWLING TOURNEY"
530   DATA  "C. COLOR CODE COMBO"
531   PRINT D$;"RUN COLOR CODE COMBO"
540   DATA  "D. DANGEROUS DUNGEON"
541   PRINT D$;"RUN DANGEROUS DUNGEON"
550   DATA  "E. KILLER KAVES"
551   PRINT D$;"RUN KILLER KAVES"
560   DATA  "F. "
561   PRINT D$;"RUN HELLO"
570   DATA  "G. "
571   PRINT D$;"RUN HELLO"
580   DATA  "H. "
581   PRINT D$;"RUN HELLO"
590   DATA  "I. "
591   PRINT D$;"RUN HELLO"
600   DATA  "J. "
601   PRINT D$;"RUN HELLO"
610   DATA  "K. "
611   PRINT D$;"RUN HELLO"
620   DATA  "L. "
621   PRINT D$;"RUN HELLO"
630   DATA  "M. "
631   PRINT D$;"RUN HELLO"
640   DATA  "N. "
641   PRINT D$;"RUN HELLO"
650   DATA  "O. "
651   PRINT D$;"RUN HELLO"
660   DATA  "P. "
661   PRINT D$;"RUN HELLO"
670   DATA  "Q. "
671   PRINT D$;"RUN HELLO"
680   DATA  "R. "
681   PRINT D$;"RUN HELLO"
690   DATA  "S. "
691   PRINT D$;"RUN HELLO"
700   DATA  "T. "
701   PRINT D$;"RUN HELLO"
710   DATA  "U. "
711   PRINT D$;"RUN HELLO"
720   DATA  "V. "
721   PRINT D$;"RUN HELLO"
730   DATA  "W. "
731   PRINT D$;"RUN HELLO"
740   DATA  "X. "
741   PRINT D$;"RUN HELLO"
750   DATA  "Y. "
751   PRINT D$;"RUN HELLO"
760   DATA  "Z. "
761   PRINT D$;"RUN HELLO"
770   DATA  "0. "
771   PRINT D$;"RUN HELLO"
780   DATA  "1. "
781   PRINT D$;"RUN HELLO"
790   DATA  "2. "
791   PRINT D$;"RUN HELLO"
800   DATA  "3. "
801   PRINT D$;"RUN HELLO"
810   DATA  "4. "
811   PRINT D$;"RUN HELLO"
820   DATA  "5. "
821   PRINT D$;"RUN HELLO"
830   DATA  "6. "
831   PRINT D$;"RUN HELLO"
840   DATA  "7. "
841   PRINT D$;"RUN HELLO"
850   DATA  "8. "
851   PRINT D$;"RUN HELLO"
860   DATA  "9. "
861   PRINT D$;"RUN HELLO"
870   DATA  ", "
871   PRINT D$;"RUN HELLO"
880   DATA  "- "
881   PRINT D$;"RUN HELLO"
890   DATA  ". "
891   PRINT D$;"RUN HELLO"
900   DATA  "/ "
901   PRINT D$;"RUN HELLO"
```

End of listing.

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for this character to Z. Applesoft uses ASCII codes 8, 21, 11, and 10 for the left-, right-, up-, and down-arrow keys, and 13 for the return key.

Lines 405–425 check whether Z's value corresponds to any of these codes and take appropriate action. For example, line 405 states that if you've pressed the right-arrow key and the cursor is in column 1 (HT = 1), then move the cursor (and highlighted bar) to column 2 (HT = 21) and add 20 to the current program number.

Line 425 states that if you've pressed the return key, jump immediately to lines 450 and 455 and run the highlighted program. PN's current value controls this selection.

The program executes lines 430, 435, and 440 if the key you pressed wasn't one of the five mentioned above. Line 430 checks to see whether the key pressed was an alphabetic character (ASCII codes 65–90 for A–Z). If so, the program subtracts 64 from the ASCII code and assigns a value of 1–26 to PN.

Line 435 checks whether you pressed a numeric key (ASCII codes 48–57 for zero through 9). If so, the program subtracts 21, giving PN a value of 27–36. Finally, if Z has a value between 44 and 47, the program assigns PN a value of 37, 38, 39, or 40. This way, the program assigns PN the proper value (1–40) for the program title selected.

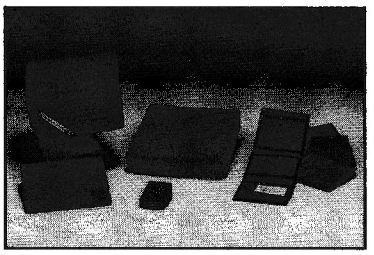
Line 455 uses PN's value to select the proper PRINT D$;"RUN . . ." command to execute. A note of caution: Line 455 will exceed the maximum length allowed in Applesoft BASIC if you insert blank spaces between line numbers, either intentionally or via the arrow keys during editing. Don't use any blank spaces after 511. If you must edit the line, use a POKE 33,30 or the ESC controls to avoid including the margin blanks in lines you copy—or simply retype the line from scratch until it's correct.

CONCLUSION

You should find Disk-Index Selector particularly useful. Be sure to save it as your HELLO program so that whenever you turn on your Apple, it will display the current disk's program-title index immediately. Whenever you change disks, enter RUN HELLO to get the new disk's title index. To run a program from the current disk, simply press the index-code key, or change the highlighted bar and press RETURN. Finally, don't forget to replace the END commands in your BASIC programs with PRINT CHR$(4);"RUN HELLO".

Selector illustrates some general concepts you can apply in other BASIC programs. Your index, for instance, is just one special example of a menu display. Next month I'll present a routine that creates help windows corresponding to highlighted menu selections. ■

Dan Bishop owns and operates a microcomputer consulting business. Write to him at 4124 Beaver Creek Drive, Fort Collins, CO 80526. Enclose a self-addressed, stamped envelope if you'd like a personal reply.



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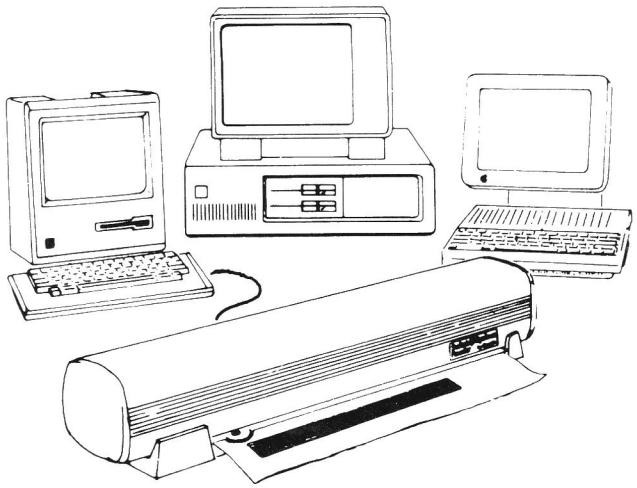
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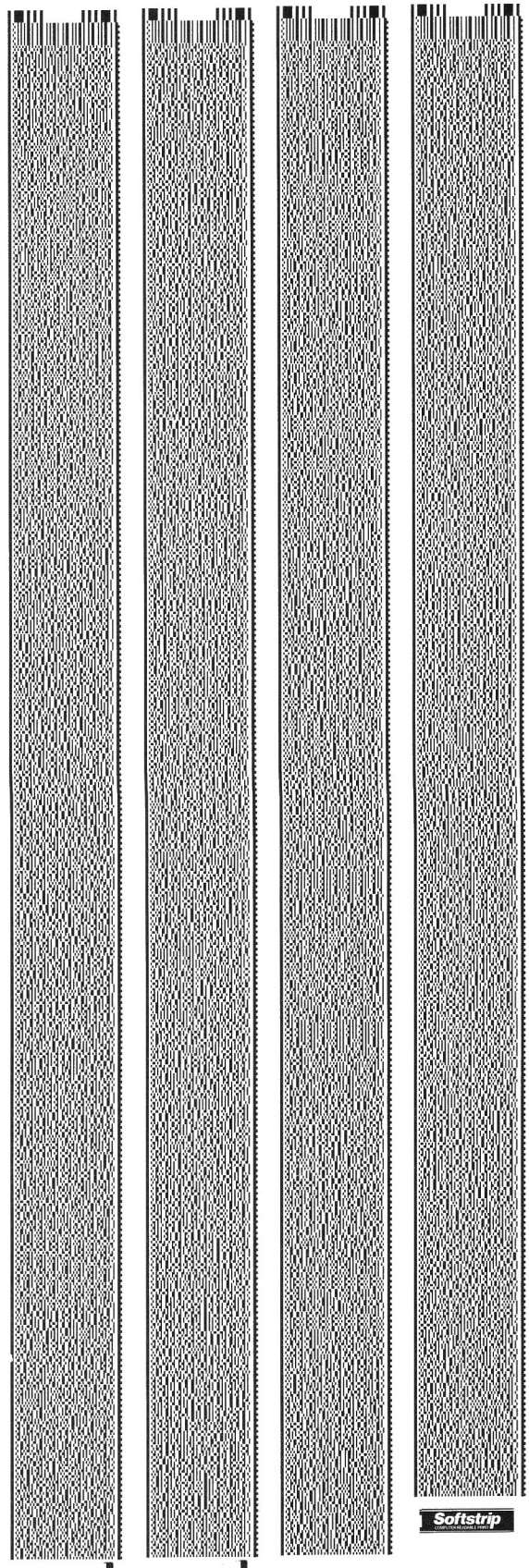
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GS Desk Accessories: Part 2

If you're running a 16-bit Desktop application with pull-down menus, NDAs will pop up on command to help with all sorts of miscellaneous tasks.



by Tom Swan

New desk accessories (NDAs) are so new that the GS originally came with none of these useful utilities. As a consequence, GS owners have bombarded me with numerous questions: How do you use NDAs? What do they do? This month we'll take a look at those questions. (See last month's column for information about classic desk accessories, or CDAs.)

USING NDAs

An NDA is a program, usually with a single purpose, that runs on top of any 16-bit Desktop application. NDAs and CDAs are your constant companions—always available for various duties. As **Figure 1** illustrates, NDA names appear in the Apple pull-down menu below the "About. . ." command, which tells you facts about an application.

To see this menu, click the mouse pointer on the Apple symbol in the upper left corner of the menu bar. (If a program doesn't display a menu bar, it can't use NDAs.) When the menu window opens, hold down the mouse button while dragging the pointer through the name list. You know you've selected an NDA when its name darkens. At that time, release the button to open the accessory.

When you open an NDA this way, its window appears on top of whatever else is now on screen. (Some NDAs might not have windows, although that's rare.) As an example, **Figure 2** shows the window for the clock NDA from Activision's Paintworks Plus. **Figure 3** shows the volumes-NDA window, listing disk-volume names, sizes, and free space for up to 14 devices, the maximum in ProDOS 16.

To close an NDA, click the mouse pointer inside the close box in the window's upper left corner. In **Figures 2** and **3**, this box is the white square in the drag bar, the darkened rectangle above the window's content area. You can open and close NDAs as many times as you want to and in any order. If you quit a program, all NDAs close automatically. If you then run another program, you have to reopen the NDAs you want to use.

Because they run at the same time as other programs, NDAs can remain open while you continue to use other commands. For instance, I often drag the clock NDA to an unused corner of the display. This lets me see the time while I continue working, reminding me all too well of my encroaching deadlines.

ACTIVATING NDAs

In GS Desktop programs, only one window is active at a time. This is true of NDAs as well as an application's windows. If you can see an NDA's window, you know it's active when the drag bar is a solid color, usually black. If you can't see an NDA's window, it's either behind another window or it's closed. In either case, an inactive NDA doesn't stop running; it just prevents you from working inside its window or clicking its close box. An inactive NDA clock, for example, continues to tick while you type text or draw shapes in other windows.

The easiest way to activate an NDA is to click the mouse pointer anywhere inside its window. If another window hides the NDA completely, activate it by choosing its name again from the Apple menu. This brings the NDA window to the front and lets you execute commands, type notes, and perform other jobs. If you reopen an already active NDA this way, nothing happens.

