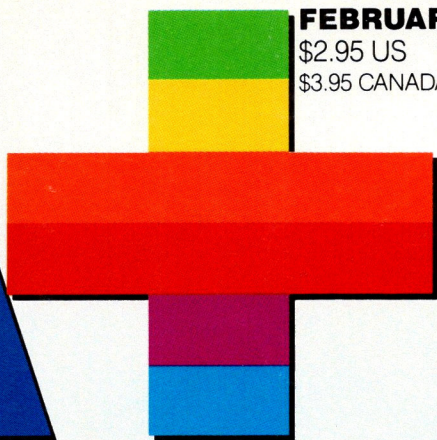


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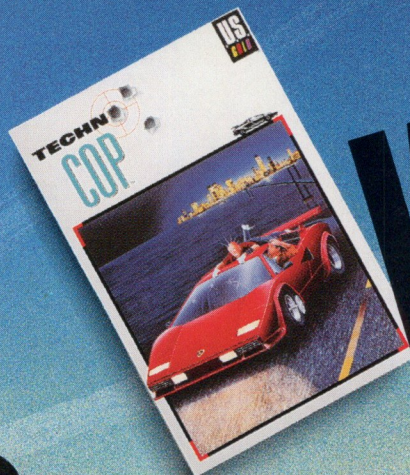
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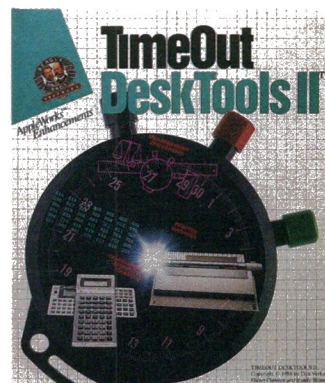
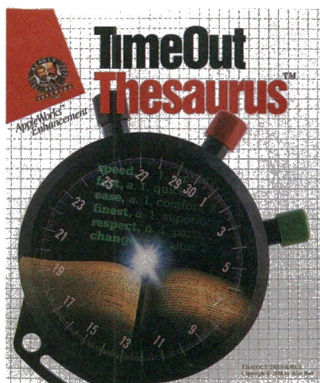
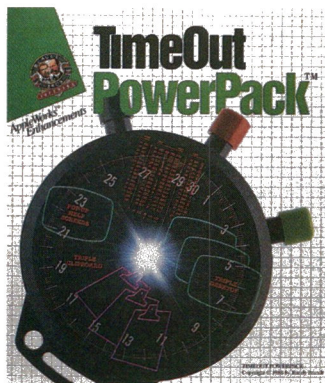
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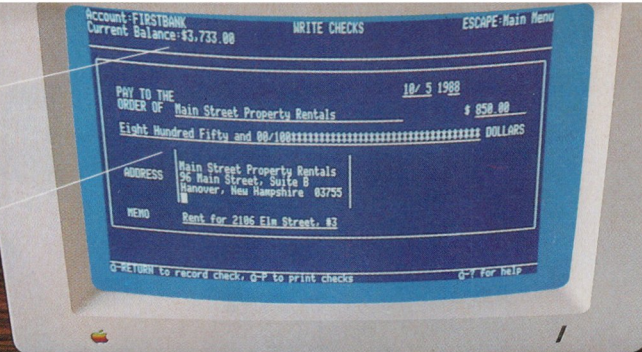
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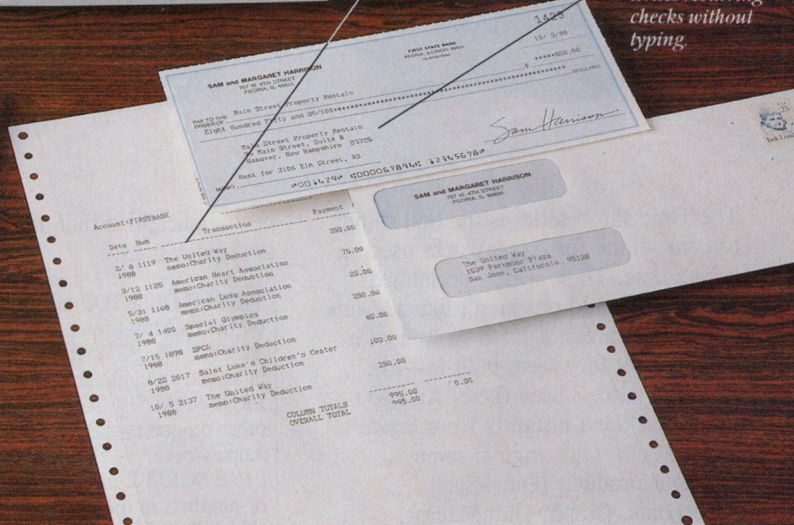
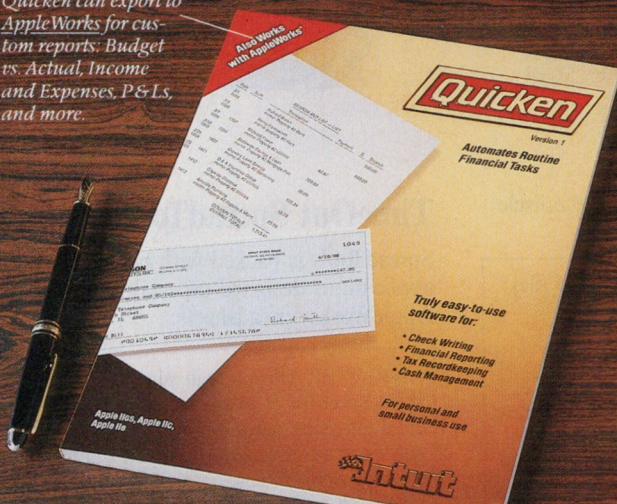


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IIGS HARDWARE

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Apple IIGS mem.exp.\$182
Apple IIGS system fan\$39
Applied Engineering:
Colorlink GS/Analog\$97
GS-RAM OK\$104
GS-RAM 256k\$183
GS-RAM 512k\$293
GS-RAM 1Meg\$514
GS-RAM 1.5Meg\$747
GS-RAM Plus 1 Meg\$519
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GS-RAM Plus 4 Meg\$1725
PC Trans. Inst. IIGS\$100
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Kensington Sys.Saver IIGS\$79
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VOLUME 7/ISSUE 2

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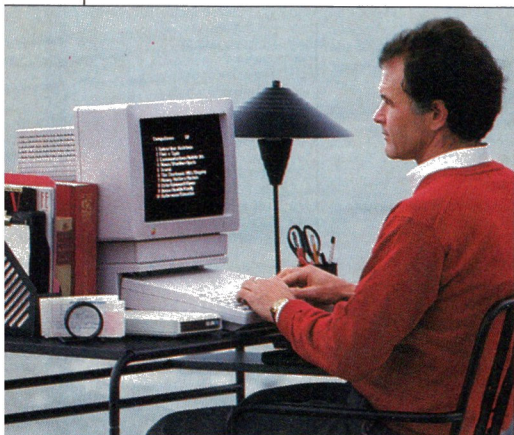
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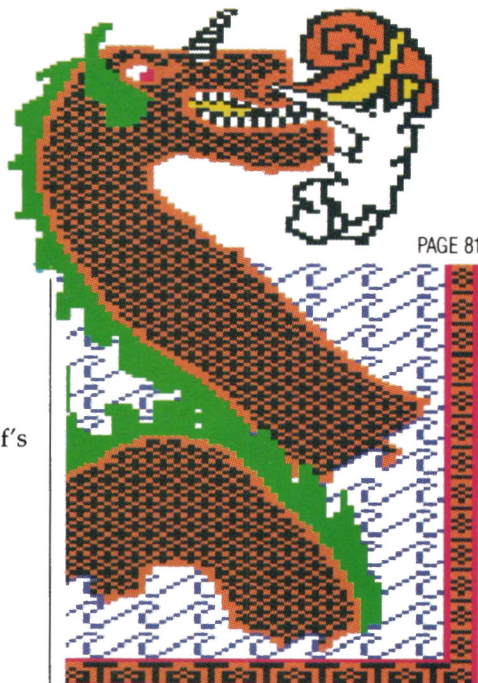
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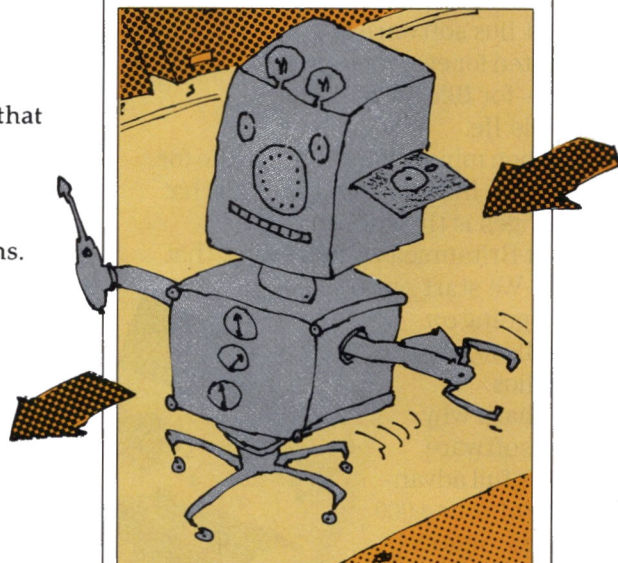
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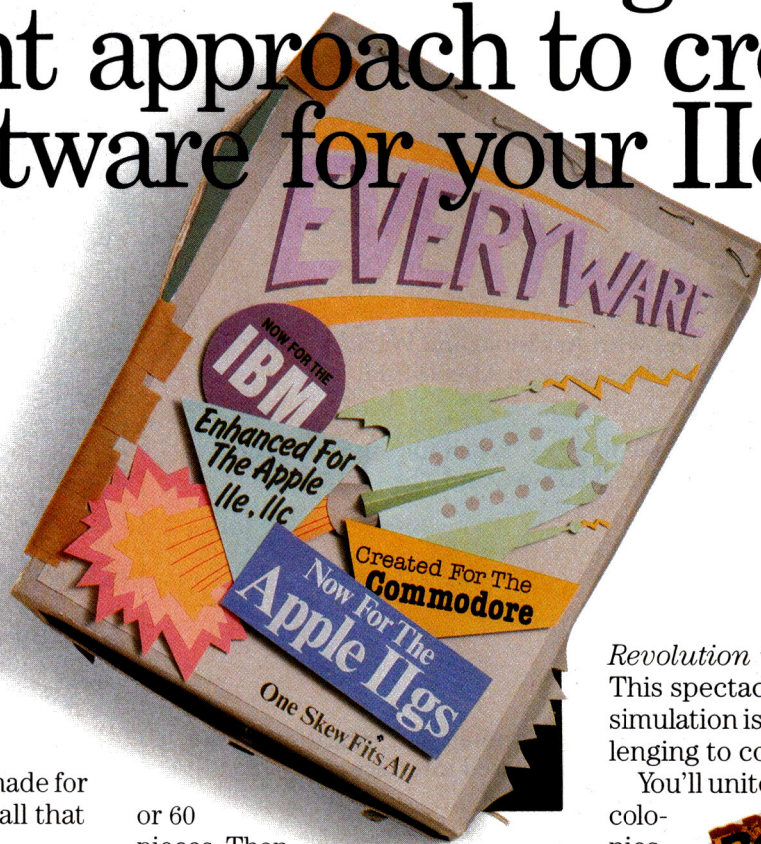
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We've taken a slightly different approach to creating software for your IIGs.



Most IIGs software is created for everyone else first—for IBM, Commodore, Apple IIe.

Then minor changes are made for the IIGs. In fact, sometimes all that changes is the sticker.

At Britannica we don't work that way. We start out by designing *on* the IIGs—for the IIGs.

That's why our software takes full advantage of your 4,000 colors, digitized sound, pull-down menus, GS/OS and, of course, your friendly mouse.

So isn't it time you give your IIGs the software it deserves—like these?

JIGSAW!

Awarded "Editor's Choice" in the December '88 edition of *inCider*. *JIGSAW!* was called "deceptively simple, yet maddeningly complex."

This wonderfully addicting electronic puzzle uses all 4,000 of your IIGs colors in its 24 images. Each image can be scrambled into 8, 15, 40

or 60 pieces. Then you see how fast you can point and click it back together. Definitely captivating for anyone from 4 to 104.

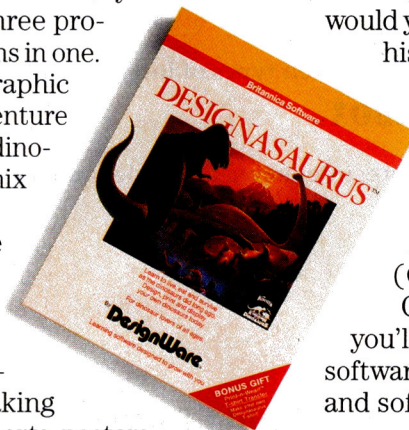


Designasaurus.

Winner of the Best *Educational Program* award from the Software Publishers Association, this run-away hit is actually three programs in one.

It's a graphic survival adventure (*you're the dinosaur*). It's a mix and match game (create your own species). And it's a printing program for making dinosaur reports, posters, booklets—even T-shirts.

For dinosaur-lovers of all ages.



Revolution '76.

This spectacularly rich historic simulation is easy to learn. Yet challenging to conquer.

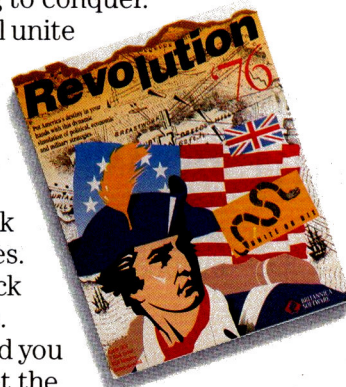
You'll unite colonies. Build armies. Make or break alliances. And pick leaders.

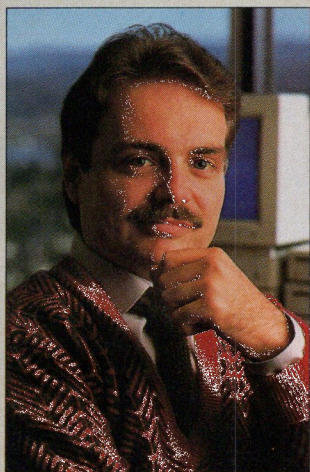
Could you have set the groundwork for one of the world's most successful nations? And how would you have changed America's history? Play *Revolution '76* and find out.

For time-travellers 14 and up.

Look for all three programs in software stores near you, or call 800/572-2272 (CA: 415/546-1866).

Once you try our software, you'll see the difference between software created for everyone else and software created just for you.





BIG BROTHER WASN'T WATCHING

Nineteen eighty-four isn't what it used to be.

A few years ago, some saw the personal computer as the first warning that novelist George Orwell's paranoid vision was coming true. Technophobes were convinced that the first step in the mind invasion was to get silicon circuitry into every-

one's home. Then this army of artificial brains would turn into 24-hour watchdogs, controlling our homes, our families, and our thoughts. Suddenly,

Big Brother would be watching.

Sounds like a great scenario for a TV miniseries.

What actually happened, though, was not Orwellian fantasy. It was just the opposite. In this post-1984 community, information is not the domain of a select few—instead, it's a resource for everyone.

In our telecommunications special this month, you'll see how computers, modems, and telecommunications networks offer new horizons in service and information. Peer into the activities of fellow computer users. Glance at the latest Wall Street returns. Scan magazines, newspapers, and reference materials. Even earn a college degree. Never before has so much been available to so many.

Telecommunications also has its down-to-earth side. This data revolution isn't just reading about the president's visit to Moscow. It's also about buying plaid underwear, purchasing expensive cars, getting free software, and booking tickets to exotic places

without stepping outside Home, Sweet Home.

Our writers will introduce you to telecommunications opportunities that burst the limits of your Apple II and propel you into the information mainstream. It's truly computing without boundaries.

But present-day telecommunications is just the beginning. In its current state, it's largely the electronic exchange of words, but machine-specific telecommunications services are adding graphics to the equation. As these services grow increasingly sophisticated, so do the possibilities. Imagine an

Eventually, information and retrieval will be as handy as your telephone or cable TV.

on-line merchandise catalog that offers not only the product description (a feature that is currently available on several services) but also a picture of the product, perhaps with animation. Or how about a two-minute sample of a new compact disc, played over the speaker of

your computer? Listen before you buy. With faster and more refined methods of transmission, we could see on-line galleries of art, film, and video or study the history of art from home with full access to the world's finest galleries.

And we're only getting started with computers. Eventually, information transmission and retrieval will be as handy as your telephone or, perhaps, your cable-TV service. Then we'll have information access that goes far beyond boundaries, and you'll have immediate access to people, ideas, and images from around the world.

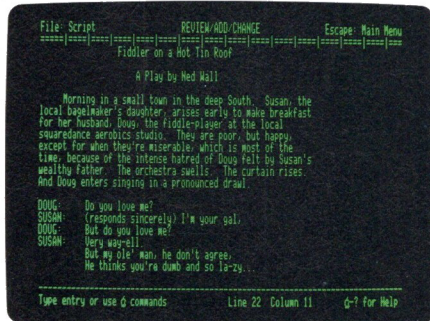
Put 'er there, Big Brother.

Bob

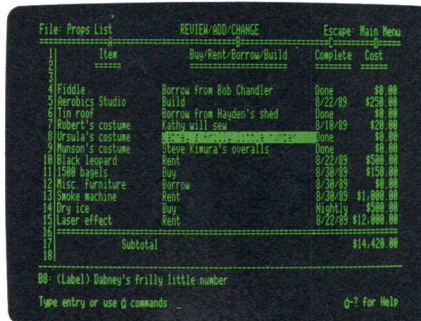
BOB LINDSTROM/EDITOR

EDITOR'S PAGE

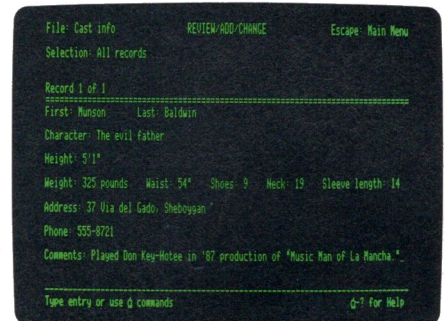
Everything isn't what it used to be.



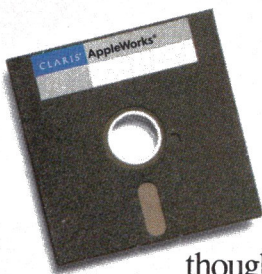
With a word processor, spreadsheet and database in one package, AppleWorks has just about everything an Apple II owner could want.



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



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



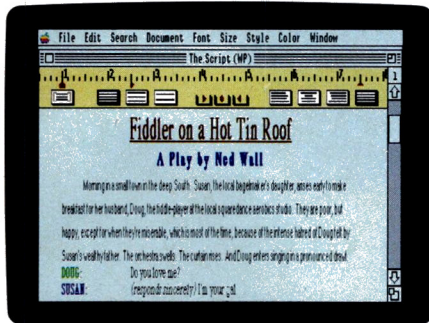
When AppleWorks® rocketed to the top of the best-seller lists a few years back, Apple II owners thought they had seen everything. They were right. AppleWorks contained every program you could possibly want in just

one program. And exercised the power of the Apple II like it had never been exercised before.

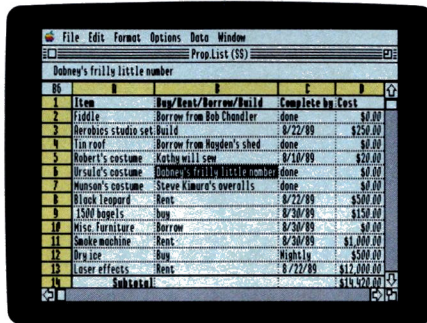
But then came the Apple IIgs. With more power and new capabilities. Everything had changed. And Apple IIgs owners wanted more.

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

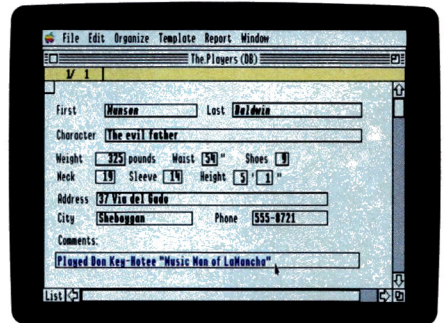
Now it's more.



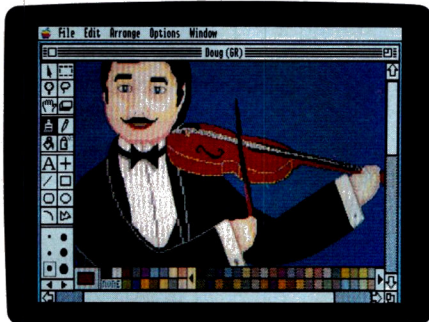
Like AppleWorks, AppleWorks GS offers a powerful word processor. And you can enhance your work with type styles, sizes and fonts.



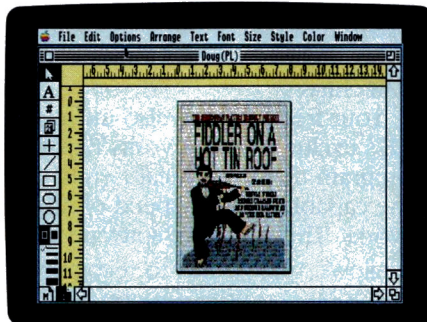
AppleWorks GS can read all your AppleWorks files. And when you transfer your spreadsheets to AppleWorks GS, you can add boldface.



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



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



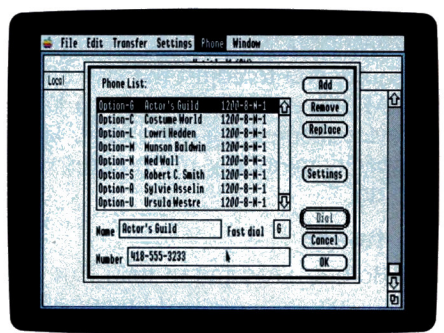
AppleWorks GS includes the most powerful Apple II page-layout program you can buy. Put all the pieces together. Then publish them.



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



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



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



Introducing AppleWorks GS.

Six powerful programs in one easy-to-use package. Six programs working together to exploit the full resources of the Apple IIGs.

There's even a deal in the works for owners of AppleWorks, MultiScribe and MultiScribe GS.

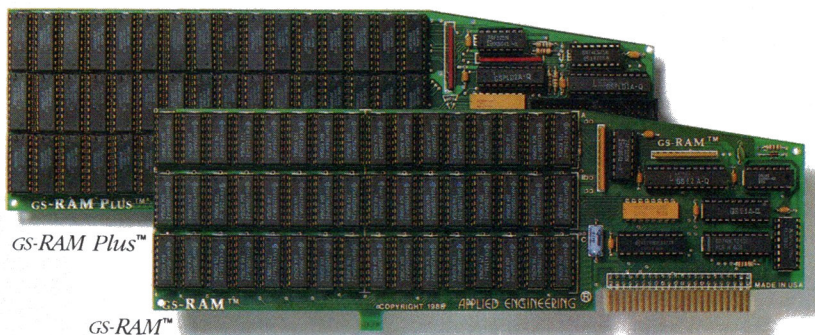
A special upgrade offer that, as they say on late-night TV, will not be repeated.

Upgrade to AppleWorks GS and save.

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

CLARIS™

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



It was worth it.

Applied Engineering's IIGS memory cards, the GS-RAM™ and GS-RAM Plus™ are the **ONLY** large capacity¹ IIGS memory cards that are fully DMA compatible. Others are either totally non-compatible or compatible only in certain specific configurations.

That difference in memory cards is critical. Here's why: DMA (Direct Memory Access) tremendously speeds up computer operations by bypassing the microprocessor. All addressing and control logic is contained on our cards, enabling a DMA device to bypass the microprocessor and go straight to the heart of things...the computer's memory.

AE's full DMA compatibility means GS-RAM and GS-RAM Plus run all GS software, support all *current and future* DMA peripherals, and don't require you to adjust the size of your RAM disk everytime you use a DMA device...something every other large capacity memory card requires you to do.

Software

Both GS-RAM and GS-RAM Plus come complete with Applied Engineering's own powerful enhancement software.

Disk caching software is included, tremendously speeding up the com-

puter's access to the 3.5 drive and running most applications up to *seven times faster*.

Diagnostic utility software is also included free. It graphically shows the location of bad or improperly installed chips and even tests for CAS before RAS chips.

Your free software also includes AE's exclusive AppleWorks Expander program that dramatically enhances the capabilities and speed of AppleWorks. This powerful software also:

- Allows AppleWorks to recognize up to 8 MEG on the desktop
- Increases word processor lines from 7,250 to 22,600
- Increases database records from 6,350 to 22,600
- Increases clipboard capacity from 255 lines to 2,042
- Automatically loads AppleWorks (including print functions) into RAM
- Automatically segments files for saving on multiple floppies
- Provides a built-in print buffer

RamKeeper™ Option

Coupled with Applied Engineering's RamKeeper, your GS-RAM or GS-RAM Plus actually give you an internal "electronic hard disk" with an instant-on finder and emergency power backup. RamKeeper even supports an Apple IIGS memory card (and most others) alone or in combination with one of our cards. See our RamKeeper ad for more details on how this \$189 wonder gives your IIGS all the speed and power it was meant to have.

Compare Our Features

- GS-RAM expands from 256K to 1.5 MEG

- GS-RAM Plus expands from 1 MEG to 6 MEG
- GS Expander™ adds up to 2 MEG to either card
- Full DMA compatibility in *any* configuration
- 5-year warranty - parts and labor
- 6 RAM banks (most cards have only 4)
- Piggyback memory expansion port
- No configuration blocks to set
- RamKeeper option available for permanent storage
- 15-day money-back guarantee²
- Proudly made in the U.S.A.

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gs-RAM 256K	\$219
gs-RAM w/512K	\$369
gs-RAM w/1 MEG	\$669
gs-RAM w/1.5 to 3.5 MEG	CALL
gs-RAM Plus w/ZeroMEG	\$169
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gs-RAM Plus w/3-8 MEG	CALL
RamKeeper Option	\$189

Order Today!

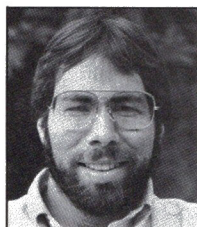
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Steve Wozniak, the creator of Apple Computer.

"In quality, performance, compatibility, expandability and support, Applied Engineering's GS-RAM and GS-RAM Plus are number one."

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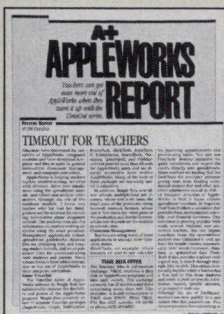
LETTERS TO THE EDITOR

MORE ON TIMEOUT MODULES

Dear A+: My compliments on Jim Carlisle's excellent article about how to use the Beagle Bros TimeOut modules in instruction (A+ October 1988).

Here are two additional points that might interest your readers:

1. Beagle Bros has a site-licensing policy that lets schools produce unlimited copies of the TimeOut modules.
2. The National AppleWorks Users Group (NAUG), a group of approximately 10,000 AppleWorks users, is the largest single supplier of TimeOut modules. (NAUG members receive substantial discounts on TimeOut products.) In addition, NAUG members receive our 28-page monthly AppleWorks newsletter, *AppleWorks Forum*; get free telephone consulting help from more than 150 member-volunteers; have access to NAUG's Public Do-



main Library of more than 1,000 AppleWorks templates and enhancements; and can use NAUG's AppleWorks Bulletin Board (A+ called the NAUG BBS "the most significant AppleWorks bulletin board" in the country). Interested readers can contact NAUG at P.O. Box 87453, Canton, MI 48187.

CATHLEEN MERRITT
NAUG DIRECTOR
CANTON MICHIGAN

DON'T RESORT TO CHARACTER EDITORS

Dear A+: I just read the article on character editors for fantasy/role-playing games by Robert Hopkins, III. I feel he misses the point of role-playing games. He dismisses the objection to character editors by "gaming purists," preferring instead to be able to "repair" the characters quickly and return to the game as if nothing had happened. "Winning" Wizardry I, however, is not just getting to the tenth level and overwhelming Werdna and his vampires with level 1,000 Bishops (quite possible with a well-known bug in Wizardry I). It involves solving all the

puzzles the game offers, without character editors and commercial maps, up to and including Werdna's defeat.

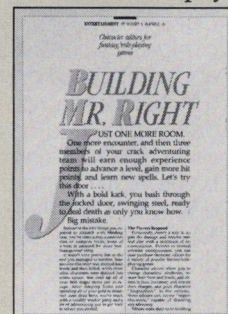
A significant part of the role-playing experience is pushing your characters to their limits and paying the consequences. I can still remember the feeling of loss I had when my party was all killed on level 5 of Wizardry I. It was a great sense of achievement, however, when I developed another set of characters and with trepidation went down and rescued my party in six hazardous trips. This experience would not have occurred if I had been able to just boot up my cheat program and edit my characters back to full (or increased) strength. Characters' being drained or killed is as important a part of the games' balance as "finishing."

ROD WHITTEN
BURLINGAME, CA

CHARACTER EDITORS ENCOURAGE NOVICES

Dear A+: In your November issue, Robert Hopkins ("Building Mr. Right") touched on a topic software writers should consider. We, my wife and I, started our first adventure with Bard's Tale. Without the character editor, we would have quit after 10 or 20 deaths. But with a character editor, it's fun. Neither of us enjoys being beaten for hours or winning without risk. We'll learn with the character editor and continue; without it, we'll stick to Shanghai.

BOB WILSON
FREMONT, CA



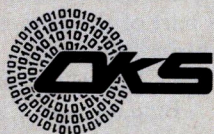
DISK ACCELERATOR

THE MULTI-KACHE CARD



Does most of your computing consist of "hurry up and wait" data processing? The gap between processor speed and data I/O speed has grown alarmingly wide. Speed is critical and nothing can be more irritating than waiting for your disk drives to play catch up. Ohio Kache Systems has eliminated this problem with the Multi-Kache Card. Your computer is capable of working at higher speed if only it could receive information quicker...faster processors won't help if there's no data to process. OKS Multi-Kache is a complete disk management system...superior to anything on the market today. The Multi-Kache Card guarantees that your system will show dramatic speed improvements or your money back! You must be satisfied!

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- ☐ 256K version — \$274.95 (recommended for the IIe.)
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Expiration Date _____

Name _____

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State _____

Zip _____

Company Name _____

Business Phone # _____

LETTERS

CENSOR CENSORSHIP

Dear A +: After reading the letter from Mr. Finnerty in the October issue, I am moved to respond that I do not wish A + to censor its software reviews at the request of "family-oriented" readers. Although A + tends to lean heavily toward supporting the educators in its readership, I don't see this as a valid reason for excluding certain types of software from review. I have subscribed to A + since *Softalk* folded, and I have always counted on A + to bring me news of the latest software and other products available to me as a potential customer. To omit reviews of programs on the basis of their content, sexual or otherwise, would be doing your readership a great disservice.

DAVE LeVASSEUR
WATERTOWN, SD

IIc NEEDS LIGHTWEIGHT SCREEN

Dear A +: I was one of the thousands of Apple IIc owners who cheered the recent introduction of the Apple IIc Plus. Now, if someone will introduce a high-quality, affordable flat screen for the IIc computers, the machines will fulfill their promise of portability.

Long live the IIc—but only with a lightweight screen!

DONALD T. RASCOE
ELLICOTT CITY, MD

The C-VUE LCD Flat Monitor is available for \$349 from the mail-order firm Roger Coats, P.O. Box 171466, San Diego, CA 92117; (800) 438-2883; (619) 274-1253. IIc and IIc+ owners looking for an RGB converter should investigate the \$149 Peacock External RGB module from Telemax, P.O. Box 339, Warrington, PA 18976; (215) 343-3000.—OWL

APPLETALK OVERKILL

Dear A +: I agree with Mark Chevalier ("Letters," September 1988) on AppleTalk overkill. Even as of October, AppleShare for the Apple II has not been released. Meanwhile, Corvus has dropped the price of the Apple Transporter

cards to \$149 and has also released the 4Mbps Omninet/4. As a teacher, Chevalier should investigate the advantages of networks in education and research actual system prices. Computer instructors, teachers, administrators, students, and parents can all benefit from an awareness of network alternatives.

There are also some inaccuracies in the May issue that I would like to correct. On page 43, Rod Williams states that disk servers cannot share files directly. This asser-

tion is simply not true. Corvus Constellation volume files can be shared by all users granted access to that volume. The mistake is repeated on page 32 in Gary Little's "Buzzwords" glossary. Also, be aware that with the all-Apple II LocalTalk network, mentioned on page 28, spooling capability is lost. You have to wait for the printers instead of sending output to a disk queue and moving on.

TOM VIER
WASHINGTON, DC

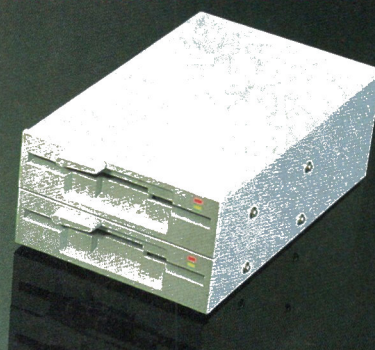
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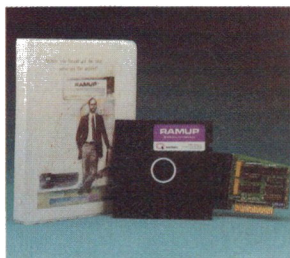
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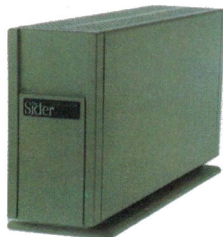
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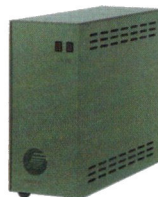
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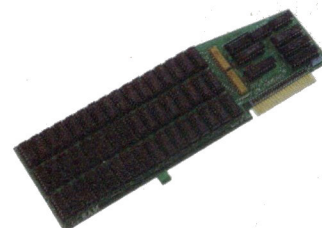
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NEWSPLUS

Pirates see red with new copy-protection scheme, Brown writes GS Works book, Linzmayer sheds light on Apple code names, and other industry updates

SOFTWARE CONFIDENTIAL

From out of the hallowed, paranoiac halls of national defense to your computer-game package: No Copi is the low-tech, high-security solution that reaches from the Pentagon to computer entertainment.

And what is this wonder of twentieth-century innovation?

"The solution we have is not magic. It's a simple solution," says No Copi president Norm Gardner.

It's a printed page that can't be photocopied or faxed. The burgundy-on-burgundy color scheme of No Copi paper is conducive to mild eyestrain but not to duplication. Score a win for the software industry and a loss

for software pirates with photocopiers.

When No Copi International, Inc., came into being in 1981, "We thought the defense industry would be our primary market," Gardner explains. "They seem to have lots of secrets. But the government was just the tip of the iceberg of confidentiality."

Wizardry IV from Sir-Tech was the first product to employ No Copi paper as a form of software protection. Now, several other companies are warming to its non-copying charms. Upcoming products to use No Copi include the new Jack Nicklaus golf simulation from Accolade and Pete Rose Pennant Fever from GameStar.

So put a higher-watt bulb in your computer-

room reading lamp and reap the benefits of a copy-protection scheme that doesn't beat your disk drive to pieces and allows hard-disk installation of software.—BL

HOW THE WORKS WORK

Of course, it goes without saying that the friendly, self-evident user interface of AppleWorks GS permits instant access and immediate understanding of Claris' six-module software marathon. But just in case you need a little extra help (along with the majority of other AppleWorks GS users), Addison-Wesley is publishing *Using AppleWorks GS* (\$19.95).

The 450-page paperback was written by Douglas L. Brown. Besides being the author of *From Pascal to C: An Introduction to the C Programming Language* (Gee, how come that never made the *New York Times* best-seller list?), Brown was a member of the original documentation team for AppleWorks GS. In short, this guy is pretty qualified.

The book contains tutorials, tips, and advanced guides to making the most of this huge product's word-processing, spreadsheet, database, telecommunications, graphic, and page-layout modules. It's scheduled for publication in February.—BL



NEWSPLUS

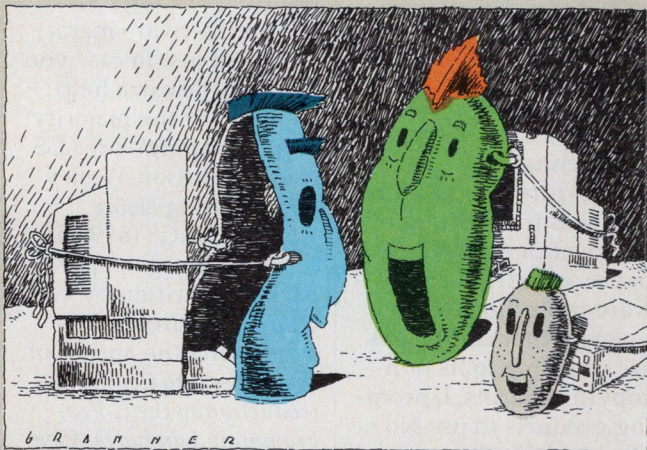
UPDATE

HIDDEN DUNGEON

The December 1988 installment of "GamePort" featured a preview of Dungeon Master from Faster Than Light Games. Readers anxious to contact the publisher of this Apple IIGs fantasy/role-playing adventure should write or call FTL Games, 6160 Lusk Blvd., Suite C206, San Diego, CA 92121; (619) 453-5711.—OWL

Apple loves using code names to keep outsiders guessing about what Cupertino is working on.