INSTALLING NDAs

Install NDAs just as you do CDAs. Your first task is to locate an NDA disk file. Some program disks have one or more such files; others have none. You may find NDAs on bulletin boards and time-sharing services. To hunt for NDAs, run the GS System Utilities and request a directory of SYSTEM/DESK.ACCS. Or run the GS Program Launcher, double-click BASIC.SYSTEM to start Applesoft BASIC, and type CAT SYSTEM /DESK.ACCS for a disk directory. Files of type $B8 are NDAs.

To add NDAs to any GS system disk, copy $B8-type files to SYSTEM /DESK.ACCS. Transfer NDA files to some or all of your boot disks. If you find an NDA on one disk, copy it to all your application disks. (Do the same with CDAs, too.) Press Open

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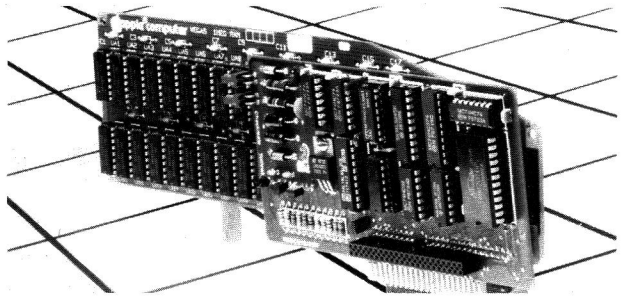
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Many of you have asked how you can use the listings in Mastering the IIGS without investing in expensive development software. What do you do if you're not a programmer? With *inCider*'s permission, I've made the listings from 1987's columns available on disk, including instructions and a few secret goodies not published previously. To order your 3½-inch GS disk, send your check or money order for $15 to Swan Software, GS Master Disk 1987, P.O. Box 206, Lititz, PA 17543, or phone (717)627-1911 with your Mastercard or VISA number. For foreign orders, add $5 postage and handling.□ **—T.S.**

Letters

I purchased a GS in January; this is my first experience with any computer. How can I upgrade AppleWorks to ProDOS 16? No one in my area knows anything about it.

Because AppleWorks is an 8-bit program, it doesn't run under ProDOS 16. Even so, it works just fine on the GS under ProDOS 8. AppleWorks version 2.0 prefers at least 512K of memory; a stock 256K GS can run it, but there's precious little room for creating files.

Use the GS System Utilities to create a boot disk with the following files and folders: PRODOS (file from GS System disk 1.1); SYSTEM (folder from GS System Disk 1.1); APLWORKS.SYSTEM (from AppleWorks 2.0 disk); and SEG.xx (seven files from AppleWorks 2.0 disk).

Make sure you copy the other folders and files within the SYSTEM directory. Other arrangements are possible; this setup leaves about 336K available for files. Reboot and double-click APLWORKS.SYSTEM to run AppleWorks.

Continued

Continued

Where can I find machine-language programs for the GS and instructions on using them? Is there an editor program for entering them?

For GS assembly-language programming, I use the ORCA/M 65816 development system from ByteWorks (4700 Irving Boulevard N.W., Suite 207, Albuquerque NM 87114, 505-898-8183). The package comes with an assembler, linker, and editor for typing programs. It also supports high-level languages such as TML Pascal. ORCA/M is one of the best assembly-language development systems I've used on any computer.

ByteWorks also sells a utility package, a subroutine source-code library, and a program to translate ProDOS 8 Merlin assembly language to 16-bit ORCA-compatible code. All these products come with source code and should give you plenty of 65816 examples to follow.

I copied my Apple Pascal version 1.1 files to my GS 3½-inch drive but the computer wouldn't boot. Also, how can I use the GS' internal clock with AppleWorks 1.3 to load the date automatically?

Software upgrades will solve both your problems easily. You must use Apple Pascal version 1.3 to read and write files on GS 3½-inch disks. Earlier versions of Apple Pascal can't use the ProDOS-protocol interface firmware that runs the new drives.

AppleWorks 2.0 recognizes the GS clock automatically. It also loads itself into extra memory if you have a GS RAM card.

When I run the GS System Utilities, there's no listing for slot 6, drive 2. I have 3½-inch and 5¼-inch disk drives connected to the Smartport. Can you address the ins and outs of various system configurations in a little more detail?

I think I know what your problem is. When daisy-chaining disk drives through the GS Smartport, the 5¼-inch drives must be last in the chain. In other words, the 3½-inch drives should be closest electrically to the computer. You can attach up to four drives to the GS disk port but only two can be the 3½-inch variety. Hook the first 3½-inch drive to the Smartport, attach a second 3½-inch drive to the first, then attach any 5¼-inch drives.□

—T.S.

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- Manual contains sample applications

A/D SPECIFICATIONS

- 0.3% accuracy
- On-board memory
- Fast conversion (.078 MS per channel)
- A/D process totally transparent to Apple (looks like memory)
- User programmable input ranges are 0 to 10 volts, 0 to 5, −5 to +5, −2.5 to +2.5, −5 to 0, −10 to 0.

The A/D process takes place on a continuous, channel sequencing basis. Data is automatically transferred to its proper location in the on-board RAM. No A/D converter could be easier to use.

D/A SPECIFICATIONS

- 0.3% accuracy
- On-board memory
- On-board output buffer amps can drive 5 MA
- D/A process is totally transparent to the Apple (just poke the data)
- Fast conversion (.003 MS per channel)
- User programmable output ranges are 0 to 5 volts and 0 to 10 volts

The D/A section contains 8 digital to analog converters, with output buffer amplifiers and all interface logic on a single card. On-card latches are provided for each of the eight D/A converters. No D/A converter could be easier to use. The on-board amplifiers are laser-trimmed during manufacture, thereby eliminating any requirement for off-set nulling.

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Figure 1. NDA names appear below the "About. . ." command in the Apple menu.

Figure 2. The clock NDA from Paintworks Plus.

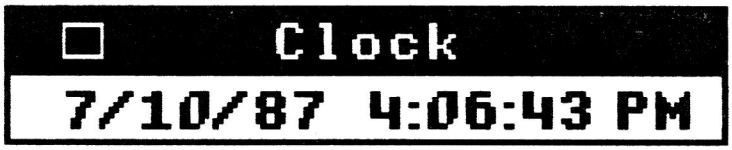
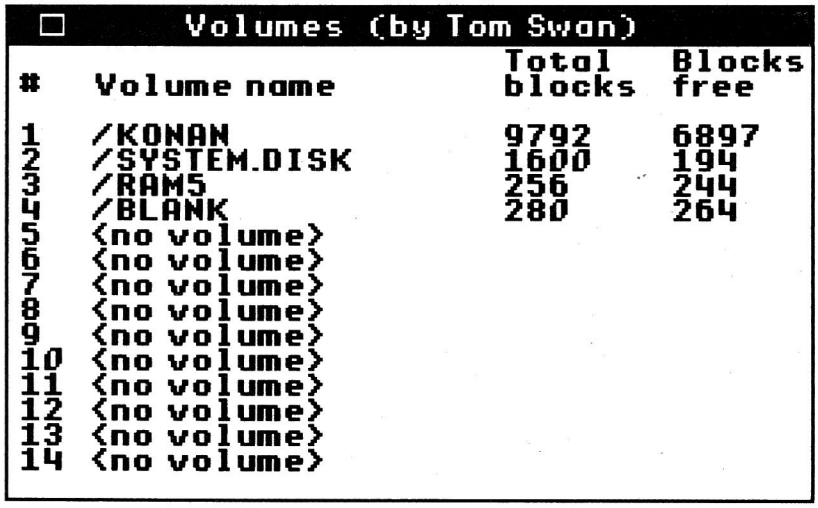


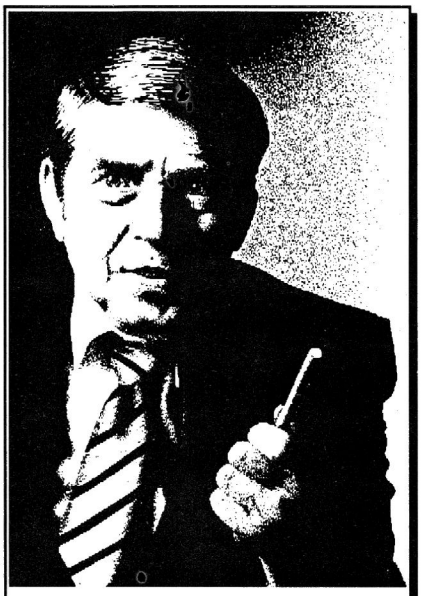
Figure 3. The volumes-NDA window.



apple-Control-Reset to reboot. Or switch off power, wait 30 seconds, then turn your GS back on. Booting prepares NDAs and CDAs for use automatically.

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Tom Swan in the author of Pascal Programs for Data Base Management *and* Mastering Turbo Pascal, *published by Howard W. Sams. Write to Tom at P.O. Box 206, Lititz, PA 17543.*



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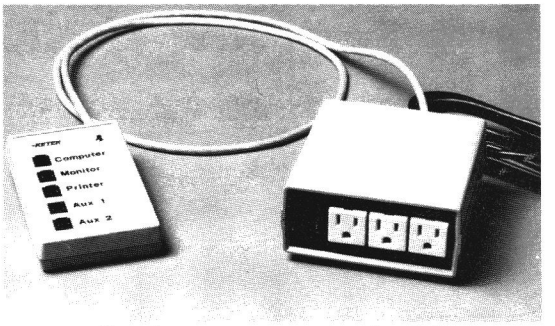
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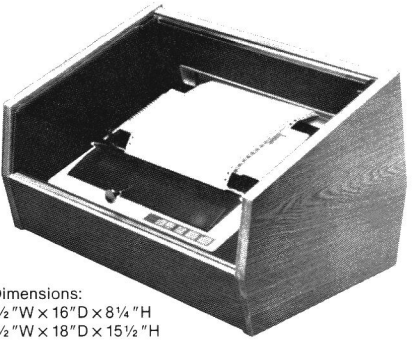
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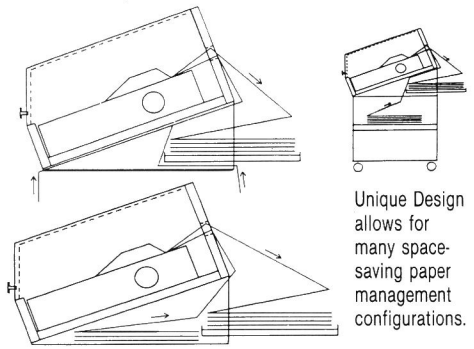
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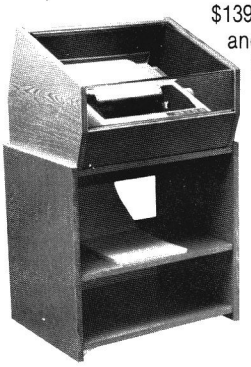
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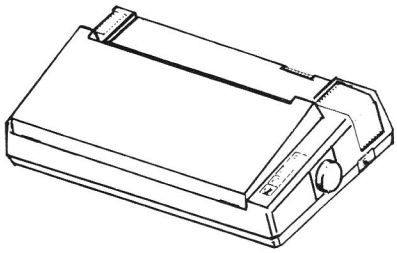
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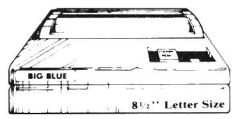
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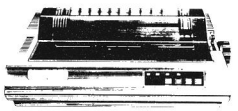
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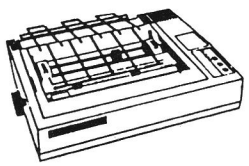
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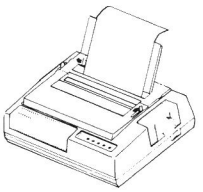
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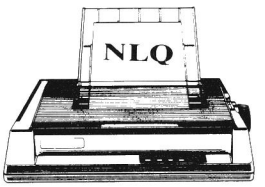
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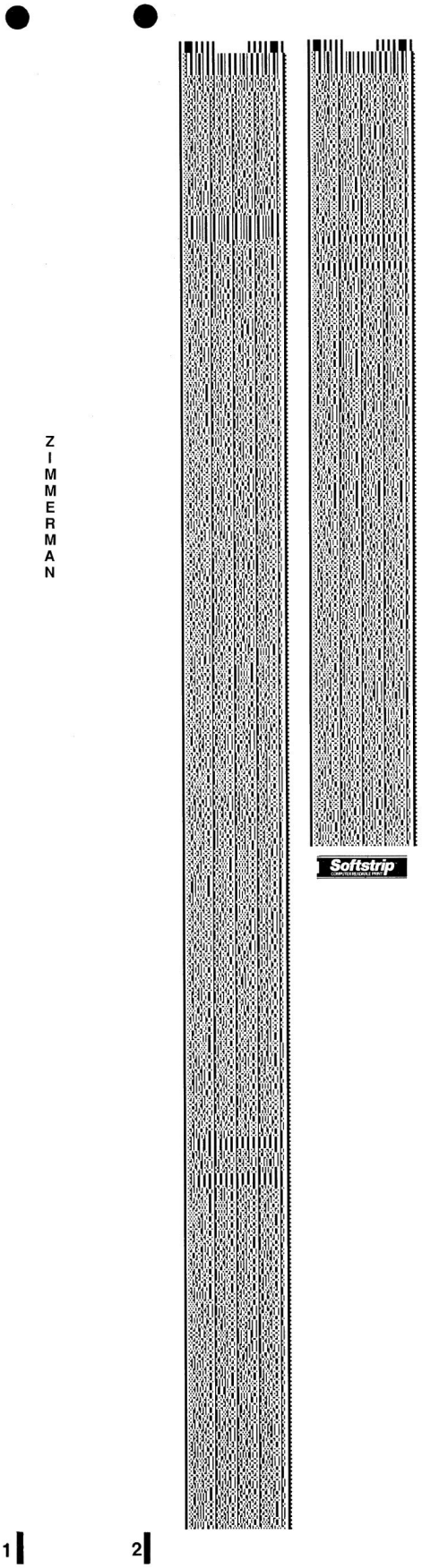
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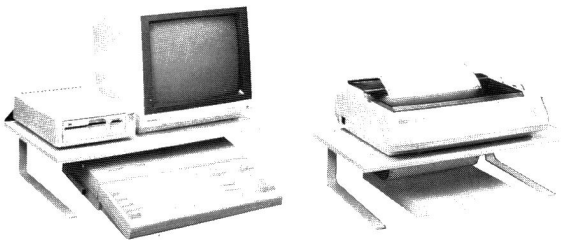
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A World of Information

In every format, from drill-and-practice to databases to adventure simulations, Apple II geography software takes you across the U.S. and around the world.