- Sara for the Apple III
- Macintosh for the Mac
- Liron for the UniDisk 3.5 Drive
- VLC (very low cost),



CODE-NAME ALMANAC

Apple Computer loves using code names to instill a feeling of secrecy in its employees, protect the identity of unreleased projects, and keep outsiders guessing about what Cupertino is working on. Code names used in the past include:

- LCA (low-cost Apple) for the Apple IIe
- Slinky for the Apple II Memory Card

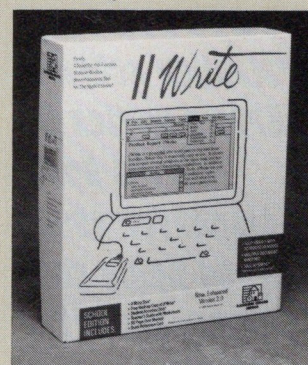
- Yoda, Lolly, and ET for the Apple IIC
- IIX, Brooklyn, Phoenix, Rambo, Columbia, Cortland, and Gummy for the Apple IIGs
- Chablis for the Mac SE
- Rocky & Bullwinkle and Calvin & Hobbes for the AppleShare network
- Samuel for Apple-Link—Personal Edition
- Pizza, Raisin, and Adam Ant for the Apple IIC Plus
- Hartford for GS/OS
- Mustang for the Mac IIX.—OWL

Version 2.0 of Personal Newsletter is now available, with the following new features: headlines ranging in size from 18 to 72 points, double-strike and double-density printing, and a built-in LaserWriter driver. For information on upgrading, contact SoftSync, 162 Madison Avenue, New York, NY 10016; (212) 685-2080.

Timeworks has brought out version 2 of Publish It! (see "Desktop Publishing," September 1988). The new release takes advantage of extended memory, imports Print Shop graphics, prints to the LaserWriter, and allows easy resizing of graphics. To upgrade, send an original program disk, title page of the manual, and check or credit-card information for \$37.70 directly to Timeworks, 444 Lake Cook Road, Deerfield, IL 60015-4919; (800) 535-9497; (708) 948-9202.

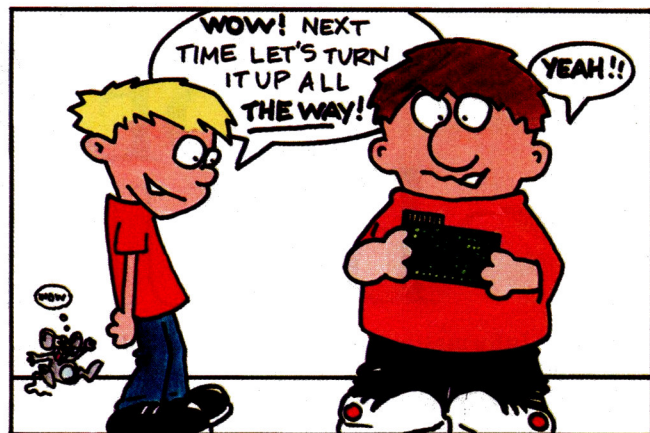
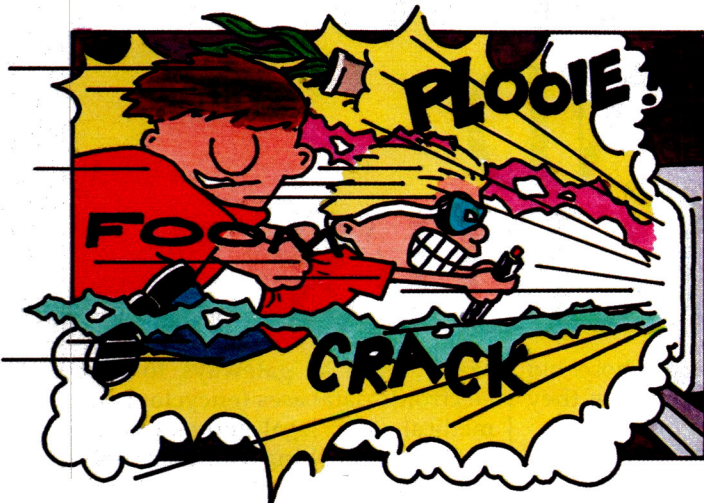
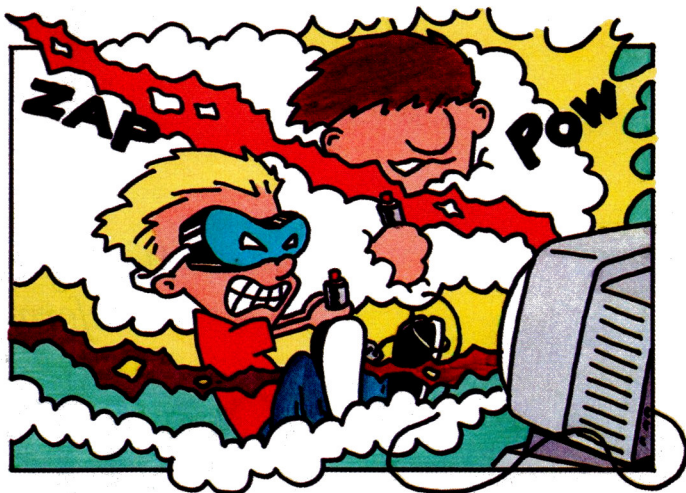
Random House Media recently upgraded IIWrite, a WYSIWYG word-processing program for Apple IIe/c/c+ computers with 128K of memory. Version 2 addresses some of the shortcomings mentioned in our July 1988 review. IIWrite now has

enhanced mouseless operation, additional fonts in the 3.5-inch format, the ability to create larger documents, and procedures for installing the program on a RAM disk or hard-disk drive. Current IIWrite owners can upgrade by returning their original disk directly to Random House with a check for \$10. They will receive a



new disk (please specify either 5¼- or 3.5-inch format) and a quick-reference document. You can contact Random House Media at P.O. Box 100, Westminster, MD 21157; (800) 638-6460; (301) 848-1900.

The November 1988 cover story comparing the Apple IIC Plus and Laser 128 EX/2 contained a minor error on page 59. In the AppleWorks spreadsheet-recalculation chart, the bar representing the speed of the IIGs incorrectly indicates a rating somewhat greater than 300%. The label is correct in showing the IIGs as being only 235% faster than a IIC running at 1MHz.



Serious Fun

Okay, we're willing to admit that sometimes we take things a little too seriously. We get wrapped up in developing ways to make your IIGs more productive, and occasionally forget how much fun it can be.

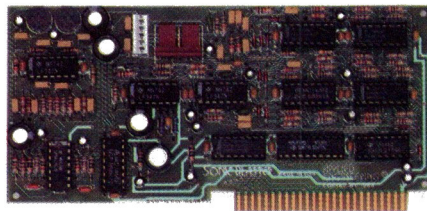
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*Making the most of the
Information Age*

COMPUTING BEYOND BOUNDARIES

The Information Age is upon us, and if you aren't tapping into your share, perhaps it's time to power up your computer. Unlike knowledge, a little information isn't dangerous; in fact, in the late twentieth century, it's downright mandatory. Take, for example, the following questions. Can you guess what they have in common?

How can I get a letter I have on disk to a FAX machine in Saudi Arabia? Which movie would I probably prefer, *Nightmare on Elm Street 4* or *Friday the 13th Part 6*? Where can I find opinions on the merits and possible side effects of two similar prescription drugs—from people who have actually used them? What's the most popular gradebook program for my Apple; how good is it, and how much does it cost? Is anybody else up at 2 A.M. regularly, hungry for conversation? How do I go about incorporating a business? What about promoting it on TV? As usual, my daughter's term paper is due tomorrow. Where can she get late-breaking aerospace information tonight? What are the primary demographic differences between greater Los Angeles and San Francisco? How many daily flights are there between Chicago and Atlanta, and how much do they cost? Are

any of them nonstop? Those old comic books in the attic—are they really worth hanging onto?

The common element among these questions is that their answers, in addition to answers to just about all other modern-day questions along with a host of

*Several
information
providers, or
commercial networks,
stand ready to satisfy
your appetite.*

opinions, are instantly available to anyone with access to a personal computer equipped with a modem and telephone.

Let Your Fingers Do the Talking

Several information providers, or commercial networks, stand ready to satisfy your information appetite 24 hours a day. Varying in cost from more than \$50 an hour to less than \$3, their services range from the eclectic to the explicit, and they are far more interesting than simple electronic-mail carriers such as MCI and Western Union.

Many serve as gateways to vast electronic databases (encyclopedic, medical, and legal references, as well as publishing compilations). Some have steep learning curves, whereas others are easy to use and concentrate on more consumer-oriented fare, including plain talk between plain people.

Services such as these were originally devised by computer programmers for sharing programs and techniques. They were extended to businessmen and investors (Dow Jones News/Retrieval, for example) in the late 1970s; then the Information Age arrived in the early 1980s and changed everything. Nowadays you'll find all sorts of professional and personal users online, doing all sorts of professional and personal things.

On-line special-interest groups are dedicated to everything from ASCII to Zen. Topical divisions (sometimes called forums, roundtables, or clubs) usually comprise three standard sections:

1. Collections of public messages between members of the group to which you can contribute or simply read.
2. Collections of programs and longer text-based files you can transfer to your computer and use later.
3. "Conference" or "CB" areas in

*A*nswers to just
about all modern-day
questions are instantly
available on-line.

which you communicate by typing in real time, with other people connected to the network at the same time.

Most networks also offer private electronic mail, on-line credit-card shopping, multiplayer games, and nonspecific CB areas in which members frequently try out different personalities by using "handles," or pseudonyms.

The Lineup

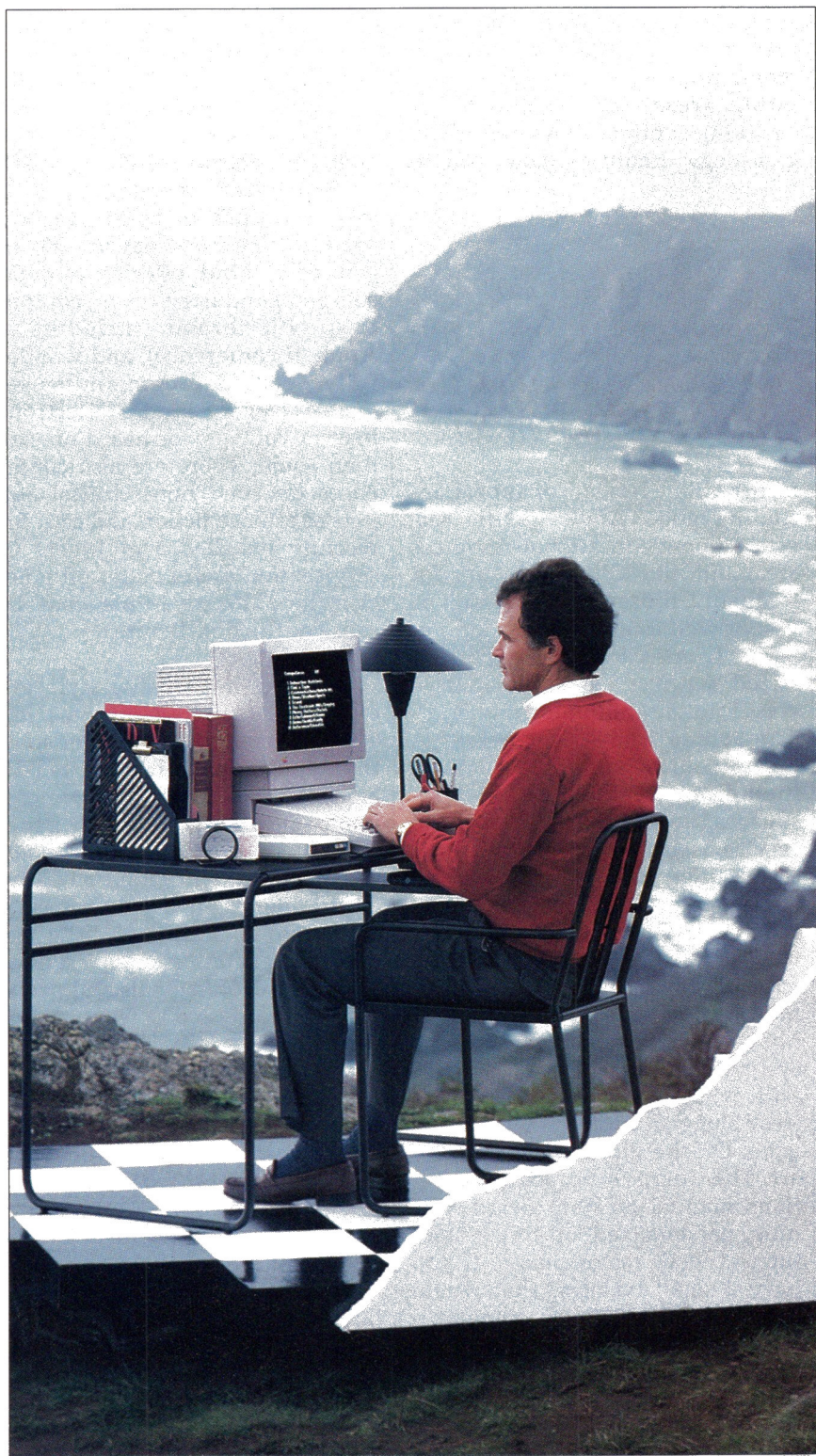
There are many networks other than those I describe here. Portal, for example, is primarily a computer professionals' gateway to services such as ARPANET (a network for universities, government departments, and corporations) and USENET (a UNIX network), and because of its low cost, it's a CB addict's delight. And there's always Dow Jones for financial information (see "Newslines") and AppleLink (see "For Your Line Only"). The following gives you a taste of real-world networks, though.

CompuServe

Offering nearly 500 distinct topics and services, CIS (CompuServe Information Service) is the biggest and oldest of the public-access networks still in operation. It offers the most diversity by far, including the well-known MAUG (Micro-networked Apple Users Group) and gateways to scads of professional databases (most of which are surcharged), and it's the service I'd want on that proverbial desert island if I found myself marooned. Information on everything I've ever wondered about is on CIS, from aerospace to scuba diving to transferring electronic files to FAX machines worldwide. It's all there, but it's up to *you* to find it. You can do better economically after hours, but CIS is the only service that's also affordable during weekday business hours.

Genie

Moving up fast, four-year-old



GEnie recently surpassed QuantumLink (sister to AppleLink) to become second only to CompuServe in number of subscribers. Overall, it's a friendly, middle-of-the-road kind of place, neither small nor enormous, offering a delightful mix of roundtables devoted to fun (solo and multiplayer games, including an on-line Macintosh flight simulator, MIDI, movie reviews, and personal-computer areas) and productivity (working at home, news, reference, genealogy, financial data, and so

You can do everything on-line, from researching Niagara Falls to falling in love.

forth). GEnie has lots of appeal, including good Apple-specific services; a new educational-resources area; and, like CIS, a discount for frequent CB users. Since it isn't as vast or well established as CompuServe, GEnie carries more personalized services for subscribers—you're not just another number.

The Source

The Source offers lots of meat, including great educational resources, an active matchmaking service, self-publishing, personal computing, and a few real-world special-interest groups. It claims the highest volume of electronic mail among all the services but specializes in small-business communications, so there isn't a lot of hobby or fun activity on-line. The system itself is not very responsive and is somewhat Neanderthal (read sluggish and difficult) to navigate. On the flip side of that coin are The Source's beautiful operations manual and an award-winning, personalized, on-line system tutorial, both major pluses. If you have a small business that would benefit from improved communications between branches and the main office, check out The Source.

American PeopleLink

Unfortunately light in content, "Plink" is the least expensive, fast-

est, and electronically the most responsive of the services surveyed here. It's dreadfully lacking in professional and financial services, though, primarily offering alternative-life-style information and companionship, CB communications, and electronic mail. With a single exception (and it's not Apple), Plink's personal-computing clubs lack depth and activity, as do most of its other services. If you know what you want, what you're doing, and whom you're doing it with, however, Plink's E-mail, CB, and person-to-person file transfers are great bargains.

Byte Information eXchange (BIX)

Owned and operated by BYTE magazine, BIX is bound to be a computer techie's haven. It's the gem of its kind, offering in-depth computer-industry news, computer-specific forums (including an Apple II conference), and wonderfully detailed programming services for every kind of electronic marvel you've ever heard of—and then some. There are also conferences on such nontechnical subjects as science fiction and cats. BIX recently installed a multiuser CB service, but you're better off going elsewhere for real-time chat because of the hourly rate.

The Well

Offering mostly life-style and computer-oriented information, The Well isn't a network per se, although it is relatively extensive along general-information lines if you're into environmental issues, things like the *Whole Earth Catalog*, or getting into a C-shell operating environment on a VAX. Specialized, unique, and timely, The Well gets the heaviest use by West Coast computer professionals and people who are interested in technological developments.

The Payoff

Because of the wide availability of the Telenet and TYMNET telephone carrier services, you won't have to pay long-distance telephone fees to connect with a computer network, provided you live in a major metropolitan area.

You usually pay for long-distance telephone usage indirectly, as these charges are included in the access fees for the time you're connected to the host system, but it's a lower rate than dialing direct. You may also wind up incurring long-

FOR

Until recently, on-line services have been generalists, trying to be all things to all telecommunicators. These services often offer a great variety of information—but the user interface sometimes makes their information hard to obtain.

The appearance of on-line services tailored to specific types of computers—such as AppleLink and Prodigy—has created more accessible telecommunication. AppleLink—The Personal Edition uses custom software created for the Apple II and Macintosh computers. Prodigy uses software designed for MS/DOS-compatible machines, including Apple II computers running PC Transporter. Both have graphical interfaces that make them easy to use, but people perceive them as limited services, offering little in the way of general information. This perception is far from the truth.

AppleLink

AppleLink—The Personal Edition (see "AppleLink—The Personal Edition," July 1988) has been touted as the service specifically for Apple II and Macintosh users. Its Apple Community section offers much Apple II and Mac-specific information, including tech notes, product specs, manual descriptions, and product-compatibility and bug reports. In addition to the Apple Community, however, AppleLink has an eight-part General Services section.

The General Services Mall area, for example, includes access to American Airlines EAAasy Sabre travel service. The Newsroom contains extensive articles on many subjects, organized in categories and windows. A separate financial section includes industry watch and personal-investing news from *USA Today*; forums on investing and managing money; and price, trend, change, dividend, yield, earnings, and price/earnings-ratio data on individual stocks.