by Cynthia E. Field

Let's take a "side trip" this month and venture into an area of education that can be either numbingly dull or absolutely engrossing, depending on the way it's presented.

We're talking about geography. Long before Larry became the state "Bird" of Massachusetts, children in elementary school had to memorize the names of all 50 states in addition to their capitals and a host of trivial facts.

ELECTRONIC FLASHCARDS

In the minds of some software developers, things haven't changed much. Most of the dozen or so programs described here take the "try and try again" approach to teaching the facts of geography.

At an average cost of $40 apiece, some of these programs aren't much better than flashcards or cardboard maps. In some respects they're worse, because they may turn a kid off not only to geography, but to using the computer as a learning tool, too.

Still, we don't all favor the same learning style. An electronic-flashcard program—perhaps with a little game thrown in for reward—may be just what your son or daughter needs.

If so, you have at least five programs to consider. Gamco's **States and Capitals** is one such electronic-flashcard program that seems to be a relic from the early days of personal computing. While the Apple world has made tremendous strides in the past ten years, this program still trails in the dust—not in terms of geographic facts, but in terms of user interface.

Gamco's program uses multiple-guess format to quiz the student: He or she has three chances to respond correctly to each question before the program provides the right answer. Educationally, the program is acceptable in most respects. The child learns to name, spell, and abbreviate place names correctly, and locate states, capitals, and major cities in the U.S.

There are problems, though. If you spell Hartford with a lowercase *h*, the program won't accept your answer. Technically, it *is* wrong, but how difficult would it be for the program to say something like "Yes, Hartford is the capital of Connecticut, but don't forget to begin this city's name with a capital letter"?

In addition, the reward is less than thrilling. The game "Snakebite" is nothing more than a low-resolution chase: One color square (you) eludes another (the snake) via the IJKM keys. No joystick, no mouse.

Gamco's **Space Commander: States and Capitals Game** is only a notch better: The quiz and its game reward are integrated. Each time you identify a state correctly, for instance, you get to advance your green- or purple-helmeted space cadet on a simulated game board. Once he accumulates five power packs, he can board his spaceship and take off.

The program requires two players—a problem if you have only one space cadet in your home. And although I don't believe in overrating a student's progress, I find some of the program's responses ("You are wrong. You do not get to move)" excessively blunt.

Brainbank's **The States Game** commits other sins. The user interface features lo-res and solid caps—fine if your child is using an Apple II Plus. For the rest of us who use the IIe, IIc, and IIGS, seeing a lo-res map or a lo-res buffalo on screen is a letdown.

Certain program features seem illogical: I responded correctly to a question about the state founded by Roger Williams—my home state, Rhode Island—and was treated to a computer rendition of *Home on the Range*. Lobsters we have; antelope we do not.

Another disappointment comes from DLM, a company that has published some innovative programs, such as Fish Scales, which teaches measurement of size and distance. (See Field Trip, September 1987, p. 120.) DLM's geography programs are called **U.S. Atlas Action** and **World Atlas Action**.

The problem is there's little "action." In these two programs, the high-resolution maps are well drawn and screen appearance is enticing. But the approach is the same: guessing what state (or city, nation, or continent) is highlighted.

At one point, I began to feel as though the programs were promoting memorization merely for the sake of memorization. In one activity (State Maps), U.S. Atlas displays a map of, say, California, with about a dozen cities highlighted. As each city flashes, you're expected to identify it.

With all due respect to Californians, is it really valuable for elementary-school kids to be able to pinpoint San Luis Obispo? Or Needles? (Wait a minute! Isn't Snoopy's brother, Spike the beagle, from Needles? On second thought, maybe it is important.)

On the plus side, DLM's electronic atlases let you create your own geography games by typing in facts from a geography textbook or homework assignments. If you have the time and inclination to use this feature, it could be a valuable adjunct to classroom activities.

DRILL AND PRACTICE—WITH A TWIST

Being aware of outmoded or otherwise-undesirable features can help you appreciate more innovative products.

Take DesignWare's programs, **States and Traits** and **European Nations and Locations**, for instance. Both teach basic geographic facts, but in a more interactive way.

Instead of simply guessing answers to questions about identity or location, your child uses the keyboard or joystick (or the mouse in the European geography program) as a pointer. To learn the location of states and countries, the student uses these input devices to position an outline of the state or country on a U.S. or European map—like putting puzzle pieces together.

Both Designware programs include well-drawn, colorful maps and an attractive screen layout. Both programs also let you develop your own map games.

Another program that enlivens the study of geography is Compu-Teach's **See the U.S.A.** The package includes eight disks: a program disk, a game disk for each of five regions in the U.S., a disk of sample questions, and a disk for editing questions.

See the U.S.A.'s main appeal is its premise: U.S. geography becomes more interesting when you're planning a trip. The program includes "practice" sessions similar to those in some of the rote-memory geography programs described above—but it goes a step further: It includes activities in which the child begins in one state or capital city and has to make his or her way through contiguous states to a destination. To increase the challenge, you have only a certain amount of time to travel from, say, Maine to Delaware—and the program deducts time automatically for sleeping.

When you arrive at your destination, you see a hi-res, full-screen illustration of a state theme—"Catching softshell crabs in Chesapeake Bay" (Maryland) or "Sailing on Rehoboth Bay" (Delaware).

I have some reservations about See the U.S.A., though. First, when I typed in "NH" instead of "New Hampshire," the program told me, "NH is not a state." What a surprise to the folks who work at *inCider*, and ski buffs, too! Since children are expected to learn state abbreviations as well as names, I'd like to see more flexible responses, such as "NH is the correct state, but can you spell its name?"

The $59.95 price tag bothers me. When you strip away the cardboard

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puzzle of the U.S. (estimated retail value $1.50) and the wall map of the U.S. (another $3 maybe), you're left with an oversized cardboard box containing eight disks of map games and graphics screens.

AROUND THE WORLD WITH GEOGRAPHY DATABASES

Some geography programs are more like databases than quizzes. One such program is **MECC Dataquest: The Fifty States**. This combination geography/computer-literacy program may be more geared toward classroom use, however, since it may not hold a student's interest without a teacher's or parent's guidance and prompting.

Another database is Mindscape's **Continents and Countries** (formerly a CBS title). Like other CBS/Mindscape programs before it (Dinosaur Dig, The Body in Focus, and Sea Voyagers), this one features a customized vinyl keyboard overlay called the "EasyKey." Though somewhat ill-fitting, this novel printed accessory shows all program menu options, including levels of difficulty and on/off sound. Separate overlays for the II Plus, IIe, and IIc and GS are available.

Continents and Countries offers four program activities. In Country Computer, you direct the module to sort through its database to find countries fitting your selection criteria, based on area, population, and per-capita income.

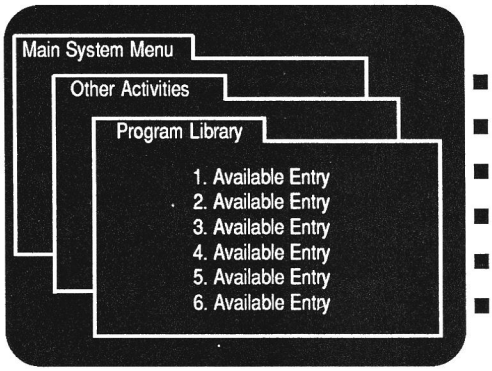
A second activity, Nation Combination, tests your skill at matching countries in terms of common characteristics (religion, language, continent). Flag Frenzy challenges you to sort the banners of countries sharing specific traits. In Geo 21, you compete against the Apple or a friend to become a global land baron.

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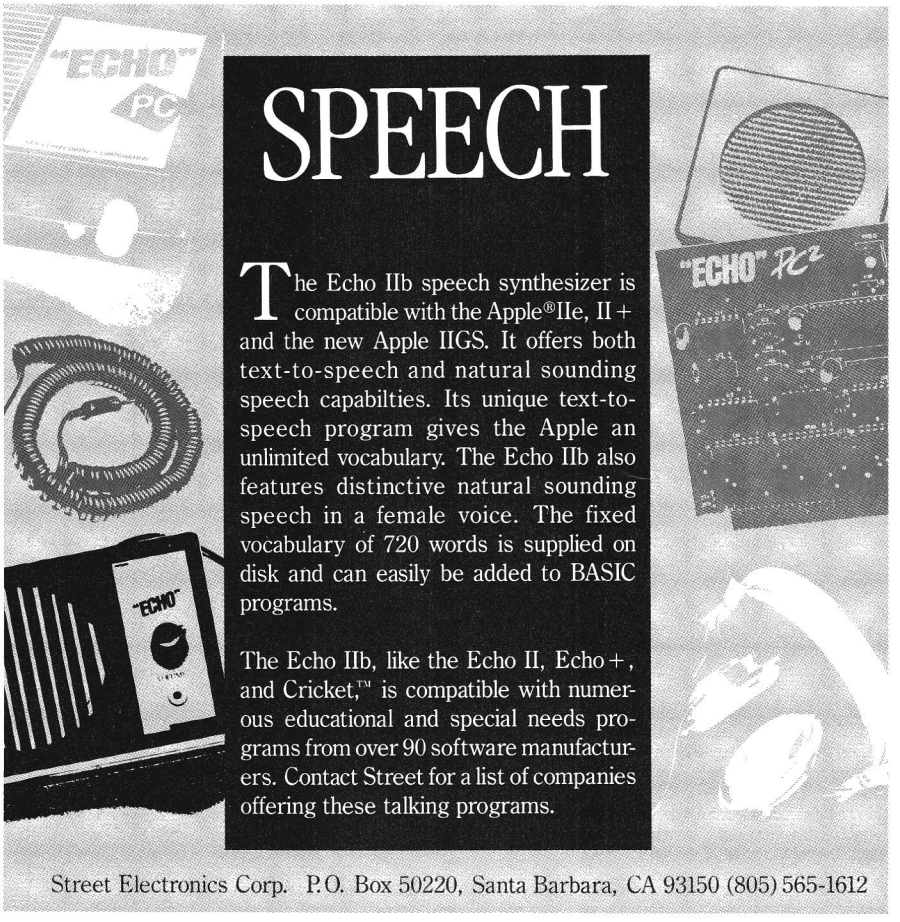
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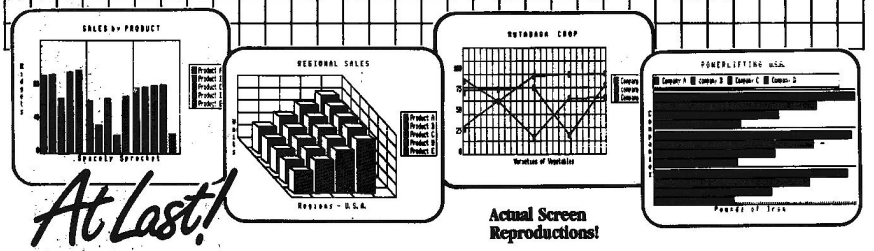
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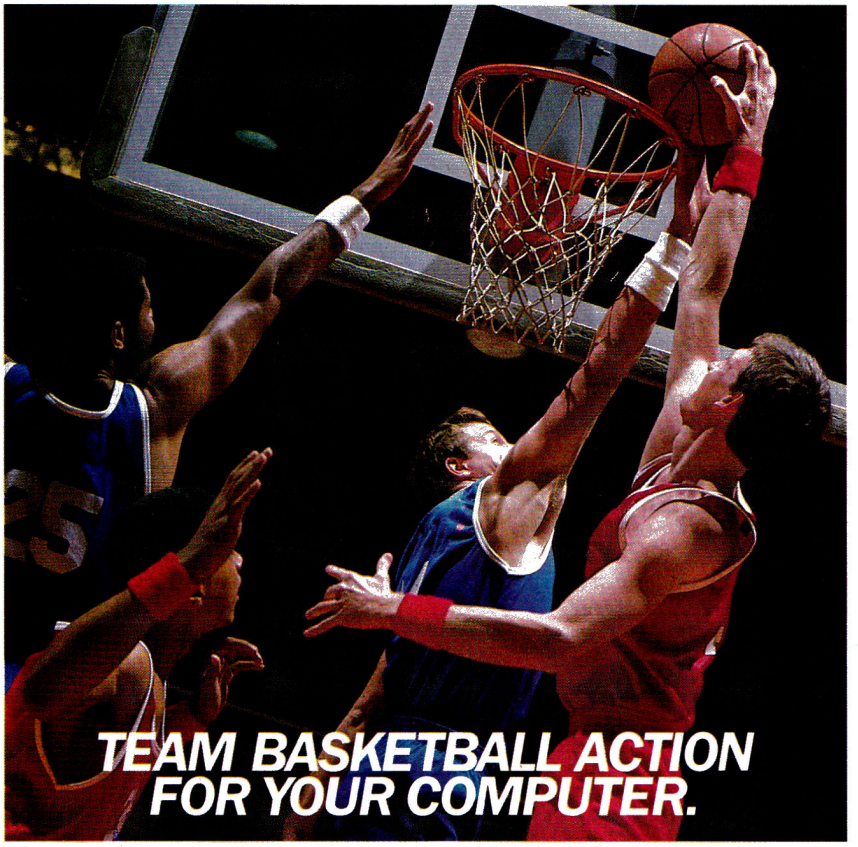
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End

and, perhaps most important, when to seek advice. Along the way, the program keeps track of the pioneers' health and pace, as well as remaining rations and weather conditions.

What could be better than owning such an appealing program at a next-to-nothing price? The publisher has announced the beginning of the "MECC Home Software Club," an offer all parents should look into. It costs $75 to enroll, but in return for this initiation fee, you have a choice of four software programs free of charge (a $120 value). You can get such "must-have" programs as The Oregon Trail, Number Munchers (math), Word Munchers (phonics), and Spare Moments (mazes and puzzles) for less than $20 each.



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CONTEMPORARY ADVENTURES

Broderbund Software's **Where in the World Is Carmen Sandiego?** was the first in this popular genre. Part of the game's fascination is its scenario: You're cast in the role of your favorite detective tracking members of an international crime syndicate all over the world—from Budapest to Kathmandu to Sydney. Carmen is the ultimate criminal, head honcho of V.I.L.E. (Villains' International League of Evil) and leader of a worldwide gang of hoodlums who steal national treasures, then try to elude you by hopping from nation to nation, continent to continent.

You follow in dogged pursuit, visiting nations, looking for clues in hotels and other places in an attempt to determine which member of the gang is responsible for each theft. Dossiers included in the program manual describe the cohort's zany members (including a "free-lance aerobic dancer"). You finger the thief from among a roster of blackguards such as Fast Eddie B., Ihor Ihorovitch, and Katherine "Boom-Boom" Drib. To eliminate irrelevant suspects and zero in on the culprit, you must analyze facts from the criminals' dossiers and combine them with tips from reliable "sources" you encounter during your travels.

Once you have enough clues, you use the program's "crime computer" to pick the suspect and get an arrest warrant. As the crimes become tougher to crack and as your expertise improves, you move up the ranks in the police force.

Along the way, your knowledge of geography improves, too. The Where in the World package includes a copy of *The World Almanac and Book of Facts*, a 928-page compendium of information. Here's where players of all ages can enhance their research skills: Your guests may take you not only from one foreign country to another, but also through the almanac's sections of topography, world flags, commodities, and natural resources. You'll become familiar with important landmarks and cities and with nations' customs and currencies. You might use only a dozen or so pages to help you solve crimes, but it's an essential everyday reference.

Where in the U.S.A. Is Carmen Sandiego? is the second Broderbund game of its kind. *inCider*'s reviewer called it "sensational fun . . . a fast-paced, animated adventure game designed to appeal to sleuths of all ages . . . a fun-filled exploration game that's not only entertaining and educational, but quite addictive" (February 1987, p. 33). The Where in the U.S.A. package includes a "scrapbook" of the gang's mementos (members include folks like Heidi Gosikh and Polly Esther Fabrique), a map of the United States, and a copy of *Fodor's USA*.

I've saved the best geography news until last. Polarware (formerly Penguin Software, publisher of Graphics Magician) has just released a whole series of global spy-adventure games that teach geography, mapping, and strategy.

At least as addicting as Carmen Sandiego, **The Spy's Adventures** series features Dr. Xavier Tortion,

No Mac



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 *only* warranty (all your money back if you're not satisfied), and it takes up the least shelf space. The only thing it doesn't have is the most subscribers. Yet.

II cue #20

When you use open-apple/control/reset to "cold boot" an Apple IIgs, nothing changes about the IIgs RAMdisk—even if you have changed its size in the control panel. This design prevents you from destroying any data on the RAMdisk during a cold boot. If you really do want to reconfigure the RAMdisk you must either turn the computer off or press option/control/reset/. This starts the IIgs self-test. Then press open-apple/control/reset and your RAMdisk will be erased and reconfigured. For more see "Reboot, cold reboot, frigid reboot" in the July 1987 ***Open-Apple***, page 3.48, and "Another frigid reboot" in August, page 3.53.

From our fan mail:

I find ***Open-Apple*** to be kind of depressing. See, I read it within an hour of finding it in my mailbox, and get depressed when I realize it is another month until the next one arrives. I have to learn to spread it out more...like going slow on the frosting!

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world-infamous jewel thief. Each program, priced at only $17.95, focuses on one world region: North America, Europe, South America, Asia, Africa, or the Pacific Islands.

Like Broderbund's adventures, Polarware's will teach you about locations, landmarks, currency, and cultural facts as you pursue Dr. X. Graphics screens are excellent, accurately depicting the Royal Mounted Police in Quebec or the Boston statue commemorating Paul Revere's ride.

In The Spy's Adventures you can play alone or with someone else, cooperatively (Spy Network) or competitively (Spy Against Spy). The game is multilayered: You have to find the jewels, then use them to pay off informers who give letter clues to Dr. X's whereabouts. Once you put these hints together to spell out a word or phrase (much like *Wheel of Fortune*), you can determine Dr. X's hiding place and travel to capture him.

Attractively designed, executed, and priced, The Spy's Adventures series is a "must buy" if you want to enliven the subject of geography for your children—and yourself.

FOR THE YOUNGER SET: AN UPDATE

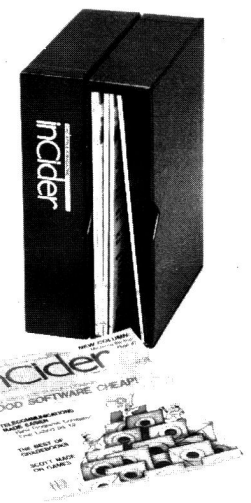
Muppet Learning Keys, the child-style keyboard I described in the July 1987 Field Trip (p. 82; see also "Early-Learning Software," September 1987, p. 56, and Reviews, April 1985, p. 98), has survived with nary a scratch after a month in four-year-old Janelle Geaber's hardware/software "testing lab."

Janelle didn't exactly crash-test Muppet Learning Keys, but she was caught using it with (gasp!) sticky fingers. According to Janelle's Mom, Liz, cleanup was a snap. Liz loves the way the letter keys are arranged in alphabetical order, too—Janelle was having a lot of trouble with QWERTY.

Thanks to the keyboard's generous size and long cord, Janelle doesn't need pillows to reach it; she just supports it on her lap. Perhaps the best endorsement is that having borrowed my evaluation unit, the Geabers intend to order their own Muppet Learning Keys. If you have small children, look into this alternative input device.■

Write to Cynthia E. Field at 60 Border Drive, Wakefield, RI 02879. Enclose a self-addressed, stamped envelope if you'd like a personal reply.

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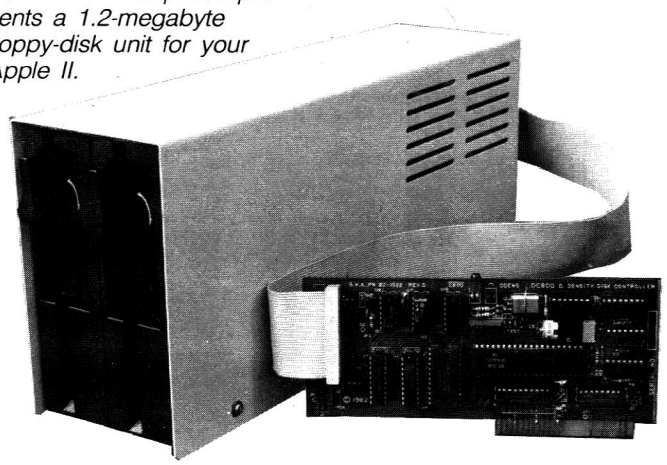
edited by Ellen Otis

Hardware

GONE BUT NOT FORGOTTEN

If you still have disks using older operating systems such as CP/M, SOS, and Pascal, or envy the **1.2-megabyte floppy disks** of the IBM PC AT, check out Borderline Enterprises' $995 drive unit. Besides supporting your favorite older DOS as well as present-day ProDOS, the Borderline controller card also reads data from some 8-inch disks and saves their information on 5¼-inch disks. The system includes two 5¼-inch drives with their own power supply, cable, controller, and choice of operating systems. The controller card is available separately for $395, also with choice of DOS. Contact Borderline Enterprises, P.O. Box 1290, San Marcos, CA 92069, (619) 480-1032 or circle Reader Service number 361 for more information.