The Grolier Academic American

YOUR LINE ONLY

Encyclopedia, containing more than 30,000 articles, is available in AppleLink's Learning Center. Grolier also sponsors a Reference Desk on AppleLink, where you can ask questions and get responses, normally within two business days.

The Learning Center's University of Tomorrow offers courses in several departments, including business, English, general studies (courses ranging from SAT preparation to photography), and math. A tutoring center offers assistance in general science, physical science, chemistry, biology, music, general math, English, Spanish, and SAT preparation.

Prodigy

The Prodigy Service is from Trintex, a joint venture of Sears and

IBM. Currently the custom software is available only for MS-DOS machines, but the company is planning to release an Apple IIGS and a Macintosh version in 1989—and possibly even an Apple IIe/c/c+ version.

Prodigy can be described as an electronic combination of *USA Today* and a suburban shopping mall. It is graphics-oriented, using a fast method of sending graphics that, in effect, tells the computer to draw a particular shape of a particular size at a particular screen location.

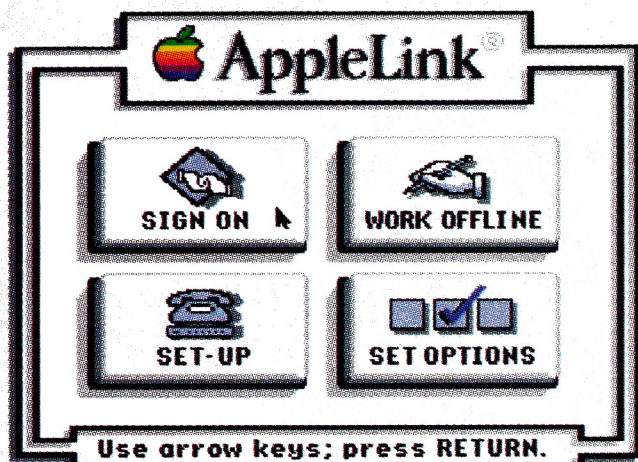
Prodigy comprises six different areas, called buildings, each devoted to a particular area such as living, shopping (two separate areas), investing, and traveling.

The buildings are themselves di-

vided into floors, or subtopics. For example, the Information building has newsroom, business, sports, weather, and consumer-reports floors, and the Living building has under-21, life-style, health, travelog, and computing floors.

On-line columnists and experts, to whom you can send questions and comments, reside on many of the floors. Among the topics with experts are automotive repair, bridge, careers, clothing, computers, fitness and nutrition, gardening, gossip, health, home maintenance, investments and money, movies, personal advice, personal finance, politics, real estate, restaurants, singles, sports, taxes, teen advice, travel, weather, and wine.

Michael Fischer



Both AppleLink — The Personal Edition (above) and Prodigy (below) have graphical interfaces that make them easy to use. AppleLink uses custom software created for the Apple II and Macintosh computers; Prodigy currently uses software designed for MS/DOS-compatible machines, including Apple IIs running PC Transporter.



Programs & Peripherals

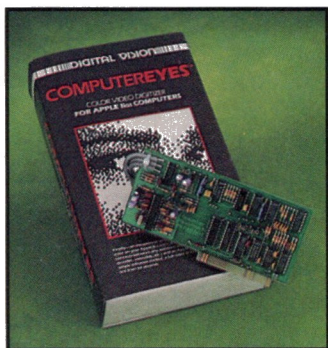
Modems

Anchor Automation 1200E 2400E	119.	159.	Practical Modem 1200 SA	109.
Applied Engineering			Practical Modem 2400 SA	189.
DataLink Modem 1200B			Prometheus Pro Modem 2400 (External)	255.
(Int II+, IIe or IIgs)			Pro Modem 2400G (Non Expandable)	179.
DataLink Modem 2400B	139.		Pro Modem 2400A (Single Card)	139.
(Int II+, IIe or IIgs)			Pro Modem 1200A (Single Card)	119.
EPIC Epic 2400 Classic II Internal	185.		Pro Modem 300c	82.
Epic 2400 Mini Modem Ext.	Special 179.		Supra Corporation	
Hayes Hayes 1200 Baud Smartmodem	299.		Supra Modem 2400 (Hayes Compatible)	149.
Hayes 2400 Baud Smartmodem	449.		U.S. Robotics	
MDideas CommLink 2400	189.		U.S. Robotics Courier 1200	199.
Practical Peripherals			U.S. Robotics Courier 2400	349.
Practical Modem 1200 SA Mini	85.		U.S. Robotics Courier 2400E	379.
			U.S. Robotics Courier HST 9600	689.

Printer Interface Cards

Apple Apple Super Serial Card	119.	Hot Link	49.
Applied Engineering BufferPro 32K	99.	SMIT No Slot Clock	42.
BufferPro 128K or 256K	Call	Print Tech II (Parallel Interface)	37.
Serial Pro (II+, IIe, IIgs)	115.	Thirdware Finger Print GSI Ver 2 (Includes	
Parallel Pro (II+, IIe, IIgs)	85.	Desktop Accessories-IIgs)	Special 79.
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ProGrappler (Apple IIe or IIgs)	84.	(Specify Cables: Parallel,	
Serial Grappler Plus	62.	Serial or ImageWriter II-II+ & IIe)	89.

Computer Eyes by Digital Vision



Computer Eyes is the economical way to capture exciting real world images and display them on your Apple II. Simply install **Computer Eyes** in any slot of your Apple II, attach it to any standard video source (video camera, VCR, or video disk) and in six seconds scan any image! **Computer Eyes** automatically calibrates brightness and contrast, but you can always adjust them after the acquisition to suit your tastes. **Computer Eyes** supports Hi-Res and Double

Hi-Res modes (Color and optional Super Hi-Res supported on the IIgs version). You can export your scans to desktop publishing programs (like Springboard Publisher) for use in newsletters, flyers, or anything you produce. **Computer Eyes** includes user-friendly menu driven software so you can start scanning today!

Computer Eyes (IIe & IIc)	109.
Computer Eyes for the IIgs	209.

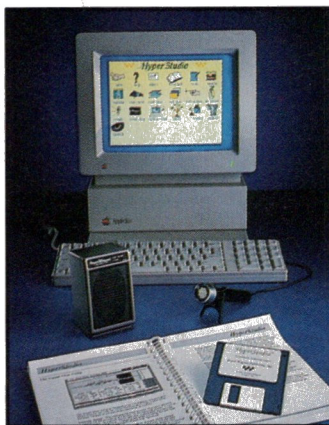
Utilities & Languages

Absoft AC/BASIC (16-bit BASIC Compiler for IIgs)	Special 84.	ORCA/Pascal Desktop (IIgs)	34.
Funk Software		TML Systems	
Sideways Prodos & Dos 3.3	45.	TML Basic (IIgs)	84.
Roger Wagner SoftSwitch (IIgs)	39.	TML Pascal (IIgs)	84.
Merlin 8/16 (IIe, IIc, IIgs)	79.	TML Source Code Library (IIgs)	35.
The Byte Works ORCA/M (IIgs)	39.	TML Speech Toolkit (IIgs)	49.
ORCA/Pascal Desktop Debugger	80.	Zedcor	
		ZBASIC 4.0 Interactive Compiler	39.

Disk Drives & Hard Disk SubSystems

American Micro Research (Micro Sci)		Cutting Edge XL 30 + SCSI HD (IIe & IIgs)	629.
A5 D Half Height 5 1/4" Drive		XL 45 + SCSI HD (IIe & IIgs)	829.
(IIgs Daisychain)	165.	First Class T6 60MB Tape	709.
A5 Half Height (II+ & IIe)	139.	D2 20MB HD (IIe & IIgs)	Special 509.
A5C Half Height (IIc)	139.	D4/A 40MB HD (IIe & IIgs)	645.
Micro Sci C2 Controller	52.	D4/T 40MB HD/High Perf. (IIe & IIgs)	855.
Applied Engineering Transdrive 360K	219.	D9 90MB HD/High Perf. (IIe & IIgs)	1465.
Transdrive Dual 360K	305.	D96 Combo 90MB HD & 60MB Tape	
Transdrive Half Height 360K	119.	(IIe & IIgs)	2155.
Chinook CT-20 Hard Drive (AP & IIgs)	665.	Rodime Rodime 20 Plus Ext HD (IIe, IIgs)	629.
CT-20c Hard Drive IIc	709.	Rodime 45 Plus Ext HD (IIe, IIgs)	939.
CT-30 Hard Drive (AP & IIgs)	739.	Rodime 60 Plus Ext HD (IIe, IIgs)	1019.
CT-40 Hard Drive (AP & IIgs)	835.	Rodime 100 Plus Ext HD (IIe, IIgs)	1169.
CMS		Rodime 140 Plus Ext HD (IIe, IIgs)	1319.
"SD Series - Stack" Platinum IIe, IIgs		Video Technology Universal Disk Controller	79.
20 MB w/SCSI II card	645.	Laser 800KB Drive	185.
43 MB w/SCSI II card	845.	Universal Disk Controller/800KB	
60 MB w/SCSI II card	950.	Drive Bundle	259.

HyperStudio for the IIgs by Roger Wagner



HyperStudio brings the newest computer revolution to IIgs owners! **HyperStudio** lets anyone create and use hypermedia applications. **HyperStudio** combines Super Hi-Res graphics (from popular paint programs or built-in paint tools), text from a text file, AppleWorks, or built-in editor), and digitized sound files from your own hardware or the included hardware, all in one integrated environment. **HyperStudio** includes sound digitizing software, a 'no-slot' digitizer card, microphone, and amplified speaker. You can create applica-

tions including interactive lessons to adventure stories, and much more!

HyperStudio for the IIgs 85.

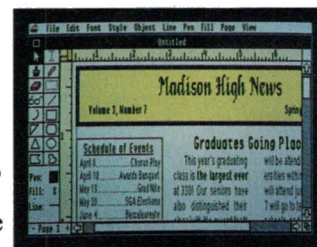
Accessories

Apple Computer Apple Mouse IIe	125.	Apple Security System	34.
Apple Mouse IIc	85.	Printer Muffler 80	43.
Applied Engineering TimeMaster II H.O.	79.	Printer Muffler 132	58.
IBM Style Keyboard or Sonic Blaster (IIgs)	119.	Printer Muffler Stand 80 or 132	24.
Audio Animator (IIgs)	185.	AntiGlare Filter IIgs	39.
Asher Engineering		System Saver (Platinum or Beige)	69.
Turbo Trackball (IIe or IIgs)	69.	System Saver (IIgs)	79.
Bose RoomMate Powered Speaker System	229.	New Turbo Mouse (Reg. or ADB)	119.
CH Products Hayes Flight Stick	52.	Kraft	
Hayes Mach II Joystick (Beige or Platinum)	29.	Universal 3 Button Joystick (IIe or IIc)	34.
Hayes Mach III Joystick (Beige or Platinum)	36.	Koala Technologies	
Hayes Mach IV Plus Quad or ADB	65.	Koala Pad Plus w/Graphics Exhibitor	84.
Mirage Quad or ADB		Kurta IS ADB Tablet w/stylus (IIgs)	339.
(Turns joystick into mouse)	39.	MDideas Digitizer Professional (IIgs)	139.
Curtis Curtis Emerald	36.	The Conservor (IIgs Switched	
Curtis Ruby	55.	Surge Suppressor w/Fan)	99.
Cutting Edge EADB-105 Extended		SuperSonic (Stereo Card for IIgs)	49.
Keyboard (IIgs)	125.	SuperSonic Digitizer (IIgs)	49.
Digital Vision		Mouse Systems A+ Mouse (IIc)	65.
Computer Eyes (IIe or IIc)	Special 109.	A+ ADB Mouse (IIgs)	85.
Computer Eyes (IIgs)	Special 209.	MouseTrak MousePad 7" x 9" Size	8.
Ergotron Mouse Cleaner 360° (IIgs)	15.	MousePad 9" x 11" Size	9.
Epyx Epyx 500J Joystick	27.	MousePad L/F (Low Friction)	9.
Kalmar		Ribbons	
Teakwood Rolltop Disk Case (Holds 50)	18.	Available colors: black, blue, brown, green,	
Kensington Mouse Pocket (Reg. or ADB)	8.	orange, purple, red, yellow, silver or gold	
Mouseway (Mousepad)	8.	ImageWriter Ribbon-Color	4.
Apple IIgs Dust Cover or Imagewriter Cover	9.	ImageWriter Ribbon-Black six pack	20.
Mouse Cleaning Kit w/Pocket	17.	ImageWriter II - 4 Color Ribbon	9.
Disk Drive Cleaning Kit (3.5" Drives Only)	20.	ImageWriter Rainbow Pk. (6 Colors)	20.

GraphicWriter III for the IIgs by Seven Hills

GraphicWriter III is the feature-packed desktop publishing package for Apple IIgs owners. **GraphicWriter III** offers word processing, graphics, and page layout in one user-friendly, integrated program! You'll have all the tools you need to design and create quality publications at your fingertips. It's Mac-like interface enables most users to start publishing less than one hour after booting up! But you won't have to duplicate your previous work because **GraphicWriter III** lets you import images from graphics programs like Paintworks Gold and text from AppleWorks and other word processors. You can design newsletters, forms, announcements, and just about anything else you can think of! GS/OS, sample style sheets, clip art and spelling checker are included free.

GraphicWriter III for the IIgs 85.



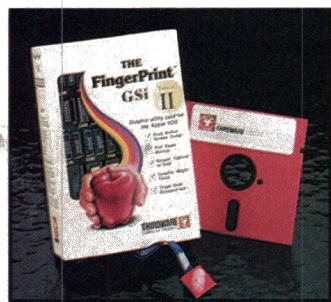
to Polish Up Your Apple

Communication Software

Activision		Grolier On Line Encyclopedia	32.
Televorks Plus (IIgs)	66.	Pinpoint	
Checkmate Technology		Point-To-Point	74.
ProTERM (IIgs, IIe, IIc)	95.	United Software Industries	
Compuserve		ASCII: Express Pro: Prodos or Dos 3.3	72.
Compuserve Starter Kit	24.	ASCII: Express Mousetalk 1.5	69.

Specials good through
February 28, 1989

FingerPrint GSi by Thirdware



FingerPrint GSi is the graphics utility card that instantly captures and dumps screen images to your printer or disk. But **FingerPrint GSi** does much more - you can crop, rotate, stretch, invert, reposition and enlarge captured images up to 140 feet by 100 feet. You can also reload saved screen images into graphics programs, desktop publishing packages, and word processors that support imported

graphics at the touch of a button! **FingerPrint GSi** comes with loads of extras - including three desk accessories (calendar, typewriter, and calculator), printer/ font utilities, and page formatting tools that help make you and your Apple IIgs more productive. Years of use are guaranteed by Thirdware's five year, no hassle warranty.

FingerPrint GSi for the IIgs 79.

Apple Compatible Computers

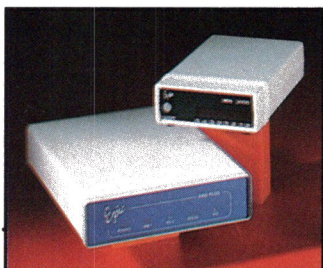
Video Technology		Laser 190A Printer	
Laser 128 Computer	379.	(Imagewriter Compatible)	239.
The Laser 128 includes an Expansion Slot, RGB Video Output, Parallel Printer Port, and a 10 Key Numeric Keypad!		Laser RGB Monitor	399.
Laser 128EX Computer	459.	Laser Amber Monitor	99.
The Laser EX includes a Built-in RAM Expansion Board, Universal Disk Controller, Built-In Expansion Slot, and Ports for all Peripherals!		Laser 128 2nd Disk Drive	
		(5 1/4" 1/2 height)	89.
		Laser 128 800K 3.5" Drive w/Controller	259.
		Laser 128 Cables	
		(Parallel, Serial, RGB or Modem)	16.
		Laser 128 Mouse	49.

Backup Utilities & Boards

Alpha Logic		Central Point Software	
Locksmith 6.0	36.	Copy II Plus (5.25" & 3.5" Bit Copy)	23.
Apple		FWB Software	
GS/OS (IIgs)	34.	Disk Util II (IIgs)	52.

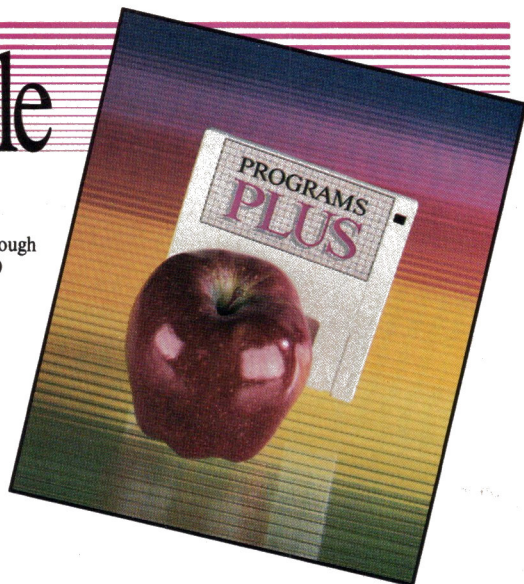
2400 Classic II & 2400 Mini Modems by Epic Technology

2400 Classic II (Internal) and **2400 Mini (External)** modems are designed to make the most of your communications dollar. Both modems come bundled with ProTERM software, the most powerful and flexible communications software package on the market! Each modem offers auto dial/answer, auto baud capability, call progress detection, data to voice switching, and redial on busy to make your communicating efficient and simple. Complete self-test support makes troubleshooting a breeze, and Epic backs its modems with an ironclad five year warranty. We recommend the **Epic 2400 Classic II** internal modem (for Apple II+, IIe and IIgs) where portability is important, and the **Epic 2400 Mini** external modem if you use more than one computer.



Complete self-test support makes troubleshooting a breeze, and Epic backs its modems with an ironclad five year warranty. We recommend the **Epic 2400 Classic II** internal modem (for Apple II+, IIe and IIgs) where portability is important, and the **Epic 2400 Mini** external modem if you use more than one computer.

2400 Classic II	179.
2400 Mini	179.



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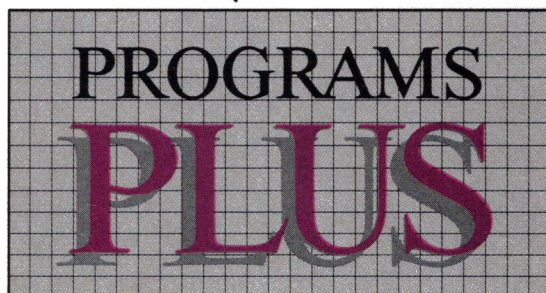
- **Continental United States:** \$4.00 (Min) per order to cover Federal Express Standard Air service. APO/FPO orders shipped 1st Class Mail (add 3% \$5.00 Min charge). **Alaska, Hawaii and Outside Continental US:** call or write for information.