Borderline Enterprises presents a 1.2-megabyte floppy-disk unit for your Apple II.



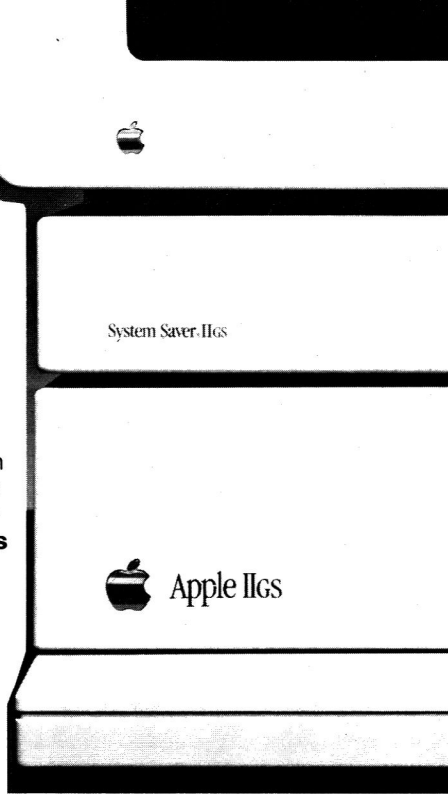
THE PARALLEL IMAGE

Using the new Grappler C/Mac/GS, your Apple can now work with a wider variety of printers. A **serial-to-parallel converter** with built-in emulation code and disk-based utilities, the Grappler "tricks" your parallel printer into performing as an Apple ImageWriter II. This universal interface supports color printing and works with most popular printers through a simple switch setting.

The unit comes with separate packages for the GS and IIc. The former includes a classic desk accessory, that lets most programs perfom a number of screen-dump options, such as enlargement, rotation, and inverse imaging; the IIc software lets you print any image saved to disk with these same options. The Grappler C/Mac/GS sells for $99 including cables, software, and documentation. Contact Orange Micro, Inc. at 1400 North Lakeview Avenue, Anaheim, CA 92807, (714) 779-2772. Circle Reader Service number 358 for more information.

BEAT THE HEAT

Kensington's System Saver IIGS combines a **cooling fan and four filtered power outlets** to keep your GS cool and running smoothly. The unit fits between the CPU and monitor, its bottom forming a seal with the top of the GS case to draw air up and through the computer for complete circulation. Power outlets for your computer, monitor, and two peripherals are operated by two front-mounted switches and guarded by a surge suppressor and noise filter. The System Saver costs $99.95 from Kensington Microware Ltd., 251 Park Avenue South, New York, NY 10010, (212) 475-5200. Circle Reader Service number 360 for more information.



The System Saver combines a cooling fan, noise filter, surge suppressor, and power outlets to help keep your GS running smoothly.

IN TRIPLICATE

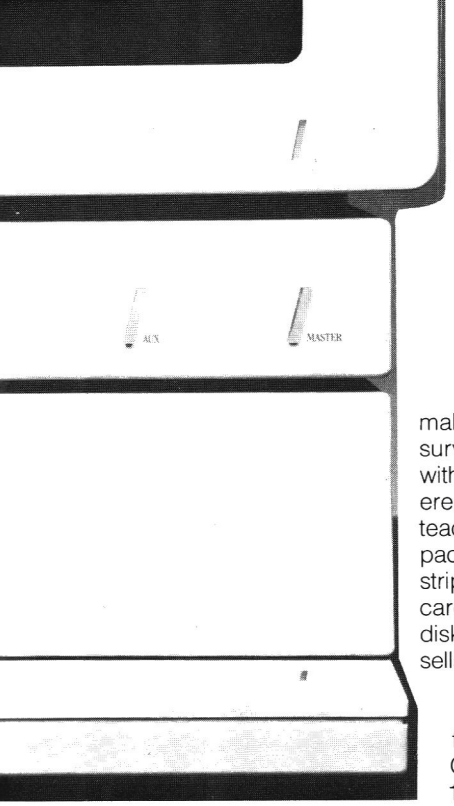
The newest Scooter, the Model SPB256 DataSwitch/Multibuffer, lets you use up to **three computers with one printer**. With its built-in 256K buffer, the unit can store approximately 128 pages of data from any or all of the computers. Its four-position front-panel controls let you select automatic on-line sequencing for all computers or just one. Retailing at $295, the 2.3-pound Scooter has a 36-pin Centronics parallel interface. For more information, contact Scooter Products, Ohm/Electronics Inc., 746 Vermont Street, Palatine, IL 60067, (800) 323-2727, or circle Reader Service number 359.

Software

ELEMENTARY, WATSON!

Join Sherlock Holmes, Dr. Watson, the lovely Irene Adler, and the mysterious Professor Moriarty to solve 30 **baffling crimes** in Victorian London. Playing the game 221B Baker Street, you scurry throughout the city, competing with other detectives to recover information and piece together the solution. The game, designed by Datasoft, is distributed for $34.95 by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (415) 571-7171. Circle Reader Service number 355 for more information.

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



GS GOODS

Created exclusively for IIGS programmers, Micol Macro is an integrated monitor/shell, full-screen text editor and **macro-assembler package** for the 512K GS. Examples in the documentation help you master 65C816 assembly language as well as Micol Macro's variety of tools. The system costs $69.95 plus $5 shipping from Micol Systems, 9 Lynch Road, Willowdale, Ontario, Canada M2J 2V6, (416) 495-6864. Circle Reader Service number 351 for more information.

WILD KINGDOM

The National Geographic Society has released its first software program, introducing children in grades 3–5 to the **animal world**. Adventures With Charts and Graphs: Project Zoo consists of three programs—Zoo Goer, Zoo Collector, and Zoo Builder ($45 each)—that integrate math and science tools with problem-solving techniques to develop skills in graphing, measurement, research, and map interpretation, as well as increasing students' awareness of animal characteristics and survival needs. Along with activity sheets, reference booklets, and teacher's guides, each package includes a filmstrip, library catalogue cards, and a backup disk. The complete kit sells for $139.50; a single unit is available on 30-day approval from the National Geographic Society, 17th and M Street N.W., Washington, D.C. 20036, (202) 857-7378. For more information, circle Reader Service number 352.

THE GOOD, THE BAD, AND THE GS

PBI Software's first **action-fantasy game**, The Tower of Myraglen, combines **digitized sound** with super-hi-res graphics to bring the fantasy genre to the IIGS. As the last remaining Knight of Justice, you must save a kingdom from evil by evading monsters, solving riddles and puzzles, and finally retrieving a magic medallion from deep within the tower.

The game requires 512K of RAM and costs $54.95; an RGB color monitor and MDIdeas' SuperSonic stereo card are recommended. For more information, contact PBI Software Inc. at 1163 Triton Drive, Foster City, CA 94404, (415) 349-8765 or circle Reader Service number 353.

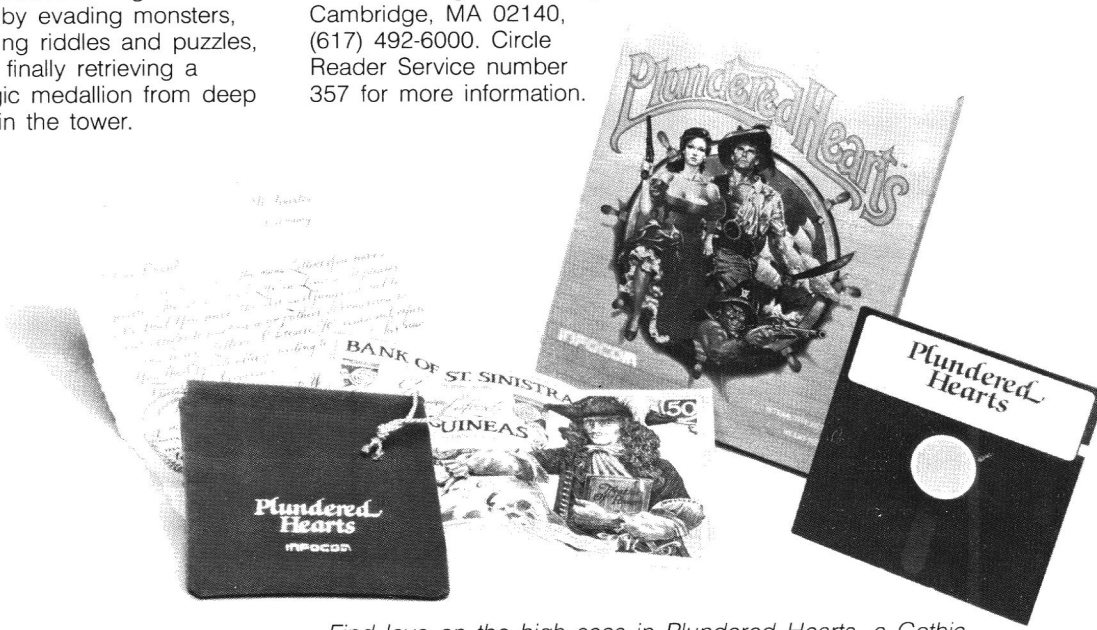
ROMANCING THE APPLE

Fate, destiny, and passion combine in Plundered Hearts, Infocom's first **interactive romance**. As a virtuous young woman sailing Caribbean waters en route to the West Indies, you must cope not only with the dangers of the sea and the threat of pirates, but with your heated rapture for the dashing pirate captain. Ride the waves and feed your fantasy for $34.95 from Infocom Inc., 125 CambridgePark Drive, Cambridge, MA 02140, (617) 492-6000. Circle Reader Service number 357 for more information.

THE MAIN MENU

Why is broccoli healthier than beer? With help from Sunburst Communications' Food for Thought, students in grades 6–12 can explain the answer as they "shop" throughout a supermarket and look for items with specific **nutritional value**.

Searching and sorting through the program's database, kids can investigate 17 fields of information, ranging from calories and vitamins to sodium and carbohydrates. A change option lets you add to the 300 foods included. The program costs $65, with an 80-page teacher's guide and backup disk. For more information or a 30-day preview, contact Sunburst at 39 Washington Avenue, Pleasantville, NY 10570, (914) 769-5030 or circle Reader Service number 350.



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Resources

YOU CAN SAY THAT AGAIN

Step-by-step instructions for building either a stand-alone or computer-based **speech synthesizer** are described in *Chip Talk: Projects in Speech Synthesis*. Beginning with an introduction to the principles of speech and speech synthesis, the book then details several different projects with BASIC programs for the Apple II. The volume also has illustrations, a glossary, and appendices containing a list of parts suppliers. The 224-page reference is available in paperback ($14.90) and hardcover ($24.95) editions from Tab Books Inc., P.O. Box 40, Blue Ridge Summit, PA 17214, (717) 794-2191. Circle Reader Service number 362 for more information.

Product Updates

- **Mindscape's Educational Division** has established a site-licensing policy for 55 of its titles. Price is based on the number of sites within a particular district. For more information, contact Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062, (312) 480-7667.
- Eighteen new programs, ranging from word and math games to catalog-printing and hardware-testing utilities, have been added to **Public Domain Software on File**. The programs, which are on two disks, increase the number in the collection to a total of 22 disks. For more information, contact Facts On File, Inc., 460 Park Avenue South, New York, NY 10016, (212) 683-2244.
- Virgin Games, a British company specializing in entertainment software, is entering the American market through a sales and distribution agreement with Electronic Arts. Its **Scrabble** game will be the first American entry on its "Leisure Genius" label. Find out more by contacting Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (415) 571-7171.

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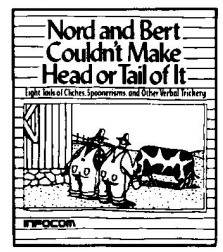
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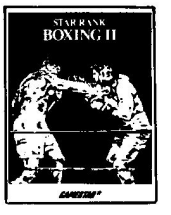
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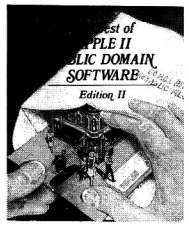
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THE APPLE II MAGAZINE

The Return of Wizardry: A Super Sequel?



by Scott Mace

"The Return of Werdna, the fourth Wizardry scenario, is the really exciting news this month."

The first three **Wizardry** scenarios dominated the Apple II software best-seller lists and spawned endless imitators. Now Sir-Tech has introduced a fourth exciting Wizardry story, **The Return of Werdna** (P.O. Box 245, Ogdensburg, NY 13669, 315-393-6633, $49.95).

Polished for three years by Bob Woodhead and adventurer supreme Roe R. Adams III, The Return of Werdna is the answer to everybody's wishes: a great new Wizardry game that also tackles head-on the problem of most sequels. You usually have to play all previous installments of a series first to acquire "experienced" characters who'll keep you playing in later adventures—but Werdna's different.

STRIKING A NERVE

It's been a while since the last new Wizardry adventure appeared. That's given the competition time to catch up, with new games and sequels. **Ultima** (Origin Systems, 136 Harvey Road, Londonderry, NH 03053, 603-644-3360), **The Bard's Tale** (Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, 415-571-7171), **Phantasie** (Strategic Simulations, 1046 North Rengstorff Avenue, Mountain View, CA 94043, 415-964-1353), and many other series borrow from the basic Wizardry system, a Dungeons & Dragons-type world that requires you to create and manage a party of characters, solve perplexing riddles and puzzles, fight epic battles, and decipher bamboozling mazes.

As I mentioned in "Sequels: Complexity and Realism" (August 1987, p. 97), you can often transfer the characters generated in games like Wizardry to their sequels or even to other games. This development has forced publishers to make their stories more difficult, thus excluding novices from play, as gamesters import "experienced" characters who need challenges.

That column on sequels apparently struck a nerve. Right or wrong, it seems that many of you are finding ways around this problem of how to develop experience fast. I received a letter from one reader who claims he's successfully "broken" the system in The Destiny Knight (The Bard's Tale II) and has given his characters unbeatable skills. Another letter contained an advertisement for a company that sells all-powerful Wizardry characters on disk.

One obvious solution is for game players to accept all-new scenarios that don't use the characters of yore. Jumping into this fray is **Might and Magic Book One: Secret of the Inner Sanctum**, from New World



Origin's Ultima series (left) and Electronic Arts' Bard's Tale games (below) borrow from the basic Wizardry scenario. Below center, Sir-Tech's infamous villain, Werdna the Wizard.

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MACE ON GAMES

Computing, distributed by Activision (2350 Bayshore Parkway, Mountain View, CA 94043, 415-960-0410, $49.95). This adventure, created by Jon van Canegham, boasts five towns, six castles, 20 outdoor areas, 13 levels in its dungeon, an astral plane, and a "soul maze." It's great fun in the Wizardry tradition.

The Return of Werdna pulls a couple of switches, too. First, previous Wizardry characters are of no use to you here. Second, you play the bad guy. Adams calls this a "mirror" dungeon, where you take the villain's perspective and your enemies are valiant knights, paladins, magi, and hobbits. But you'll discover that villains are people, too—Werdna's thrown into the bottom of a ten-level prison maze and you can't help feeling sorry for the guy.

Even more intriguing, the "good guys" opposing you were generated by Wizardry players themselves. Over the last four years, many people have sent Sir-Tech damaged disks for repair. Woodhead says the company kept copies, sorted the characters according to level of experience, and placed them throughout the dungeon.

Werdna himself is very weak at the start and gains power slowly. Through a system of portals, though, Werdna can call up legions of monsters from time to time. Interestingly, Werdna remembers all the spells that were at his disposal in previous Wizardries—all he needs is the energy to cast them.

A note of warning: Although it's not like other sequels, The Return of Werdna is meant for expert Wizardry players anyway; only those with advanced skills in Wizardry combat will get very far.

If I have a criticism, it's that The Return of Werdna still requires you to do your own mapping. Phantasie is the only fantasy role-playing game that does it for you. But Werdna may need such a feature even more—some of the mazes, such as the terraced pyramid and the "Cosmic Cube," are three-dimensional.

It's a big game, too—the first tester at Sir-Tech took 150 hours to finish it. That figure's a little deceptive, though. There are few master Wizardry players, and you could spend months playing this game; most people who try it will never finish it. Will you still find it worthwhile? That depends on your point of view. I find the experience of playing most computer games sufficient, and I don't lose sleep if I don't finish. On the other hand, it's great to win.

Among Werdna's outstanding features is its ability to save eight games to disk, even in the midst of a maze. It's a welcome change: In previous Wizardries, you couldn't save your position once you entered a maze; you had to retrace your steps to start again.

Every time you save a game or leave a level, though, your rivals regenerate there. Woodhead has a keen sense of game balance and takes both kinds of players into consideration: those who want to do nothing but fight monsters and those of us who demand an intellectual challenge, as well.

By recognizing and attempting to solve some of the biggest problems of fantasy games, Woodhead and Adams have once again proven themselves leaders in the industry.■

Scott Mace is editor and publisher of Microcosm, *a monthly newsletter on computer games. You can write him at 6510 Copper Ridge Drive #T-1, Baltimore, MD 21209.*

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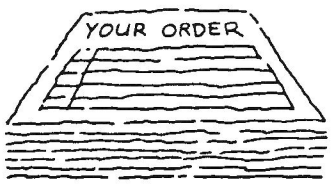
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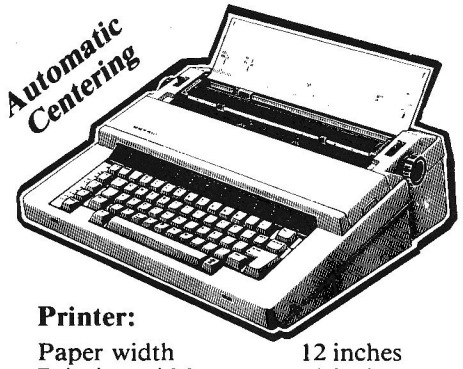
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Two-Byte PEEKs and POKEs

by Arthur Levesque

Handling a big number often requires POKEing or PEEKing two consecutive addresses, since 1 byte can hold only values zero to 255. For example, PRINT PEEK(-21902) + PEEK(-21901) * 256 shows the starting address of the last BLOADed file; POKE 103,1 : POKE 104,64 sets the start-of-Applesoft pointer to 16385 ($4001), just above hi-res page 1. Rather than break up a big number and POKE it into different addresses, or access two addresses and combine the contents, it's easier to use just one command.

With the PEEK/POKE program presented in **Listing 1**, one statement accesses two addresses. &POKE [address],[value] breaks the [value] (a number, variable, or expression) into 2 bytes and POKEs the bytes into [address] and [address]+1. For example, instead of typing POKE 103,1:POKE 104,64, you can use &POKE 103,16385.

The program also redefines the USR( ) function as a 2-byte PEEK. USR(address) PEEKs [address] and [address]+1 and returns the combined value. For example, you can use USR(-21902) instead of PEEK(-219020 + PEEK(-21901) * 256.

The USR( ) function requires a value from -32768 to 32767, so subtract 65536 if you're PEEKing addresses over 32767. USR( ) also returns a value in the same range; if the result is negative, you can add 65536. The DOS 3.3 FP command disables the USR( ) function; &PEEK enables it.■

Listing 1. Two-byte PEEK/POKE.

```
*0300:A9 4C 8D F5 03 85 0A A9
*0308:18 8D F6 03 A9 61 85 0B
*0310:A9 03 85 0C 8D F7 03 60
*0318:A2 00 A0 00 84 3A B1 B8
*0320:85 1C C9 B9 D0 2A 20 C0
*0328:DE 20 67 DD 20 52 E7 84
*0330:06 85 07 20 BE DE 20 67
*0338:DD 20 52 E7 A2 00 85 08
*0340:98 81 06 E6 06 A5 06 D0
*0348:02 E6 07 A5 08 81 06 60
*0350:A9 4C 85 0A A9 61 85 0B
*0358:A9 03 85 0C A9 E2 4C C0
*0360:DE 20 0C E1 A5 A0 A4 A1
*0368:84 06 85 07 A0 00 B1 06
*0370:85 08 C8 B1 06 A4 08 20
*0378:F2 E2 60
```

Applesoft MOD

by Arthur Levesque

Among the commands Apple left out of Applesoft is the MOD function. Integer BASIC enthusiasts may recall that the MOD function returns the remainder of a division operation. For example, 13 MOD 3 returns a one, because 13 divided by three equals four with a remainder of one. This function is easy to duplicate in Applesoft. The program in **Listing 2** works in DOS 3.3 and ProDOS.

Type in **Listing 2** and BRUN it. The syntax for using the Applesoft MOD function is & [variable] = [value] @MOD [value], where [variable] is any real, integer, scalar, or array variable and [value] indicates any number, variable, or expression with a value from zero to 255.

The following examples illustrate some legitimate uses of the MOD function:

```
&A% = 13 @MOD 3
&X(2) = 100 @MOD 7*X
&Y = N1 @MOD N2
```

Don't use zero for the second value, since dividing by zero results in an illegal-quantity error.■

Listing 2. Applesoft MOD.

```
*0300:A9 4C A2 10 A0 03 8D F5
*0308:03 8E F6 03 8C F7 03 60
*0310:20 E3 DF 85 85 84 86 A9
*0318:D0 20 C0 DE A5 12 48 A5
*0320:11 48 20 F8 E6 AD 1F C0
*0328:86 06 A2 04 BD 51 03 20
*0330:C0 DE CA D0 F7 20 F8 E6
*0338:4C 5B 03 86 07 A5 06 C5
*0340:07 D0 08 A0 00 20 01 E3
*0348:4C 5B DA 90 0A E5 07 38
*0350:B0 ED 44 4F 4D 40 00 A8
*0358:38 B0 EA AD 1F C0 E0 00
*0360:D0 D9 4C 99 E1
```

Write to Arthur Levesque at 60 Homestead Avenue, North Smithfield, RI 02895.

Universal File Opener

by Brian L. Zimmerman

File reading can be a complicated business. With a Universal File Opener (UFO) program, though (see **Listing 3**), you can open, read, and display any type of ProDOS file. (I wrote UFO on an Apple IIc, but it should run on a IIe, as well.)

Except for control codes, which appear as periods, UFO displays each byte value in the file as its corresponding ASCII text character. You can select either 40- or 80-column format or send the listing to your printer, and view the disk catalog, including subdirectories.

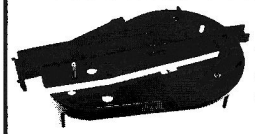
The Ttype parameter added to the ProDOS OPEN command in line 520 lets UFO open any file type. As Todd Koetje has noted in Apple Clinic ("Open-and-Read Case," May 1987, p. 20), the "type" can be any three-character file type or a hexadecimal number such as $00. Although *BASIC Programming with ProDOS* doesn't mention it, you can also represent the file type with a decimal-number equivalent (no dollar sign).

The following lines, for example, all mean the same thing to your Apple; you can use any one of them to open an AppleWorks word-processor file:

```
PRINT CHR$(4);"OPEN FILENAME,TAWP"
PRINT CHR$(4);"OPEN FILENAME,T$1A"
PRINT CHR$(4);"OPEN FILENAME,T26"
```

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Listing 3. Universal File Opener.