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Positively A Plus

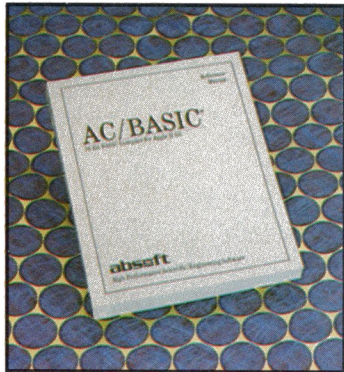


75 Research Drive,
Stratford, CT 06497

800/832-3201

... Positively A Plus!

AC/BASIC for the IIGs by Absoft



AC/BASIC is the BASIC compiler that puts the power of the Apple IIGs at the fingertips of novice and experienced programmers alike. The only compiler with direct support for graphics and sound, plus other high performance features make **AC/BASIC** the choice for building all applications. **AC/BASIC** offers the most in structured programming features, including independent sub-programs, global variable declaration, and chaining to other programs.

AC/BASIC includes a comprehensive manual and over 200 example programs, so everyone can immediately begin to create the programs they want. **AC/BASIC** includes an editor and runtime error reporting for fine-tuning your programs, supports creation of stand-alone applications, and allows you to 'port' many programs from MS BASIC created on a Macintosh.

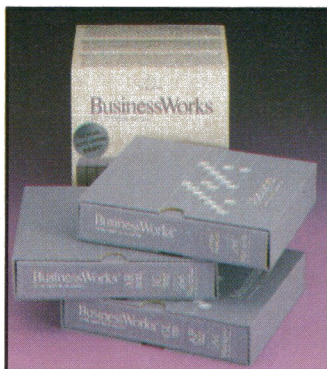
AC/BASIC for the IIGs 84.

Graphics Packages

Abracadata		Electronic Arts DeluxePaint II (IIGs)	65.
Design Your Own Home: Architecture (IIGs)	65.	DeluxeWrite w/DeluxePaint II (IIGs)	89.
Design Your Own Home: Architecture, Interiors or Landscape	49.	DeluxeWrite (IIGs)	59.
Design Your Own Train	35.	Video Title Shop Companion Vol 1	30.
Architecture Library 1, 2, 3 or 4	21.	Video Title Shop Companion Vol 2	15.
Interiors Library 1, 2 or Landscape Library 1	21.	EPYX Art & Film Director (IIGs)	55.
Activision Postcards (IIGs)	19.	Printmagic	41.
Paint/Write/Draw (Not Protected IIGs)	80.	Create-A-Calendar	21.
PaintWorks Gold or Draw Plus	66.	PBI Software Visualizer (IIGs)	56.
Baudville		Visualizer IIe	47.
816/Print (Works On All Apples)	46.	Roger Wagner Graphic Exchange (IIGs)	35.
Award Maker Plus (IIGs & IIGs)	46.	Springboard Newsroom	36.
Berkeley Softworks GEOS	80.	Springboard Publisher 2.0 (IIGs or IIGs)	84.
GEOPublish	65.	Certificate Maker	26.
Broderbund		Certificate Maker Library #1	20.
Dazzle Draw or Show Off (IIGs)	39.	Fonts For Springboard Publisher (IIGs)	18.
Print Shop Enhanced or Fantavision	29.	Newsroom Clip Art Collection Vol. 1 or 3	20.
Print Shop (IIGs) or Fantavision (IIGs)	39.	Newsroom Clip Art Collection Vol. 2	23.
Print Shop School Edition	39.	Style Sheets/Newletters (IIGs or IIGs)	20.
Dazzle Draw School Edition	45.	Works of Art Education, Holidays or Assortment (IIGs or IIGs)	26.
Print Shop Companion	25.	Stylware TopDraw	43.
Print Shop Graphics Library I, II, III or Holiday Ed.	16.	Thunderware	
Print Shop Graphics Lib. Sampler Ed. (IIGs)	24.	ThunderScan (IIGs, IIGs, & IIGs)	179.
Print Shop Graphics Lib. Party Ed. (IIGs)	24.	Unison World	
Data Transforms Printrix 1.1	45.	Printmaster Plus (IIGs & IIGs)	25.
		Art Gallery I or Art Gallery II	19.
		Art Gallery Fantasy	19.

BusinessWorks by Manzanita

BusinessWorks is the accounting package for small and medium sized businesses that need G/L, A/P, A/R, and Inventory combined in one comprehensive, flexible package. **BusinessWorks** lets you set up your chart of accounts the way you want it, so there's no more messing around with "standard" forms, and you can customize your reports to display the information you want displayed. **BusinessWorks** looks and acts just like AppleWorks, and you can export data to the database and spreadsheets in AppleWorks for specialized financial analysis. **BusinessWorks** is the accounting solution for Apple II owners!



BusinessWorks 299.

Blank Media

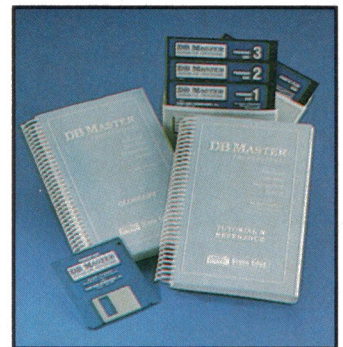
3 1/2" Blank Diskettes		Fuji 3.5" DS/DD (box of 10)	19.
Bulk (Sony) 3 1/2" DS/DD (box of 10)	17.	Maxell 3.5" DS/DD (box of 10)	20.
Centech 3 1/2" DS/DD Color Disks (box of 10)	19.	Verbatim DS/DD (box of 10)	19.
Sony 3.5" DS/DD (box of 10)	18.	3M 3.5" DS/DD (box of 10)	20.
		C. Itoh 3.5" DS/DD Color Disks (box of 10)	25.

Printers

Brother M-1109AP (ImageWriter Comp.)	249.	KXP-10911/M2 (192 cps) NLQ Mode	209.
Okidata		KXP-10921 (240 cps) NLQ Mode	349.
Microline 182Plus (120cps Dot Matrix 10")	275.	Seikosha	
Microline 320Plus (300cps Dot Matrix 10")	385.	Seikosha SP 1000	
Microline 321Plus (300cps Dot Matrix 15")	539.	(Imagewriter Compatible)	235.
Panasonic		Video Technology	
KXP-10801/M2 (144 cps) NLQ Mode	195.	Laser 190A (Imagewriter Compatible)	239.

DB Master Professional by Stone Edge Technologies

DB Master Professional brings the power of a relational database manager to Apple II users at an affordable price. Accountants, educators, salespeople, and anyone else who needs to keep track of interrelated types of information can put **DB Master Professional** to work automating the tedious task of record keeping. Simple "import and export rules" let you relate up to 10 files for automatic data entry, posting, and updating. Its full-featured report generator lets you print your information in easy-to-read columnar and form type reports. **DB Master Professional** offers flexible address label printing and mail merge for efficient form letter processing. Its password security option and AppleWorks compatibility are just some of the features that make **DB Master Professional** the database choice.



DB Master Professional 195.

Business Software

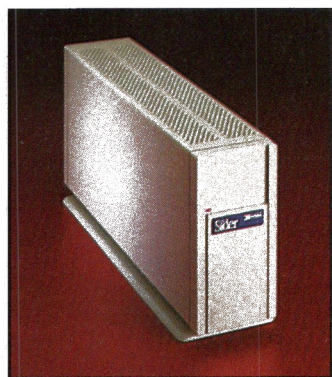
Activision List Plus or Writer's Choice Elite	65.	Pinpoint Publishing Graphics Edge	55.
Addison-Wesley Wordbench (IIGs & IIGs)	99.	Pinpoint IIGs Starter Kit	85.
Beagle Brothers Timeout Graph	55.	Pinpoint Speller/Document Checker Combo	61.
Timeout SuperFonts	45.	Pinpoint	50.
Timeout QuickSpell	45.	Pinpoint Spelling or Document Checker	42.
Timeout UltraMacros or SpreadTools	37.	Key Player	30.
Timeout SideSpread, FileMaster, or DeskTools	32.	ProFILER 3.0	74.
Timeout Thesaurus, DeskTools II or PowerPack	32.	Roger Wagner Publishing	
GS Font Editor or Program Writer	32.	Mouse Write (IIGs, IIGs, & IIGs)	84.
Timeout MacroTools or MacroTools II	19.	Sensible Software	
Broderbund On Balance	39.	Sensible Grammar ProDos (3.5" & 5.25")	59.
Bank Street Writer Plus	50.	Sensible Speller ProDos w/3.5" & 5.25"	69.
Claris Apple Works (IIGs or IIGs)	215.	Seven Hills Software	
Dac Software Dac-Easy Accounting	65.	Graphicwriter III (IIGs)	Special 85.
Datapak Notes 'N Files (IIGs)	74.	Simon & Schuster	
Garde Footing To Finish	55.	Webster's Spelling Checker (ProDos)	41.
ImagiMedia FactWorks 1, 2, 3 or 4	24.	Software Publishing	
Intuit Quicken	34.	All Programs for IIGs with 128K or IIGs	
Legi Soft Will Maker	39.	PFS: Workmates (File/Report/Plan/Write)	119.
Manzanita BusinessWorks		Softsync Personal Newsletter with Clip Art	39.
System Manager (IIGs & IIGs) (Required)	69.	Softview TaxView Planner (IIGs) or TaxView Federal (IIGs)	72.
GL/AR/AP/ or Inventory Control (IIGs & IIGs)	139.	California or New York Supplement (IIGs)	39.
Payroll Module (IIGs & IIGs)	139.	Stone Edge DB Master v5	145.
BusinessWorks Bundle IIGs & IIGs (Sys. Manager, G/L, A/P, A/R, Inventory)	Special 299.	DB Master Professional (IIGs)	Special 195.
MECA		Stylware Deskworks (IIGs)	30.
Managing Your Money 3.0 (IIGs, IIGs, & IIGs)	95.	Picture Manager or Desk Accessories	26.
Mecc Calendar Crafter School (IIGs)	59.	Third Wave Technology Magna Charta	41.
Milliken Medley (IIGs)	126.	Print-Quick	34.
Monogram		Print-Quick Font Disk 1 or 2	15.
Dollars and Sense (IIGs, IIGs or IIGs)	72.	Timeworks Art Portfolio 4 in 1	75.
Multisoft DoReMe	55.	Publish-It 2.0 (IIGs or IIGs)	84.
Peachtree Back To Basics		People, Places and Things (IIGs & IIGs, Design Ideas (IIGs & IIGs), Symbols and Slogans (IIGs & IIGs), Education Graphics (IIGs & IIGs), Font Pack 1 or 2 (IIGs & IIGs)	27.
Accounting System: GL/AR/AP	129.	Word Perfect Corporation	
		WordPerfect V1.1 w/Speller (IIGs & IIGs)	99.
		WordPerfect (IIGs)	99.

Shipped Federal Express

Accelerators/Ramcards/Z-80/80 Column Cards

Apple Computer		
Apple IIe Extended 80 Col. Card	89.	GS-RAM (256K to 1.5Meg)
Apple IIe Enhancement Kit	49.	GS-Ram Plus (1MB to 6MB)
Applied Engineering		
Ramkeeper or SlotMover (Option)	Call	Phasor (II+, IIe, or IIgs)
RamWorks Basic (256K or 512K)	Call	TransWarp Accelerator (II+ and IIe)
RamWorks III (64K to 3 MB)	Call	ViewMaster 80 (II+)
PC Transporter (768K)	Call	Z-80 Plus (II+, IIe, IIgs)
PC Transporter Installation Kit (IIe or IIgs)	Call	Checkmate Technology
RamFactor (256K to 1MB)	Call	MemorySaver (IIgs)
Z-RAM Ultra 1 (256K or 512K)	Call	Orange Micro
Z-RAM Ultra 2 or 3 (256K to 1MB)	Call	RamPak 4GS
		(512k Exp. to 4MB w/Utilities)
		Zip Technology Zip Chip

Sider D2 20 Megabyte HDD by First Class Peripherals



The Sider D2 20 Megabyte Hard Disk Drive is a reliable, affordable mass storage solution for Apple IIe and IIgs owners. This 20 megabyte hard disk is shipped with all cards, cables and accessories required to operate. But most important, this drive supports four operating systems - ProDos (all versions), Dos 3.3, CP/M, and Apple Pascal - so you can run virtually all Apple II software from one hard disk. The Sider includes formatting utilities which allow you to assign disk

memory to one, some, or all four operating systems, offering the user complete flexibility in control of partition format and size. The Sider is daisy-chainable with other Sider products, including the T6 tape backup. The included diagnostics package, one year warranty on parts and labor, and readily available technical support assure a solution in the unlikely event that a problem does occur.

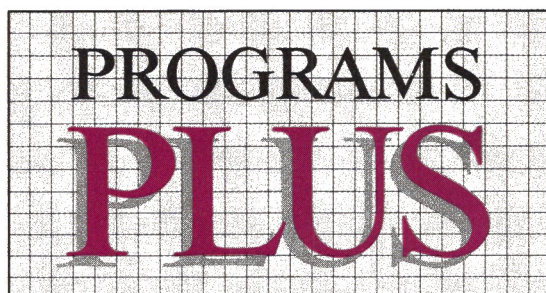
Sider D2 **509.**

Educational Software

Activision Term Paper Writer	34.	Harcourt, Brace, Jovanovich	
Barron's Computer SAT Revised Version	34.	Computer SAT	29.
Britannica JigSaw (IIgs)	25.	Learning Company	
Body Transparent or States & Traits	25.	Reader Rabbit (IIgs) or Writing and	
Algebra 1, 2, 3, or 4	25.	Publishing Center (AP or IIgs)	39.
Algebra 5 & 6	31.	Writer Rabbit (IIgs), Think Quick (IIgs)	
Designasaurus	24.	or Rockys Boots (IIgs)	34.
Designasaurus (IIgs)	28.	Magic Spells (IIgs) or Math Rabbit	27.
Millionaire II	39.	Gertrude's Secrets (IIgs)	24.
Broderbund Type!	19.	Think Quick, Writer Rabbit	
Science Tool Kit Master Module	50.	or Math Rabbit (IIgs)	32.
Science Tool Kit Module I, II or III	26.	Reader Rabbit, Magic Spells	
Where in the World is Carmen Sandiego?	25.	or Rocky's Boots	37.
Where in the USA is Carmen Sandiego?	29.	MindPlay Easy Street or Cotton Tales	25.
Where in Europe is Carmen Sandiego?	29.	Mindscape Crossword Magic	34.
Coda Music Class Courses 1, 2 or 3	35.	Perfect Score SAT	48.
Music Class Courses 4 or 5	27.	Pinpoint Micro Cookbook (IIe or IIc)	31.
Music Class Courses 1-5 (Bundle)	149.	Bon Appetit	37.
Fundamentals, Rhythm, or Ear Training	35.	Roger Wagner HyperStudio (IIgs)	Special 85.
Music Symbols or Note Reading	27.	Sensible Software Report Card II (IIe & IIgs)	37.
Compu-Teach Once Upon A Time	25.	Simon & Schuster	
Stepping Stones Level I or II	25.	Speed Reading Tutor IV	
Joshua's Reading Machine	25.	or Typing Tutor IV	27.
See the U.S.A.	37.	Speed Reader Tutor IV (IIgs)	34.
Davidson & Associates		Typing Tutor IV (IIgs)	34.
Math Blaster Plus (IIgs)		Spinnaker Kidwriter Gold (IIgs)	31.
or Word Attack Plus (IIgs)	29.	Homework Helpers Writing or	
Alge-Blaster or Math Blaster Plus	29.	Math (IIe or IIgs)	34.
Grammar Gremlins or Read 'N' Roll	29.	Facemaker: Golden Edition	27.
Spell-It or Word AttackPlus!	29.	Kidwriter	27.
Math & Me (IIgs) or Reading & Me (IIgs)	29.	Terrapin Terrapin Logo Plus	79.
Math & Me or Reading & Me	25.	Weekly Reader	
Electronic Arts Mavis Beacon Typing	30.	Stickybear Series: Sticky Bear ABC, Car	
Mavis Beacon Typing (IIgs)	37.	Builder, Basic, Drawing, Map Skills,	
First Byte/Electronic Arts		Math I, Math II, Math Word Problems,	
MathTalk, KidTalk, First Shapes, Speller		Numbers, Opposites, Parts of Speech,	
Bee, or Smoothtalker (All IIgs, each)	33.	Printer, Punctuation Rules, Reading,	
MathTalk Fractions or First		Reading Comprehension, Shapes,	
Letters & Words (All IIgs, each)	33.	Spellgrabber, Typing, Townbuilder or	
Great Wave Kidtime II (IIgs)	24.	Vocabulary Development (each)	24.
SpaceLace	20.	Stickybear New Talking Alphabet (IIgs)	31.