```
100   REM
110   REM
120   REM
130   REM
140   REM
150   REM
160   REM
170   REM  UFO OPENS, READS, & DISPLAYS IN ASCII TEXT
180   REM   ANY TYPE OF PRODOS FILE (TXT, AWP, etc).
190   REM  CONTROL CODES ARE DISPLAYED AS PERIODS.
200   REM ================================================
210   TEXT : HOME :RET$ =  CHR$ (13)
220  D$ =  CHR$ (4):F$ =  CHR$ (21):BEEP$ =  CHR$ (7)
230   PRINT "              WELCOME TO UFO!": PRINT
240   PRINT "USE CONTROL-S TO STOP/START CATALOG"
250   PRINT "    CONTROL-C FOR OTHER FILE LISTINGS": PRINT
260   INPUT "HOW MANY COLUMNS (40 OR 80)?  ";C$
270   IF C$ = "40" THEN  PRINT F$: GOTO 300
280   IF C$ <  > "80" THEN  PRINT BEEP$: GOTO 260
290   PRINT D$;"PR#3"
300   HOME :NB = 0: ONERR  GOTO 610
310   PRINT "PLEASE INSERT YOUR DISK IN DRVE #1 &"
320   PRINT "   HIT <RETURN> FOR CATALOG, OR"
330   PRINT "   ANY OTHER KEY TO CONTINUE";: GET K$: PRINT
340   IF K$ = RET$ THEN  PRINT : PRINT D$;"CAT,S6,D1"
350   PRINT D$;"PREFIX,S6,D1:  REM  SET PREFIX
360   PRINT D$;"PREFIX": INPUT PR$: REM  READ PREFIX
370   PRINT "CATALOG A DIRECTORY? (Y/N): ";: GET K$: PRINT : PRINT
380   IF K$ <  > "Y" AND K$ <  > "y" THEN 410
390   INPUT "ENTER DIR NAME: ";DIR$
400   PRINT D$;"CAT ";PR$;DIR$: GOTO 370
410   PRINT "ENTER FILENAME OR DIR.NAME/FILENAME"
420   INPUT "OF FILE TO BE READ: ";N$: PRINT : IF N$ = "" THEN 300
430   GOSUB 870: REM  SEE IF FILE EXISTS & GET TYPE (FT$)
440   PRINT "PRINT TO SCREEN (S), OR PRINTER (P)? ";
450   GET O$: PRINT : PRINT
460   IF O$ = "S" OR O$ = "s" GOTO 520
470   IF O$ <  > "P" AND O$ <  > "p" THEN  PRINT BEEP$: GOTO 440
480   PRINT : PRINT "PLEASE TURN ON YOUR PRINTER &"
490   PRINT "PRESS ANY KEY WHEN READY.": GET K$
500   PRINT F$: REM  TURN OFF 80 COL BEFORE PR#
510   PRINT D$;"PR#1"
520   PRINT D$;"OPEN ";N$;",T";FT$
530   PRINT D$;"READ ";N$
540   GET X$:Z$ = X$:NB = NB + 1: IF X$ = "" THEN 540
550   IF  ASC (X$) < 32 THEN Z$ = ".": REM  IF CTRL CODE,
      PRINT PERIOD
560   IF X$ = RET$ THEN  PRINT Z$: GOTO 540
570   PRINT Z$;: GOTO 540
580   REM  ************************
590   REM   ERROR HANDLING ROUTINE
600   REM  ************************
610   PRINT D$;"PR#0"
620   IF O$ = "S" OR O$ = "s" THEN 660
630   IF C$ = "40" THEN 660
640   PRINT D$;"PR#3"
650   REM  GET ERROR CODE & LINE #
660  E =  PEEK (222):L = PEEK (218) +  PEEK (219) * 256
670   IF E = 255 THEN 790: REM CTRL-C STOPPED LISTING
680   PRINT D$;"CLOSE ";N$: PRINT : PRINT
690   PRINT "FILE CLOSED AFTER ";NB;" BYTES."
700   POKE 216,0: CALL  - 3288
710   IF E = 255 OR E = 5 THEN 750
720   PRINT "ERROR CODE ";E;" AT LINE #";L
730   PRINT "REFER TO PROGRAMMING MANUAL, APPENDIX E,"
740   PRINT "   OR TO PRODOS MANUAL, APPENDIX C.": PRINT
750   PRINT "WANT ANOTHER RUN? (Y/N): ";: GET Q$: PRINT
760   IF Q$ = "Y" OR Q$ = "y" GOTO 300
770   PRINT D$;"PREFIX /": END : REM  CLEAR PREFIX
780   REM  CONTINUE LIST OR CLOSE FILE?
790   PRINT : PRINT : PRINT "PRESS SPACE BAR TO CONTINUE READING"
800   PRINT "ANY OTHER KEY TO CANCEL";: GET K$
810   IF K$ <  > " " THEN 680
820   PRINT : PRINT : PRINT D$;"READ ";N$: POKE 222,255: RESUME
```

Listing continued.

Listing continued.

```
830   REM  ***************
840   REM   GET FILE TYPE
850   REM  ***************
860   REM   FIRST STORE PATHNAME AND LENGTH IN BUFFER
870  FILE$ = PR$ + N$: REM   PATHNAME = PREFIX + DIR/FILENAME
880  L =  LEN (FILE$):X = 0
890   POKE 799,L
900   FOR I = 800 TO (799 + L):X = X + 1
910   POKE I, ASC ( MID$ (FILE$,X,1)): NEXT I
920   REM  INSTALL MACHINE LANG ROUTINE THAT RUNS PRODOS MLI
      'GET FILE INFO' ROUTINE
930   RESTORE : FOR I = 768 TO 782: READ J: POKE I,J: NEXT I
940   DATA   32,0,191,196,12,3,144,3,141,30,3,96,10,31,3
950   POKE 798,0: REM  RESET ERROR CODE INDICATOR
960   CALL 768: REM   GET FILE INFO FROM DISK DIR
970   GOSUB 990:FT$ =  STR$ ( PEEK (784)): REM   GET FILE TYPE
980   RETURN
990  EC =  PEEK (798): REM   CHECK FOR MLI ERRORS
1000   IF EC = 39 THEN  PRINT "I/O ERROR": POP : GOTO 1040
1010   IF EC = 64 OR EC = 69 OR EC = 70 THEN  PRINT
       "INVALID PATHNAME OR VOL/FILE NOT FOUND": POP : GOTO 1040
1020   IF EC <  > 0 THEN  PRINT "GETTING ERRORS TRYING TO READ DISK":
       PRINT "PRODOS MLI ERROR CODE= ";EC;" (DECIMAL)": POP : GOTO
1030   RETURN
1040   PRINT BEEP$: PRINT : PRINT "PRESS ANY KEY TO CONTINUE";:
       GET K$: PRINT
1050   POP : GOTO 300
```

End of listing.

ProDOS interprets all three expressions the same way and opens the file for reading. The third line above uses decimal number 26, but it could be any number between zero and 255 standing for a valid ProDOS file-type code. String variable FT$ in line 520 represents this decimal.

UFO reads the correct value for the code from the list of file parameters in your disk-volume directory. It then calls on the routine GET FILE INFO, built into the ProDOS "machine-language interface" (MLI). The machine-language routine at lines 930–940 runs the MLI routine at line 960 and leaves the file-type code in memory location 784.

Line 970 converts the code to the string form line 520 uses to open the file. Since the INPUT command can't accept control characters, GET reads the file. File reading ends when a ProDOS end-of-data error (code 5) occurs and the ONERR command sends control to the error routine. Control-C interrupts reading in a similar way.

UFO doesn't always display what you might expect, because the file code and structure are usually read only by a special interpreter (such as Applesoft BASIC or Aplworks.system) rather than as ASCII text. UFO can display a BASIC program, but it will appear as a series of ASCII characters representing BASIC programming codes (tokens).

The BASIC command GOTO, for example, appears as a plus sign, since ASCII code 171 represents both expressions. And an AppleWorks file read by UFO will appear to contain extra characters; these are characters AppleWorks uses to control formatting, but doesn't usually display. UFO displays all codes in a file except $00, the null code.

UFO reads a variety of files you can't list with simple BASIC commands. And it's the only program you'll need to read text files (type TXT) and word-processor files of different types. You can also use it to peek inside other types of files for strings of text; you can look at Basic.System, for example, to see the list of file types (TXT, BAS, AWP, and so on) ProDOS can interpret.■

Write to Brian L. Zimmerman at 108 South Shields Road, Columbia, SC 29223.

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NEWS

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Main Menu and Exclusive Reference, Now the AppleWorks Journal

The largest newsletter for AppleWorks users is now published by Sage Productions, Inc. of San Diego, California.

The newsletter features articles exclusively devoted to AppleWorks and its uses in business, education and the home. Feature articles provide in-depth information about AppleWorks commands and options and instructions on special techniques.

The August issue, for example, shows you how to print AppleWorks word processor files in multiple columns; the September issue describes how to keep calculated database categories inside your database records.

The newsletter also features a "Tips & Tricks" column each month with creative ideas on overcoming AppleWorks limitations and getting more from the basic features. Tips have included ways of printing in color from AppleWorks, printing three-up labels from the database, spreadsheet data extraction techniques, macros, printer setup, and more.

But you'll probably like the letters from the readers best. They bring up AppleWorks problems that you thought only you were experiencing. And the answers are clear and concise.

Tapping into a huge source of AppleWorks users with common interests, needs, and problems, is the reason for subscribing to the AppleWorks Journal, which is now the largest and most recognized source for on-going AppleWorks information since its recent merging of two former AppleWorks newsletters: the Main Menu and Exclusive Reference.

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For example, reserving zero to 999 for initialization makes your program see any line within that range as an initialization statement. Or you might use 1000–1999 for a main menu or to obtain data from the user. The type of program you're writing determines the particular line-number coding you'll use. Renumbering your entire program defeats the coding system.

Because Applesoft includes no MERGE command, you must use EXEC to add program portions. Begin your structured program with EXEC INIT.1 to load the first initialization routine in your library, then enter, say, EXEC MENU.3 to place the next procedure into the program you're building. Line-number coding ensures that current program lines won't overwrite earlier sections.

Here's a handy application of this programming principle: You can create a "capture" routine that puts BASIC programs into text files *without* typing several lines at the end of every such program.

Type in **Listing 4** and SAVE it to disk as CAPTURE.MASTER. Type RUN; the program creates the text file CAPTURE.ROUTINE. To add those lines to any program, just EXEC the file.

Let's say you've written a menu routine and you'd like to create a text file so that you'll be able to use the routine in a number of programs. First make sure your menu routine contains no line number smaller than 10. Now type EXEC CAPTURE.ROUTINE. LIST the program to view the nine new lines.

To save the program under the filename you want, change line 3 to something such as 3 FL$ = "MENU.1". Now type RUN and press Return: You've set up a text file containing your menu routine. Whenever you want to insert the menu into one of your programs, just type EXEC MENU.1 to take advantage of your new structured BASIC.■

Listing 4. Capture Master.

```
10  REM  CAPTURE.MASTER
20 Q$ =  CHR$ (34): REM  QUOTES
30 D$ =  CHR$ (4): REM  CNTRL-D
40  PRINT D$;"OPEN CAPTURE.ROUTINE"
50  PRINT D$;"WRITE CAPTURE.ROUTINE"
60  PRINT "1 REM CAPTURE.ROUTINE"
70  PRINT "2 D$=CHR$ (4)"
75  PRINT "3 REM NAME FL$ HERE!"
80  PRINT "4 PRINT D$;"Q$"OPEN "Q$";FL$"
90  PRINT "5 PRINT D$;"Q$"WRITE "Q$";FL$"
100  PRINT "6 POKE 33,30"
110  PRINT "7 LIST 10,10000"
120  PRINT "8 PRINT D$;"Q$"CLOSE "Q$";FL$"
130  PRINT "9 END"
140  PRINT D$;"CLOSE CAPTURE.ROUTINE"
150  END
```

Write to Jerome A. Popp at 1809 Monticello Place, Edwardsville, IL 62025.