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Mean 18 (IIgs), Hardball (IIgs) or		FTL Dungeon Master (IIgs)	29.
Serve & Volley	27.	Garde Blue Powder Grey Smoke or	
Mini-Putt (IIgs) or 4th & Inches (IIgs)	27.	High Seas	29.
Famous Course Disk Vol. 2 or Hardball	12.	Hayden Software Sargon III	14.
Famous Course Disk Vol. 3 & 4	21.	Infocom Leather Goddesses Of Phobos	
Test Drive or Bubble Ghost (IIgs)	19.	or The Lurking Horror	25.
Action Software Thunder Chopper	23.	Hitchhiker's Guide to The Galaxy	15.
Activision Jinxter or Rampage	19.	Sherlock	24.
Star Rank Boxing II or Firepower	24.	Beyond Zork (IIe or IIgs) or The Zork Trilogy	34.
The Last Ninja or Maniac Mansion	24.	Zork Zero, Journey (IIe or IIgs) or ShoGun	34.
GFL Championship Football or		Zork Zero (IIgs) or ShoGun (IIgs)	41.
GBA Championship Baseball	24.	Intracorp Murder on the Atlantic (IIe & IIgs)	21.
GBA Championship Basketball	24.	MasterPlay Star Saga: One! (AP or IIgs)	55.
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Ticket to Washington, D.C.	27.	Infilitrator II	24.
Broderbund Wings of Fury (IIe, IIc, IIgs)	23.	Balance of Power (IIe & IIgs),	
Ancient Art of War at Sea	31.	Joker Poker, Gauntlet (IIgs)	
VCR Companion	39.	or Super Star Ice Hockey (IIgs)	29.
Ultima IV or Ultima V	25.	Super Star Ice Hockey	27.
California Dreams Vegas Gambler (IIgs),		Gauntlet or Paperboy (IIe or IIgs)	25.
Vegas Craps (IIgs) or Triango (IIgs)	25.	Organ Systems Times of Lore (IIgs)	27.
Mancala (IIgs) or Club Backgammon (IIgs)	25.	PBI Software Strategic Conquest II (IIgs)	
Cinemaware Defender of the Crown (IIgs)	32.	or Cavern Cobra (IIgs)	31.
or King of Chicago (IIgs)	32.	The Tower Of Myraglen (IIgs) or	
Data East Kid Niki, Ikari Warrior or Platoon	23.	Alien Mind (IIgs)	32.
Datasoft Tomahawk	30.	Sea Strike (IIgs) or Monte Carlo (IIgs)	25.
Tomahawk (IIgs) or Hunt for Red October	23.	Share Data	
Hunt for Red October (IIgs)	41.	Concentration, Card Sharks, Jeopardy,	
Diversified Software Research		Family Feud or Wheel of Fortune	11.
Diversi-Tune (IIgs)	55.	Jeopardy II or Wheel of Fortune II	10.
Electronic Arts Chessmaster 2100	33.	Sierra On-Line Space Quest (IIe or IIgs),	
Cartooners (IIgs) or Puppeteers (IIgs)	44.	or Space Quest II (IIe or IIgs)	32.
Bards Tale (IIgs), Bards Tale II (IIgs),		Kings Quest I, II, or III (IIe or IIgs)	32.
Instant Music (IIgs), Music Construction		Leisure Suit Larry (IIe or IIgs)	26.
Set (IIgs), Bards Tale II, Madden Football,	33.	Thexder (IIgs)	24.
Bards Tale III, or Wasteland		ManHunter (IIgs) or Police Quest (IIe or IIgs)	32.
Legacy of the Ancients, Deathlord, Chuck		Mother Goose (IIe or IIgs)	19.
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Zany Golf (IIgs), Halls of Montezuma,		Sir-Tech Wizardry or Legacy of Lyligamyn	32.
Earl Weaver Baseball, World Tour		Heart of the Maelstrom	34.
Golf (IIgs), or Skate or Die (IIgs)	26.	Return of Werdna	39.
Strike Fleet, PHM Pegasus or		Sphere, Inc. Gato	12.
Marble Madness (IIe or IIgs)	23.	Soko-Ban (IIe or IIgs)	23.
EPYX Sub Battle Simulator (IIgs), Home		Tetris (IIe or IIgs)	25.
Video Producer, The Games: Winter		Wilderness or Dondra	31.
Edition, The Games: Summer Edition,		Strategic Simulations Wizards Crown,	
or L.A. Crackdown	32.	Eternal Dagger or Roadwar 2000	26.
California Games (IIgs), Destroyer (IIgs),		AD&D Dungeons Mstr. Asst. Vol 1	23.
Street Sports Soccer (IIgs), Final Assault (IIgs),		Queston II, Roadwar 2000 (IIgs) or	
or Impossible Mission II (IIgs)	29.	AD&D Pool of Radiance	30.
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Sub Battle Simulator		Scenery Disks 1, 2, 3, 4, 5 or 6	16.
Street Sports: Basketball		Scenery Disks 7, 11 or	
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World Games (IIe or IIgs)	14.	Taito Arknoid (AP or IIgs)	21.
World's Greatest Baseball or Football Game	14.	Bubble Bobble (AP or IIgs) or	
		Renegade (AP or IIgs)	24.



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distance charges to the nearest city if you live outside a big city. You simply dial the nearest Telenet or TYMNET "node."

One way to further reduce costs is to join PC Pursuit, a service of GTE Telenet. For \$25 a month, membership in PC Pursuit lets you call computers in 33 major U.S. metropolitan areas during evenings, weekends, and holidays (no, it doesn't work for voice communi-

Telecommunications

cations) without incurring long-distance telephone charges. PC Pursuit permits greater access to privately owned electronic bulletin-board services (BBSs or "boards") and reduces the cost of accessing some commercial information services. Chicago-based American PeopleLink and San

Francisco-based The Well and Portal (the latter available *only* directly or through PC Pursuit) are examples of qualifying services. They generally cost \$2 an hour *less* than standard fees with a PC Pursuit membership. Contact Telenet (800-835-3638) for information.

Caveat Emptor

At the heart of telecommunications is a device called a modem (it *modulates* and *demodulates* elec-

NEWSLINE

Dialog Information Services, Dow Jones News/Retrieval, and NewsNet are deservedly three of the big names in on-line data services.

Dow Jones is the place to go when you want nearly any kind of financial information. The company has published the *Wall Street Journal* and compiled financial information for years. Dow Jones News/Retrieval lets you search much of this data electronically.

The main menu of Dow Jones News/Retrieval has eight selections: business news, general news, company and industry statistics and forecasts, company profiles and reports, quotes and market averages, business services, general services, and on-line reference tools. A free on-line help and system-information section provides an easy way of learning about the system.

In business news, you can retrieve and search articles that have crossed the Dow Jones News Wire or appeared in the *Wall Street Journal*; other national, regional, and local publications; or the *Japanese Business News*.

The statistics and forecasts section includes access to Dun and Bradstreet reports, earnings forecasts, extracts of filings with the Securities and Exchange Commission, and Standard and Poor's Earnings and Income Statements.

This information does not come cheaply, though. The price for Dow Jones News/Retrieval basic services runs more than \$25 per hour, even in non-prime time at 1200

baud, and prime time lasts longer than on most of the on-line services—from 6 A.M. Eastern time to 6 P.M. local time. In addition, there are yearly membership fees and surcharges for some searches.

In contrast to the financial specialization of Dow Jones News/Retrieval, Dialog Information Services has a variety of databases, each with its own cost of \$20-\$500 per hour. The service is fairly cumbersome to use, particularly for those who do not use it regularly.

Fortunately, Dialog Information Services' Knowledge Index provides low-cost access to many of the more popular and useful of these databases, with a greatly simplified search system. There is only one catch: You can use the system only Monday to Thursday from 6 P.M. to 5 A.M.; Friday from 6 P.M. to midnight; Saturday from 8 A.M. to midnight; and Sunday from 3 P.M. to Monday at 5 A.M. (all local times).

Knowledge Index consists of 75 different databases that are divided into the following 13 categories: agriculture and nutrition, bibliography, business information, chemistry, computers and electronics, directories and reference, education, law and government, medicine and drugs, news and current affairs, popular information, science and technology, and social sciences and humanities.

Knowledge Index information consists mainly of abstracts of articles in the Dialog database. Your search will refer you to the location of the articles rather than giving

the full text. The service can mail photocopies of many articles for a charge of \$7.50 per article plus \$.35 per page, and rush service is available for a \$7.50 surcharge.

NewsNet is an information service whose databases consist of more than 300 newsletters and publications divided into nearly 40 different industry groups such as aerospace, environment, finance and accounting, and management. The database includes such diverse titles as *Fusion Power Report*, *Latin American Debt Chronicle*, *Productivity Software*, *U.S. Rail News*, and *Computer Book Review*.

You search the full text of articles using keywords. Then you can read the headlines or the full text of articles that include your keyword or get a report showing the number of occurrences of your keyword in each newsletter search.

Other services that are available on NewsNet include TRW business-credit profiles, stock and commodity prices, the Official Airline Guide, and the Computer Listing Service (for used listing computer equipment).

The cost of NewsNet depends on whether you are searching or reviewing the results of a search. Search time costs \$1 per minute at 300 and 1200 baud and \$1.50 per minute at 2400 baud. Then, if you want to read the on-line articles, you pay \$1-\$4.20 per minute, depending on the newsletter. Many newsletters charge their print-version subscribers a lower on-line access fee.

Michael Fischer

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Telecommunications

tronic signals). Get one that is "Hayes-compatible" and handles speeds up to 2400 baud. You'll also need communications software, or a "terminal program." Initially, sign onto a host system at 300 baud; 1200 is more expensive. You'll spend most of your learning time working your way around the system, reading menus, typing, and getting familiar with on-line practices. Once you know your way around, you can switch to 1200 baud if 300 baud is too slow. Since charges depend on how long your computer is connected to the host, use the higher (faster) baud rate when you're transferring large text-based files or computer programs (called downloading) to

Be careful—
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habit-forming.

your computer, even if there's a surcharge.

You can do everything on-line, from researching Niagara Falls to falling in love—with lots of stops along the way. But be careful—not only is it informative and fun, but telecommunicating can quickly become habit-forming. Clever, judicious use of your time and resources will make you an active—and satisfied—participant in the Information Age. It can expand your horizons and knowledge, make you more efficient, and provide you with friends all over the world. Just don't let it leave you gasping when your credit-card statement arrives. (Trust me; I have the bills to prove it.) Decide what your limits are and stick to them. That way you won't find yourself wishing you had inside information on the state lottery every month. See you on-line! +

Peggy Herrington is executive editor of AMnews, an Amiga disk magazine, and a free-lance writer who specializes in telecommunications and music.

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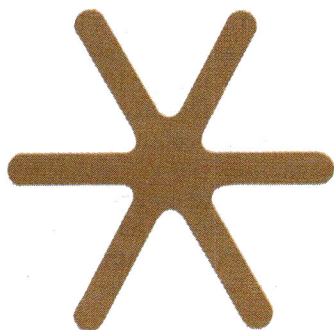
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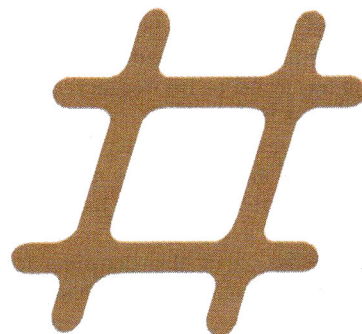


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*On-line shareware and
public-domain software*

THE PRICE IS RIGHT

In the early days of home computing, hobbyists tinkering in their basements believed that computers were tools to free humans from dull tasks and give individuals the power to explore personal creativity. If computers were the machines of social revolution, as many hackers believed, programs, like all computer information, should be distributed freely for the benefit of all.

Looking back with hindsight, it is easy to dismiss these notions as naive, yet the hacker spirit remains alive today. Many software authors release their efforts into the public domain, making thousands of useful programs, utilities, and templates available free to whoever wants them. Still others allow copying and distribution of their programs without restriction, trusting that satisfied users of this "shareware" will send them a small remuneration. Most of this generic software consists of programs without enough obvious commercial merit to be made available through traditional channels yet is too good to be neglected.

No-Name Software

Not long ago, virtually any programmers with decent products could go into business for themselves. Slap a label onto a floppy, drop the disk and photocopied documentation into a plastic bag, buy a small advertisement in a computer magazine, and wait for orders to fill the mailbox.

Today the commercial distribution of software is a sophisticated business that expects a sizable return on its investment, however. Yesterday's little guys can't compete with today's big-budget software industry. Without alternative means of distribution, such as shareware, many fine programs would never become available.

Honor System

Shareware gives you the chance to preview programs. If you are not

*Without
shareware, many fine
programs would never
become available.*

satisfied with the shareware offering after a trial period, typically ranging from ten days to one month, you are expected to discard your copy of the program or pass it along to someone else. If you continue using the program, you are morally, but not legally, obligated to send the shareware fee to the author. This voluntary registration often entitles you to updates and documentation.

The primary difference between shareware and public-domain software is that public-domain software belongs to the public, not the programmer, and can be duplicat-

ed and modified without concern for copyright laws.

Software Sources

Public-domain and shareware programs are available from a variety of sources. Most users' groups maintain large libraries of software that you can copy for the cost of a disk. To find the users' group nearest you, call Apple at (800) 538-9696, extension 500.

Another convenient place to get such software is on-line. The major information services (CompuServe, GENie, AppleLink, and The Source) have Apple II areas stocked with applications, utilities, and templates, as well as patches for commercial products. (For information on how to sign up for these services, see "Computing beyond Boundaries" in this issue.)

Several companies specialize in compiling public-domain software and making it available through mail-order. The best-known firm is the Public Domain Exchange, 2074C Walsh, Santa Clara, CA 95050; (800) 331-8125; (408) 496-0624. Names and addresses of similar companies appear in the "Public Domain" classified section of "A + Marketplace" at the back of the magazine.

The following pages show you six representative shareware and public-domain programs available through on-line sources.

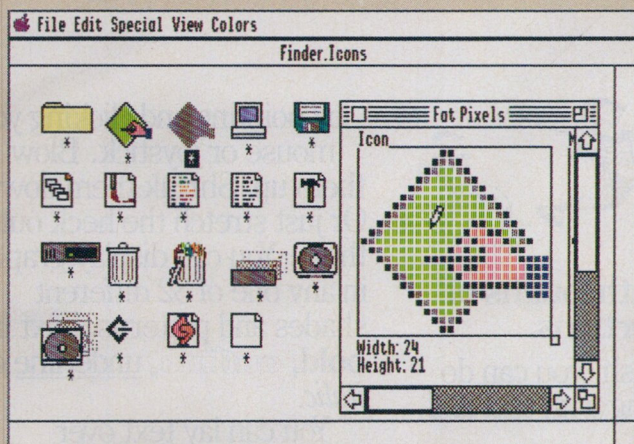
Owen W. Linzmayer is A + 's technical editor.



Wheel

The television game show that made Vanna White a household name can now inhabit your trusty Apple II, for free. That's right—a great version of Wheel of Fortune is available in the public domain.

You need three people to play, but if you're short a person or two, the computer will fill in. Few will need the built-in tutorial, since the game is faithful to its TV counterpart. Players try to solve a hidden puzzle by guessing the letters that fill in the blank spaces on a board. The player with control of the board can spin the wheel and guess a letter, buy a vowel, or attempt to solve the puzzle. If the guess is correct, an animated hostess saunters across the screen to reveal part of the puzzle. (*Apple IIe/c/GS/c+, 128K RAM, public domain*)



IconEd

Apple's Finder offers an intuitive method of managing files, folders, and volumes with graphic icons and mouse manipulation. With IconEd, users can personalize this environment by customizing existing icons or creating their own.

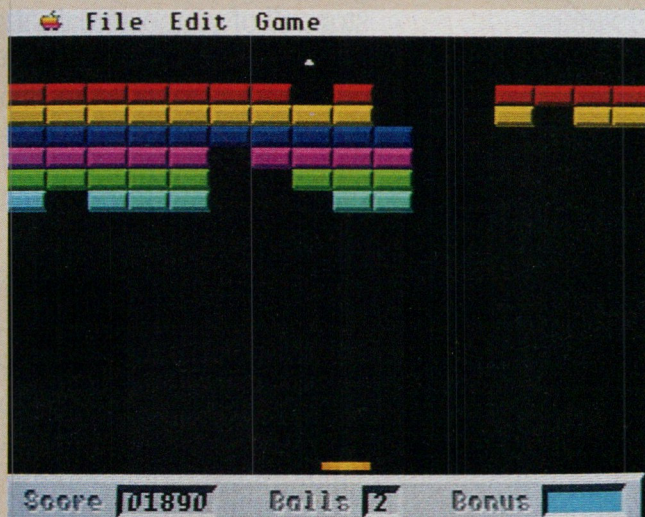
IconEd can load any ProDOS 16 or GS/OS icon file and allows editing of individual icons with a "fat pixels" display mode. You can color all subdirectory folders yellow or draw Oscar the Grouch in the Finder's Trash icon, for example. No more boring icons—with IconEd, IIGS owners can create desktops in their own image. (*Apple IIGS, 512K RAM, shareware, \$15*)



Viewer

Graphics are nice to look at, but why spend time booting a paint program just to show off your creations? With Viewer, picture display takes only seconds.

Written in Applesoft BASIC, Viewer loads and displays any standard- or double-hi-res graphics file. Double-hi-res pictures must be in the single-file format of such programs as Brøderbund's Dazzle Draw (not separate main and auxiliary files). Viewer requires individual filenames for each picture, but since it is in Applesoft, turning it into a slide-show program would take little effort. The Viewer program is well documented and is easy to modify to be a subroutine in other programs. (*Apple IIe/c/GS/c+, 128K RAM, public domain*)



Bounce-It!

Bounce-It! is a IIGS adaptation of Little BrickOut inspired by the coin-op arcade game BreakOut.

The object of Bounce-It! is to destroy blocks by hitting them with a bouncing ball. If all the blocks are cleared, the game advances to the next level (nine in all). As the game proceeds, the ball moves faster and the mouse-controlled paddle becomes smaller, making it more difficult to keep the ball in play. You can select paddle size and ball speed.

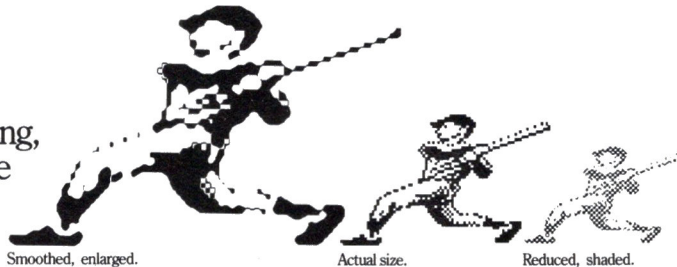
Programmer John R. Tierney uses the super-hi-res graphics screen of the IIGS to produce a colorful game environment. Bounce-It! also has charming sound effects that you can play in mono through the internal GS speaker or in stereo with an add-on stereo card. (*Apple IIGS, 512K RAM, shareware, download \$10, mail-order \$15*)

FINALLY, A DESK WITH A SIZEA!

"Okay," you're asking, "why would anyone introduce another Apple II desktop publisher?"

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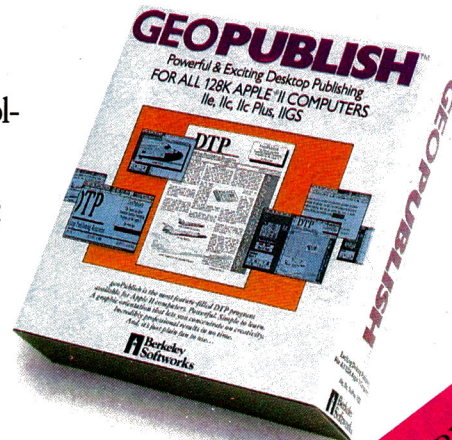
SYSTEM REQUIREMENTS: Apple IIc, IIc Plus, IIe (or compatibles; IIe need not be enhanced), IIgs, with 128K memory, double hi-res graphics capability, joystick or mouse, 5¼" or 3½" disk drive.

geoPublish is not copy protected. Package includes clip art, easy to use manual, both 5¼" and 3½" disks, authoritative quick reference cards.

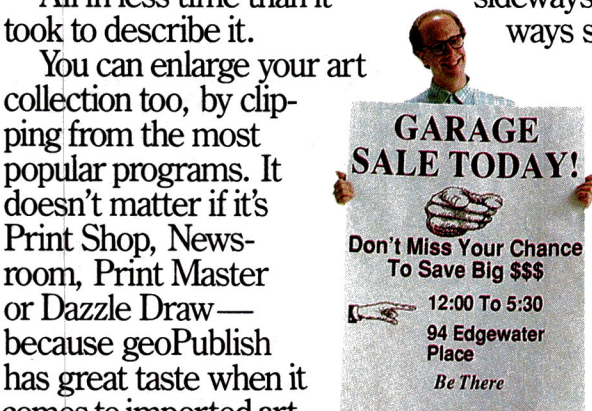
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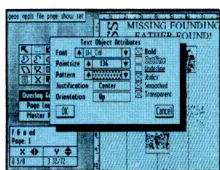
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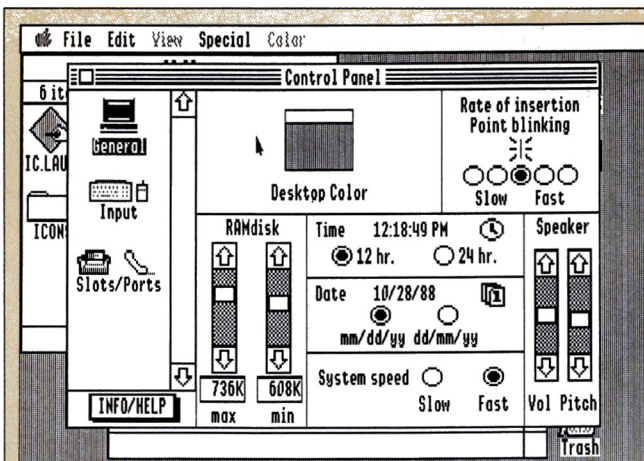


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find really big differences in even the tiniest places. For example, the zoom option gets you down to the smallest details. The smoothing option automatically irons out bumpy pixels. And then there's the feature most worth waiting for: a redraw function that doesn't make you wait an eternity for one change.

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Control Panel NDA

Tired of pressing Control- \bar{C} -Escape to access the Control Panel through the classic desk accessory (CDA) menu? With the public-domain Control Panel NDA (new desk accessory) by Paul Elseth, the three-finger salute is a thing of the past.

The Control Panel NDA is always available on the Apple menu in all programs that follow Apple's IIGs desktop-interface guidelines. When you invoke it, a dialog box opens that provides convenient access to system settings you usually view and alter in the Control Panel CDA. You can reconfigure slot assignments with check boxes, modify the size of the RAM disk with scroll bars, and set input-device repeat rates by pressing radio buttons. (Apple IIGs, 512K RAM, public domain)

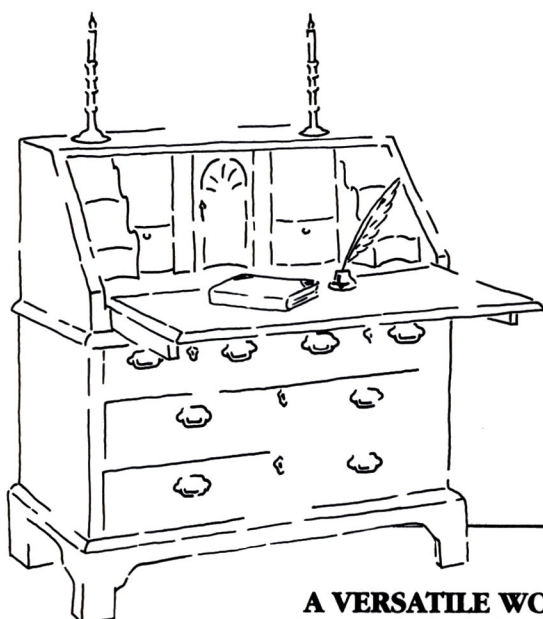


F1 Race

Backseat drivers beware: F1 Race gives everybody the chance to tear up the track in a Formula One race car. This super-hi-res game displays an overhead view of a scrolling raceway with slowpokes raining down from above and speed demons charging in from below. The object is to make time while avoiding accidents.

It takes practice to roar through the race without an accident. Defensive driving is rewarded, but if the fuel level gets too low, you must "crash" into fuel pumps that appear randomly on the road. F1 Race keeps track of the high score and can be played with or without sound effects and music. (Apple IIGs, 512K RAM, shareware, \$15)

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(pronounced: to write)



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*Options for nontraditional
undergraduate and graduate learning*

DIGITAL DIPLOMAS

Once you've entered the work force, returning to college to complete a degree or to take a course purely for personal enrichment is difficult. Attending formal classes on a campus means giving up work time. Reducing time on the job means less income and becomes a major obstacle to achieving your educational goals if you have a family to support. You may also have to move to meet residency requirements. At this point, most people would say "no way"—going back to school is too much trouble and expense.

With computer technology, many obstacles that have prevented adults from attending college in the traditional manner disappear. Over the last few years, several colleges and universities have designed external degree programs that allow students to use telecommunications to participate in special on-line courses. All you need is a personal commitment, a computer, a phone line, and the software and peripherals to dial into a host computer on the college campus.

The principal advantage of on-line courses is that they generally do not take place in real time and therefore can accommodate professional and personal schedules. Typically, classes have no set time, and most of the information delivery and student/faculty interaction occurs via computer conferencing at the students' convenience.

Degree programs are plentiful, at both the undergraduate and graduate levels. There is, however, a shortage of major subject options. Limited offerings in business ad-



ministration, general studies, media studies, information science, and social/behavioral science are the only degree tracks I could find. Here's a look at four providers of on-line universities.

Connected Education

Connected Education is a series of on-line courses that carry graduate and undergraduate credit from the New School for Social Research in New York. Most of the courses focus on technology and its effect on society; others provide more practical lessons in electronic publishing, journalism, and telecommunications. Most Connect Ed students are full-time professionals taking courses for personal and professional development.

Currently, a sequence of Connect Ed courses fulfills the requirements for a 39-credit degree program leading to an MA in Media Studies. This master's program is equivalent to the on-campus version at the New School for Social Research and earns students a New School degree. An undergraduate degree is the only prerequisite for the on-line master's program.

Connect Ed courses are two

Telecommunications

months long and cost \$316 per graduate credit and \$296 per undergraduate credit, which includes the cost of connect time. In addition to the per-credit costs, there

On-line courses can accommodate personal schedules.

are registration fees and local telephone charges for calling the network. Connect Ed welcomes non-matriculating students, who want to take classes but don't care about credits. These students must meet the same entry requirements as matriculating students and pay undergraduate credit fees.

American Open University

A part of the New York Institute of Technology, AOU offers bachelor's degrees in behavioral sciences, business administration, and general studies. The courses

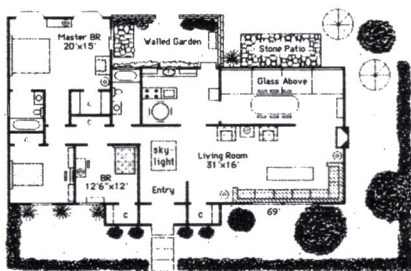
are open to matriculating and non-matriculating students, with registration fees varying according to registration status. On-line students at AOU can follow a suggested course sequence that leads to a degree or consult with a faculty adviser to design a study plan that more closely matches their particular interests.

The only entrance requirement for the American Open University undergraduate degree programs is a high school diploma. AOU gives credit for college-level courses, work and military experience relevant to the degree, and national proficiency exams. According to the program's director, Andrew Sass, most students receive half the required degree credits for nonacademic learning experiences.

On-line students do an equal amount of work and take the same exams as campus-based students. At exam time, AOU arranges for a local proctor to administer and supervise tests at a location near students' homes.

Students choosing to get their AOU degree on-line receive the same degree as students who com-

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Draw room plans, arrange furniture and explore color schemes. Includes hundreds of furniture pieces with different rotations. Create a top view and then use the automatic side view feature (now improved for Apple II version).

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**DIGITAL
VISION**

plete their course sequence on campus, which is important for students considering graduate study at another institution. If the school they want to attend recognizes the AOU/NYIT degree, it doesn't matter whether it was completed on campus or on-line. Students are, however, advised to make sure that the graduate school will accept the degree.

Base tuition for attending the American Open University is \$85 per credit hour. Additional course costs include computer-conferencing fees; evaluation fees; examination fees; course-change fees if you change your mind after enrolling; and finally, a graduation fee.

Nova

Nova University, in Fort Lauderdale, Florida, offers master's and doctor of arts degrees in computer-based training, information systems, and education. Education professionals can also pursue a "doctor of education in computer education" (Ed.D./CED) degree. Degrees from Nova University are somewhat controversial. Many universities do not recognize the doctor of arts degree, and the Nova

Telecommunications

DA and Ed.D./CED degree requirements are considerably less rigorous than campus-based doctoral programs.

Nova University course offer-

Information
delivery is at the
students' convenience.

ings reflect this institution's commitment to technology in education. Nova uses a sophisticated UNIX-based host environment for all on-line work. In addition to computer conferencing, students have access to statistical tools, relational databases, and simulation languages.

Students must meet standard admission requirements to enroll in a Nova degree program. They need a bachelor's degree for entry into the master's programs and a master's degree for the doctoral program.

Nova does not award academic credit for prior experiences such as military or work activities. Once enrolled, though, students get credits for work-related projects.

In each degree program, Nova students take core courses pertinent to their area of study. Then, instead of a master's thesis or doctoral dissertation, they complete practicums or major field projects. For these projects, students conduct an in-depth investigation of a topic or situation that bears on their profession.

Unlike the American Open University and Connected Education, Nova requires students to show up at the Nova campus twice a year for one-week institutes. With an annual tuition of \$4,500, Nova University is as expensive as some regular university graduate programs. And, in addition to the hefty tuition, Nova recommends that students budget approximately \$2,500 more per year for miscellaneous expenses, including books, Tymnet charges, and trips to the institutes.

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Compute has this to say:
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GraphicWriter, which is color and laser printer compatible, combines word processing, graphics and page layout into one complete, easy-to-use package. The program needs only 512K of memory, and is not copy protected. And, most importantly, it's available NOW.

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	GraphicWriter	Medley	Publish It!
IIGS-Specific	Yes	Yes	No (e, c, GS)
Memory Requirements	512K	1.25 MB	128K
Operating System (included)	GS/OS™	ProDOS 16	ProDOS 8
Uses Color Display	Yes (640 mode)	Yes (640 mode)	No
Suggested Retail Price	\$149.95	\$195.00	\$99.95
LaserWriter printing	Included	Included	\$39.95
Sample Templates	Included	Available	\$39.95
Clip Art	Included	Included	Included
Spelling Checker	Included	Included	Not Available
Total Cost	\$149.95	\$195.00	\$179.85

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enough to get an advanced degree. Many enjoy learning but can't stand the thought of being enrolled in one more degree program. With the exception of Nova, all these programs let you register for courses as a nonmatriculating student and reap the same intellectual benefits.

Another alternative is the self-proclaimed party school of on-line education, AppleLink University. AU resides in AppleLink—The Personal Edition, Apple Computer's new on-line service. It has one goal: to teach students how to use the power of their personal computer. To accomplish this objective, AU courses last five weeks and focus on programming and how to use specific software packages such as AppleWorks. They vary in the amount of on-line time required and cost \$20. AU doesn't award degrees, but successful completion of a course gets you a certificate.

Students of any age who need tutoring in math, English, computer science, general studies, or science can get it in the AppleLink Learning Center. Tutoring sessions take place nightly and on weekends,

and the only cost is for connect time. In addition to these sessions, AppleLink offers the 20-volume Grolier Academic American Encyclopedia.

The Learning Center is also the gateway to the University of Tomorrow, which includes courses in

On-line education opens opportunities for a significant population segment.

business writing, computer science, English, math, and general studies. These classes take place in real time and focus on academic subjects. Between course sessions, students can participate in personal-enrichment courses. Right now, for example, intersession course of-

ferings include seminars on atmospheric ecology and vocabulary development.

The Skeptic Speaks

I went to school the traditional way and admit to strong negative sentiments about on-line degrees. On the other hand, talking to people involved with on-line education programs opened my eyes to the need to offer a greater variety of educational opportunities to nontraditional students.

For instance, American Open University caters to a predominantly male and mobile student body that doesn't stay in one place long enough to finish a degree. For example, AOU students in the military spend time on aircraft carriers or in remote corners of the globe and can't possibly attend an on-campus degree program. Without the learning opportunity offered by AOU, these students would probably never get a college degree. Viewed from this perspective, on-line education performs a vital role in our educational-delivery system and opens educational opportunities for a significant population segment.

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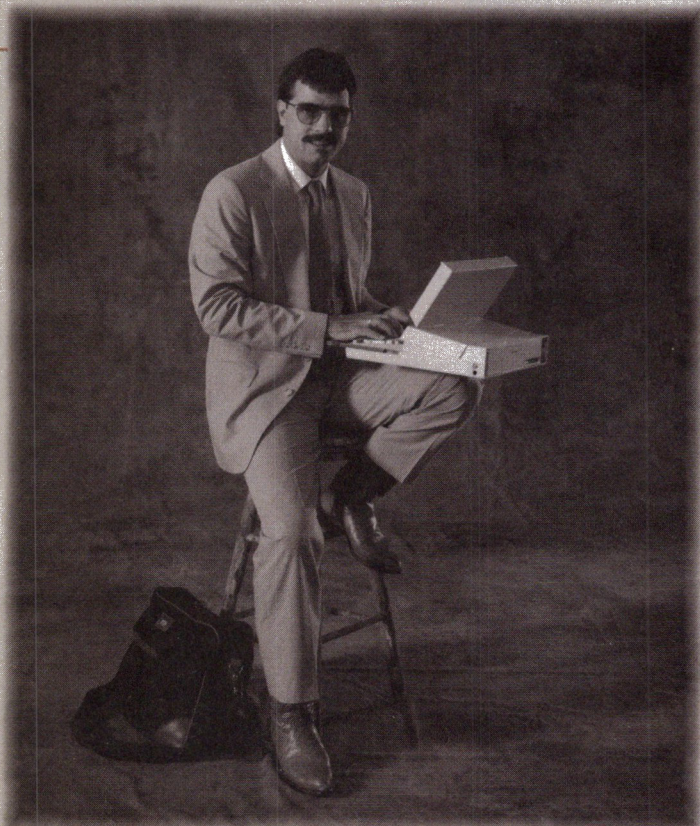
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Telecommunications

As for the educational quality of on-line courses, it is hard to judge from course catalogs and interviews. To get some perspective, I accepted an invitation from Paul Levinson, the director of Connected Education, to peek into a course he teaches, "Ethics in the Technological World."

What I found was an honest-to-goodness college-level course that resembled courses I took in graduate school at Stanford University. The physical bodies were missing, but the course requirements were more or less the same. The on-line lectures were shorter and more focused than in-person ones. Exchanges among students and professor were lively, interesting, and informed. I could find nothing to indicate that this class was qualitatively different than one of the on-campus variety.

So, my attitude has definitely shifted. What excites me about the electronic classroom is its potential to enhance the educational process. Without time constraints, students have more time to think about what they're studying. And because they have to write their com-

ments and arguments, they get valuable practice organizing and presenting their thoughts so that others will understand them.

Furthermore, telecommunications can furnish guest lecturers and provide unique opportunities

The people involved in on-line education see a bright future for it.

for students to interact with experts in their fields. And students don't have to spend time going to the bookstore or library. True to the medium, most on-line course materials are available on-line, eliminating searches for materials on reading lists.

On-line education is just in its infancy. The people involved,

however, see a bright future for it and are working hard to expand course offerings. **+**

Jennifer Brawer is A+'s education editor.

FURTHER INFORMATION

Connected Education, Inc.
92 Van Cortland Park South
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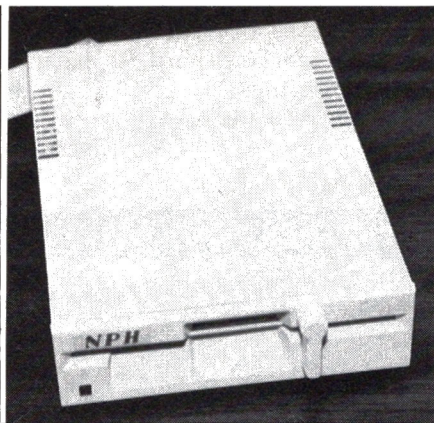
— Sally Ryce, Finance Director

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BAUD IT!

When I log onto an information service, my activities are absolutely predictable. Since my professional interests revolve around computers in education, I spend my on-line time and money in education forums or reference databases. One thing I've never even considered doing is shopping.

After I spent \$73,000 on the Education Dream Machine in the July '88 issue of *A+*, however, the rest of the editors decided that I had what it took to explore on-line shopping. So, with credit-card numbers and expiration dates in view, I blasted through CompuServe's Electronic Mall like a supermarket-sweep contestant.

Before we go shopping, you should know that electronic shopping is not a service unique to CompuServe. Today you can shop on most of the on-line services, but the range of product offerings and merchants may vary from one to the next.

So Let's Go, OK?

I hate to admit it, but I had a great time. Looking at the Mall's product index, I didn't just see categories such as computer accessories, hardware, and software, which is what I'd expected. I also saw jewelry, gourmet coffee, and gardening supplies! What a relief—I really was at a mall! Admittedly, there are no potted palms, crowds, or irate salespeople, but parking is never a problem, and electronic shoppers can buy cosmetics and check out new-car prices within minutes without having to go anywhere at all.

Convenience is only one of the



aspects of shopping with your computer. Another benefit that novice telecommunicators will appreciate is that teleshopping is incredibly easy. If you've ever purchased an item from a mail-order catalog, you have all the experience you need to shop till you drop with your personal computer.

Material Girl

The hardest decision I made during my foray into CompuServe's Electronic Mall was on where to start. I opted to go to the New Car

Telecommunications

Showroom and do some comparison shopping for a BMW 635 CSi and a Jaguar XJ-Vanden Plas (1988 models). I was interested to find out that both cars cost about \$47,000 (the BMW costs \$46,325, whereas the Jaguar will run you \$47,950); you cannot order an AM radio for either one; the Jag has more hip room in the rear seat; and if you buy the BMW, you will get

hit with a gas-guzzler tax of \$1,050.

Next stop: the professional shopette's mecca—*Bloomingdale's*! I expected to find designer clothes. Instead I found only cosmetics, housewares, luggage, and gifts. Since clothes weren't an option and I'm in my "late" thirties, I thought I'd find something useful in cosmetics. I was right—anti-aging complex, herbal body wraps, skin renewal therapy restorative night creme, and Firmant Des Rides (wrinkle cream) were all there to tempt me.

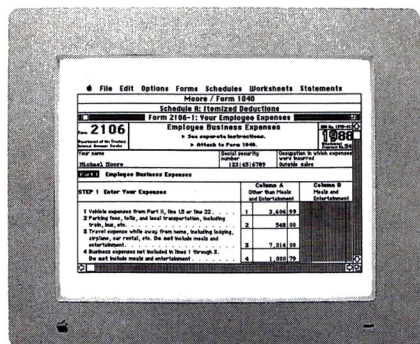
Thinking about wrinkles at Bloomingdale's was too depressing, so I headed to Brooks Brothers to find something special for the "Him" in my life. Much of BB's best-known merchandise, which is beautifully displayed in the company's print catalog, is also available on-line. You can buy Brooks Brothers shirts and chinos as well as some specialty items such as tartan-plaid boxer shorts, the Silent Butler, and the Executive Jigsaw Puzzle.