INPUT Rejections

by Vincent D. O'Connor

Applesoft's INPUT statement rejects everything you try to type in after a colon or comma, and gives you an EXTRA IGNORED error. You can write a machine-language program to get around this problem, but the easiest way is to use one of your Apple's built-in routines—one that makes INPUT accept noncontrol characters. The program in **Listing 5** demonstrates how well this routine works. The actual routine is found in lines 15 through 25.

Listing 5. *Use the routine in this example to enter any character into an INPUT statement.*

```
5 NAME$ = ""
10  PRINT "NAME: (LAST, FIRST):";
15  CALL 64879
20  FOR I = 0 TO 255 .
25  IF  PEEK (I + 512) <  > 141 THEN NAME$ = NAME$ +  CHR$
(PEEK (I + 512) - 128): NEXT
30  PRINT NAME$
```

This routine works on the Apple IIe and IIc, under both ProDOS and DOS 3.3, and lets you enter any noncontrol character. The delete key won't work with this program, but you can use the left- and right-arrow keys to correct mistakes.■

Write to Vincent O'Connor at 2607 Hayes N.E., Minneapolis, MN 55418.

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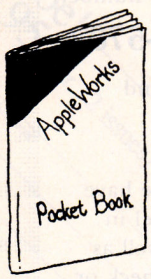
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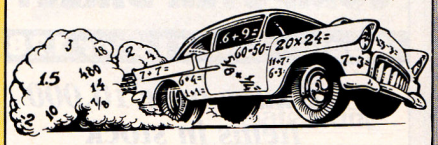
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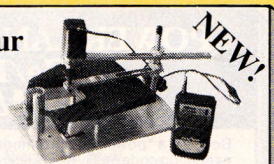
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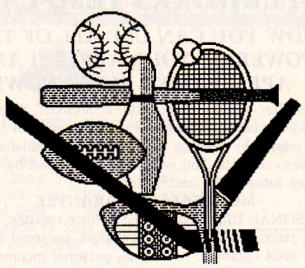
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DataLink: Now's the Time

Why don't more people telecommunicate? Why aren't modems as common as telephones?

Two obstacles stand in the way: Modems cost a lot more than telephones, and they're more difficult to operate. Applied Engineering (P.O. Box 798, Carrollton, TX 75006, 214-241-6060), the biggest name in Apple II hardware, has removed an obstacle and a half. **DataLink**—an internal modem card with two telecommunications programs—costs only $219, and one of the programs, at least, is easy to use.

What makes two bills and change look like a bargain?

DataLink's first advantage is the company behind the product. A firm doesn't grow as big or as fast as Applied has unless it's doing something right.

For one thing, Applied offers a free five-year warranty on every product it sells, including DataLink—but judging from the modem's efficient, compact design, you may not need it. Applied has always been generous with software updates, too, and the DataLinker program that comes with this modem is, like all Applied's software, noncopy-protected.

The other reason DataLink's a bargain is that the modem includes everything you need but the telephone line: not one, but two telephone jacks on the card, so you'll have fewer wires to connect, and a long telephone cable, because, as the instruction manual notes, "chances are . . . your computer is on the other side of the room from your telephone jack."

And you get telecommunications software. In fact, software is such an important supplement to hardware operation at Applied Engineering that, as noted above, it includes two programs with DataLink.

One is actually firmware, built right into the modem. You type IN#2 (or another slot number—it fits any slot but 3), then Control-A—and you're using the modem.

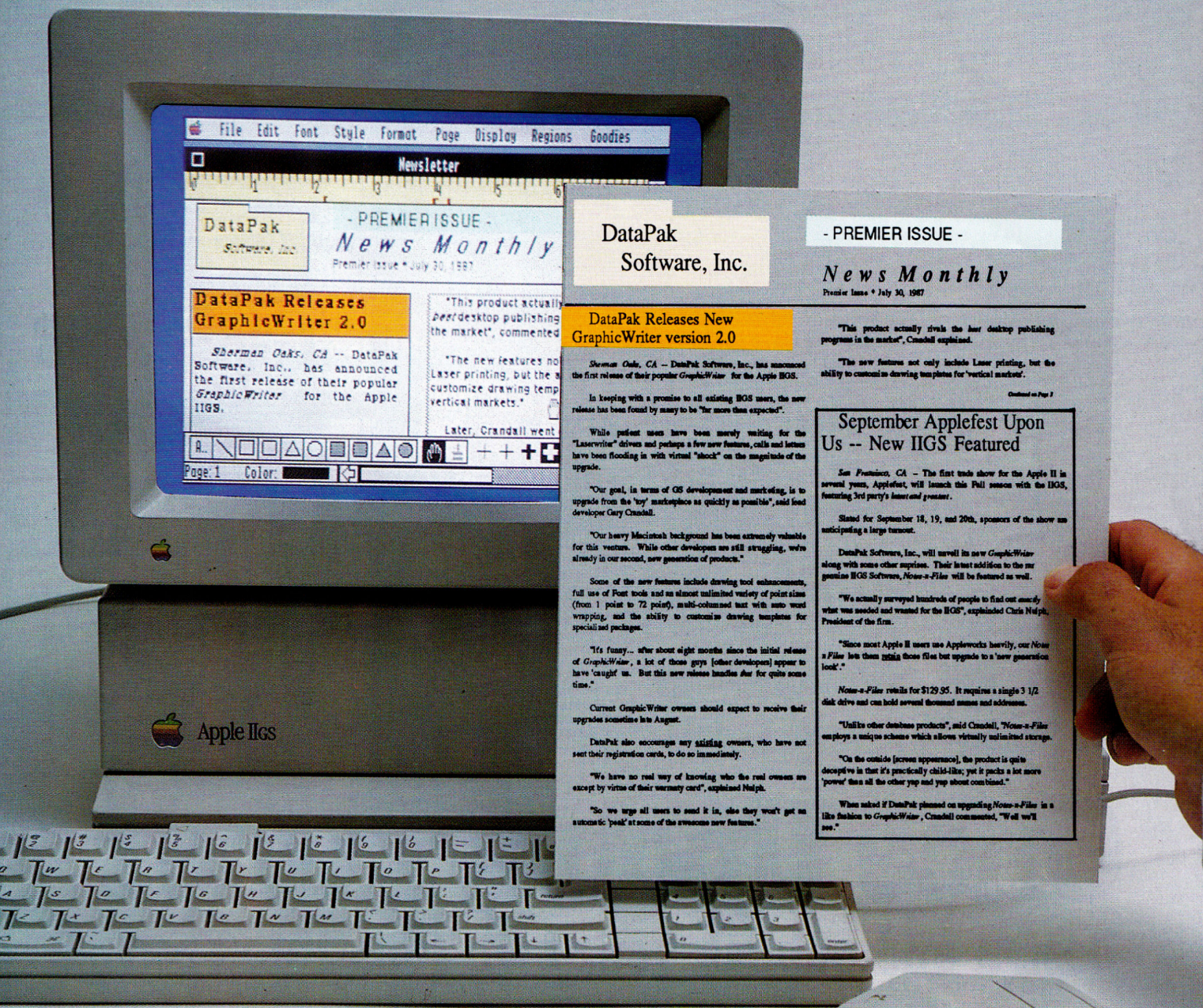
The telecommunications firmware isn't easy to operate: You have to know the Hayes command set for modems, but at least that's standard. Most importantly, though, your DataLink modem understands this software as surely as a golden retriever knows how to retrieve—it's built in. (It also ensures that you can use DataLink with your Apple II or II Plus.)

The DataLinker telecommunications program on disk is much simpler to use. It doesn't look like AppleWorks, as Point-to-Point, for example, does, although it does use a number of similar open-apple commands; it doesn't support the mouse, as MouseTalk does, but it can handle macros.

What you'll like most about DataLink and its software isn't the discounts Applied gives you on subscriptions to GEnie and The Source, or the on-line time display (if you have an Applied Engineering clock), or the modem's compatibility with other Apple II telecommunications programs, such as Point-to-Point, ASCII Express, and Apple Access. What you'll love about DataLink is that you plug it in and you're ready to communicate—without spending several hours or several hundred dollars. ■

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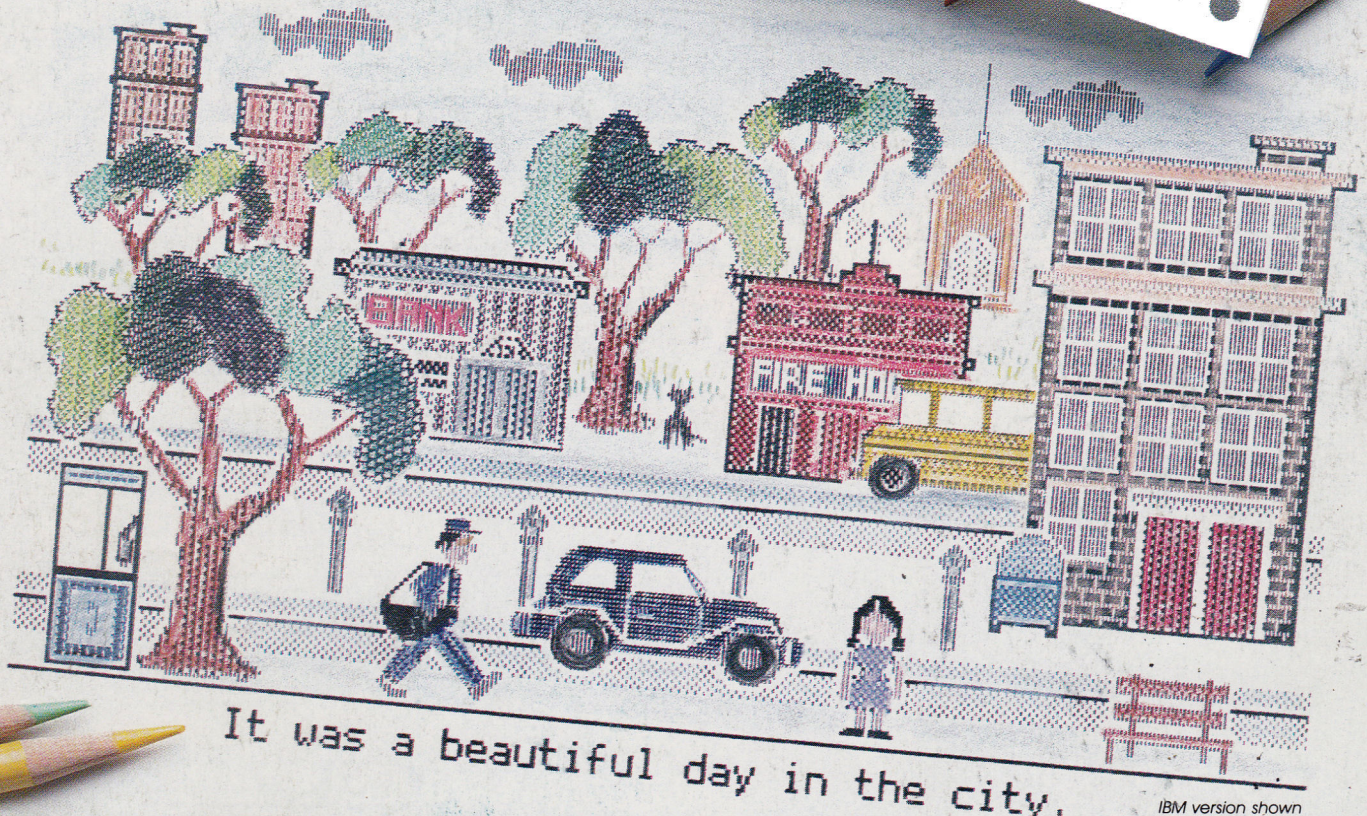
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