The perfect place to buy presents for your doggie is at the New York Kennel Club. Here you can register your dog; buy dog food, grooming aids, and pet beds; have all your pertinent pet-health and behavior questions answered by an expert named Rover; and go through an extensive Q&A to help determine which is the best puppy for you. Another pet-related service for people who *really* love their pet and can't leave home without it is the Traveling With Your Pet database, a list of hotels and motels around the country that allow pets in the rooms.

By far the most entertaining stop on my shopping spree was Hammacher Schlemmer. Need a heated birdbath for \$62.75? Considering a two-way indoor putting green and a solar-powered ventilated golf cap? Then this is the place for you.

I spent my shopping time looking at everything but computer-related products, but for those of you on the lookout for a good deal, CompuServe's Electronic Mall includes sources for all kinds of hardware and software products. While you're shopping, don't forget to stop in at the major book publishers and book retailers. You'll find many publications that should appeal to computer hobbyists as well as computer professionals.

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Telecommunications

Is It Worth It?

I spent about an hour cruising the Mall, and it's time to figure out whether it was worth the cost of the connect time. My on-line costs came to about \$15, since I shopped during prime-time service hours and therefore paid premium rates. Considering the cost of a flight to New York to hit Bloomingdale's, this is definitely the way to go.

On the other hand, I seem to receive print catalogs from every store in the universe, and being able to see what you're buying has

You can't beat on-line shopping for ordering books, CDs, and computer paraphernalia.

definite advantages over the description and price you get at the on-line stores. Print catalogs don't charge you for browsing, either. Fortunately, many merchants in the Electronic Mall give you the option to order their print catalogs free of charge, which is the way I chose to go before making a purchase. And a way to reduce your on-line shopping charges is to take advantage of free shopping days, listed in the Electronic Mall News. On these days, you don't pay CompuServe connect charges during the time you spend browsing or buying from selected merchants.

In the final analysis, I think on-line shopping is for computer purists who need to use their PC for absolutely everything, or for shoppers who know exactly what they want. If you buy only Brooks Brothers shirts or give lots of gift baskets from Crabtree & Evelyn, for example, electronic shopping is as convenient as ordering over the telephone. And, as I learned last Christmas, you can't beat it for ordering books, CDs, computer paraphernalia, prepackaged gourmet food items, and flowering bulbs. +

Jennifer Brawer is A+'s education editor and professional shopper.

#1

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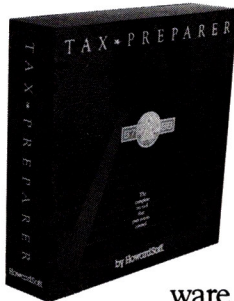
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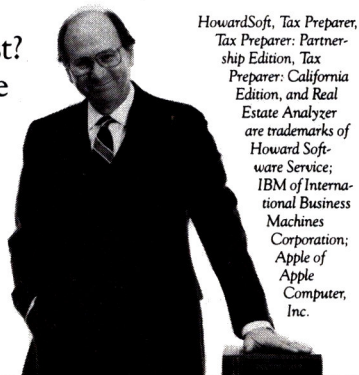
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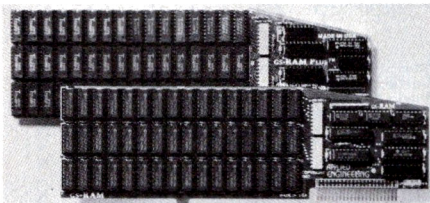
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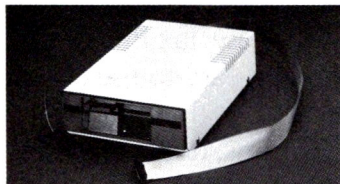
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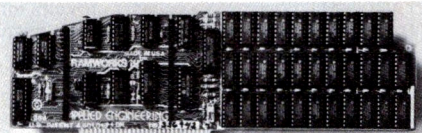
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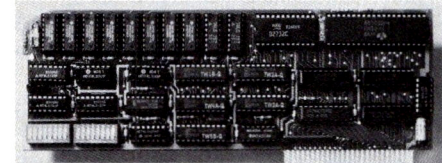
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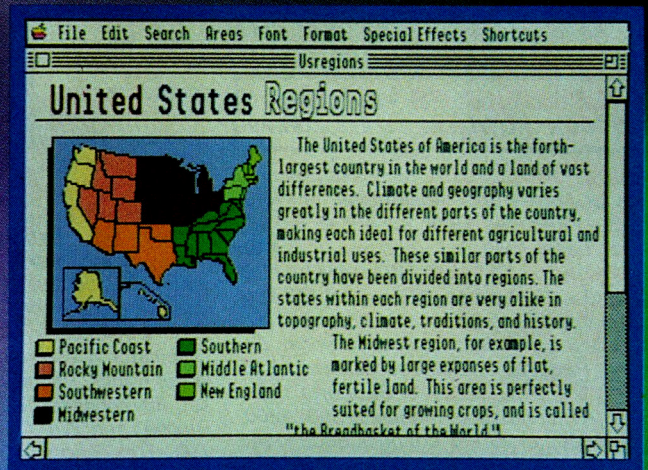
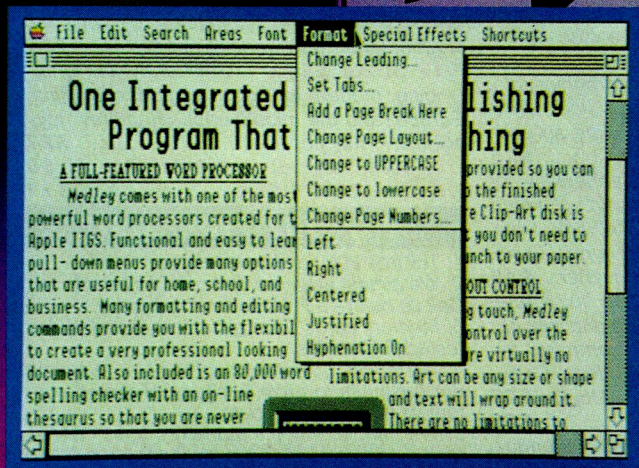
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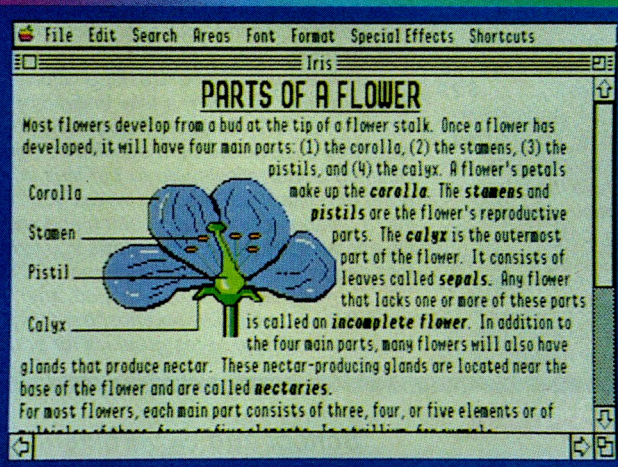
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Figures 1-3: Medley's formatting commands let you accurately place your text and graphics on a page. Using the program's Change Page Layout menu, you can wrap your text around standard and irregularly shaped graphics.



*Orchestrating
words,
graphics,
and pages*

Medley

Apple II owners interested in desktop publishing, or DTP, are probably thinking of combining text and graphics in colorful club newspapers, school reports, small-business presentations, and the like. Most of the handful of DTP programs for the Apple II family work on a broad range of II models and so don't cater to the special powers of the IIGS. As *A+* reported back in September 1988, GraphicWriter from DataPak Software was once the only IIGS-specific DTP package. Now there's another choice: Medley from Milliken Publishing.

DTP 1-2-3?

Aldus' PageMaker for the Macintosh and PC is mainly a "page-layout" tool. It does have some rudimentary word-processing features for adding and editing text, as well as a few art features for putting lines and boxes onto a page. But most of PageMaker's command repertoire concerns the precise placement, spacing, and appearance on a page of text and art imported from other programs.

Medley doesn't follow that example. Instead, it includes a complete word-processing program, a fairly complete paint program, and the heart of a drawing program, all in the same package. This package is more akin to integrated software

such as AppleWorks than it is to traditional page-layout stuff. Tying together the three parts of Medley are special formatting commands that allow you to accurately place on a page the text, drawn objects, and painted pictures you have created within the program (see figures 1-3). Medley can also read AppleWorks text files directly and can import graphic art from other Apple II programs.

To run this big bundle, Medley demands a big IIGS: at least 1.25Mb of RAM. If you want to avoid twiddling your thumbs while formatting pages, you'll probably want even more RAM—as much as 2Mb—so you can load the entire program into a RAM disk. Then there's a color printer to consider, pretty necessary if you're going to take real IIGS advantage of this software to design and print in color. I used a single 3.5-inch disk drive and didn't find it too much of a problem, but having a pair of drives, or even a hard-disk drive, would be nice for keeping the spelling dictionary and thesaurus handy, especially if you didn't have a big RAM disk working on your side.

The central part of Medley is the word processor. Here you'll find

most of the features you might look for in an independent word-processing program, tucked into standard pull-down menus: cut/copy/paste, find and replace with whole-word and case options, text style, size, font selection, and so on. Font selection isn't as easy to get to as I'd like. A single menu command opens up a dialog box—I like to see it all in menus—but it does the job.

A spelling checker and a thesaurus are among the sophisticated editing features. The thesaurus is more generous than most computer thesauri in that it includes definitions, showing you synonyms for each meaning and the parts of speech the word can take. Other special editing features include a Shortcuts menu (for moving to a particular page or selecting a sentence or paragraph without leaving the keyboard) and menu commands for moving from one open document window to another. An Undo command lets you step back from too-hasty commands and mistaken efforts. There is no header or footer command.

The word processor shows its page-layout features when you look at the Format and Special Effects menus. Here you can align text to the left, right, or center, or justify it across a page or column. You can also set tabs, which isn't too impressive until you see the variety available: left, right, center, or decimal, each with a choice of four kinds of leaders (blanks, dots, dashes, or a solid line). Medley has horizontal rulers you can hide or show to see what you're doing with text, graphics, and tabs and also offers you the option of seeing special symbols on the screen for spaces, tabs, and paragraph breaks. The program also has a gutter margin setting buried in the File menu and a versatile page-numbering command.

Then come the big guns: page-layout abilities that don't seriously challenge professional DTP software but are a cut above what you find in standard word-processing programs. Medley's Hyphenation command can automatically hyphenate an entire document or selected section or ask you about each word to be hyphenated, using information from the same dictionary that feeds the spelling check-

Medley is more akin to integrated software such as AppleWorks than to traditional page-layout stuff.

er. The program also gives you the option of entering "soft" hyphens to break words. Unlike the hard hyphens that always appear, these don't come into play unless the word is at the end of a line. Another DTP format feature is the "leading" command, which lets you specify, in points—a standard publishing measurement—the space between lines of text and between paragraphs.

Medley automatically "kerns" letters (moving letters closer together when their shape allows—such as an uppercase T and a lowercase i), but it doesn't let you select your own kerning. I don't know an Apple II program that does offer kerning control, but professional desktop-publishing packages on other computers do.

Word Wrap

The heart of Medley's DTP abilities is in the Change Page Layout menu command. It lets you choose the kind of word wrap you want to use and whether "global" art—graphics that you've specified to appear on all pages of a manuscript—actually appears on any given page.

The word-wrap choices are vital to publishing because they determine whether each line of the text on a page wraps along beside any graphics or continues on the other side of the graphics to the edge of the page. That's how you "flow"

your text into columns and around graphics. What Medley doesn't have is an easy way to continue text from one page or area on a page to an unattached page or area. You know how articles in newspapers and magazines are often interrupted by lines such as "continued on back page" or "see page 108"? Medley doesn't let you position and link boxes of text the way many DTP programs do but instead just flows the text on a page around any graphics on that page. So to continue articles that begin on the front page on later pages, you must use the cut-and-paste option—a major difference between Medley and standard DTP.

Drawing Precision

Putting text and graphics together on a page is central to DTP. Medley offers both drawing commands and an integrated paint program for creating or modifying graphics. It also lets you import graphic images from files you've created with other Apple II paint programs. Text automatically wraps around this art according to the principles you've laid down in the Page Layout dialog box. For example, you could take a page full of text and draw a tall, skinny rectangle down the center, right on top of the text. The text on that page would then run down the left side of the rectangle and leap back to the top of the right side of the page and continue on from there to the bottom of the page. Or, if you chose Wrap Across, each line of text would leap from the left edge of the rectangle to its right edge, continue to the right margin on the page, and then continue back on the next line down at the left margin. In either case, the text would not appear within the object.

The drawing commands, on a single menu, let you draw rectangles, rounded rectangles, ovals, and polygons (see figure 4). You can group (for editing as a unit), move, and

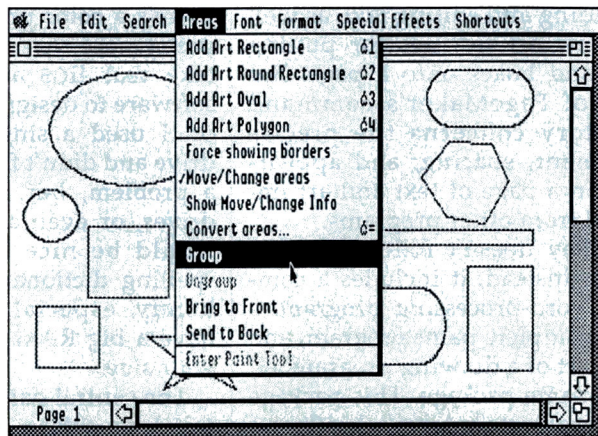


Figure 4: Medley's menu of drawing commands lets you draw, group, move, and resize a variety of geometrical shapes.



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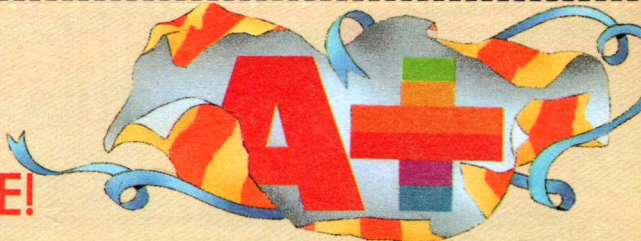
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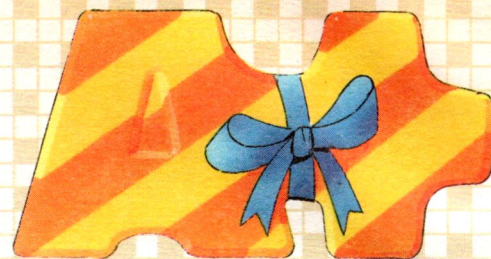
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resize these shapes. A special window shows numeric values—to the sixteenth of an inch—for positioning and sizing a selected object if the rulers aren't precise enough for you. Another set of drawing commands lets you convert one type of object to another (such as rectangle to oval), turn the object's borders on or off, and dictate whether it will show on all pages. That last option is the only route to creating "guides"—lines to contain text and put it into columns throughout a document. I would prefer explicit guideline commands, especially for making multicolumn documents.

A Bit More Painting

Medley has commands for making its own art or for importing pictures from disk files. Its clip-art disk is stuffed with hundreds of images. It also includes a command for exporting art you've created with the drawing or painting commands. Painting commands? That is right—one of the choices in the Drawing menu is actually a paint program.

The paint program takes a bit of time to load, along with its own menus and icon command palette. You can use it to draw within any "areas" you've created with the drawing commands (rectangles, ovals, whatever). It has colors and patterns to choose from; filled and empty rectangles, ovals, polygons, and so on; and the standard paint paraphernalia: paint can, airbrush, pencil, eraser, selection lasso, text tool, and magnifier. If you've used any Mac or IIGS paint program, you'll be able to navigate through this one without the manual. There are also commands for editing patterns, changing colors, flipping or shrinking selected areas, and so on. You won't find color cycling, palette editing, perspective, and other sophisticated paint commands in this program, though. When you are done editing within an area, you can print or return to the word processor.

You can move, resize, and crop art that's imported from disk files. The three options for selecting the color palette for this art aren't well explained—you have to try one and then another to see which makes the best on-screen display. An option in both the drawing and painting programs lets you switch to gray-scale images on the screen.

*If you do not
already own a
IIGS word-
processing program,
Medley might be
the best DTP choice
for you.*

Many scanned pictures look better in gray scale, so this option is a nice feature of the program.

Printing

When you're finished editing, drawing, painting, and laying out, you can see the results of your key tapping and mouse clicking by using the Show Page command to see the current page in detail on the screen, or you can just print the thing.

I used an ImageWriter LQ to see the color of my graphics. It's too bad you can't edit the text in color too. If you go with a LaserWriter printer, you'll miss the color, but you'll be able to work with a wider variety of fonts and enlargement and reduction options. Medley can use only the fonts in the LaserWriter, however; it can't download new fonts. And the clip art that comes with the package is bit-mapped at ImageWriter resolution, so it looks jagged when printed on a LaserWriter. There is no option for printing color separations—a necessity if you're thinking of professional printing.

Waiting a Lot

The Medley manual is clear, and the program's on-line help command lets you call up explanations for each menu command.

The one question I really wanted an answer to, however, was "Why is this program so slow?" Medley is a sloth at displaying even simple text. I tried the Show Markers option that puts dots on the page for each space between words and arrows for tabs. Medley needed 5 seconds just to display that change on a mere 13 lines. It is just as slow at times when displaying text without markers—you can watch the lines appear as if you were communicating at 1200 baud with a modem, which is fine for telecommunications but not for a word processor—and even dialog boxes

can take a while to appear.

I also noticed several times when the screen did not properly redraw after I moved a graphic: Pieces of text remained in view even when they should have been erased and disappeared only after I'd scrolled away and then come back. [At press time, Milliken was readying version 1.1 of Medley for release. The company claims the new version will redraw the screen three times faster than does version 1.0.—Editors]

Laying Out Conclusions

Medley is really a word-processing program with an attached paint program, a few drawing commands, and more precise control of margins and word wrap than you'll find in any word-processing program. Its most serious flaws are its inability to link text between separate pages and boxes, its lack of guideline commands, and its distressing lack of speed.

The big pluses are a great thesaurus, its ability to wrap words across graphics and around oddly shaped graphics, a global art command, a good manual, and tight integration of drawing and word-processing commands. The competing GraphicWriter offers a color separation facility; Medley does not. But then, Medley has lots more text-editing features than does GraphicWriter.

If you don't already own a IIGS word-processing program, Medley might be the best DTP choice for you. Otherwise, it is still a solid competitor, if you don't expect professional results and aren't tense when waiting for slow execution.+

Phillip Robinson is a writer and editor for Virtual Information. He is coauthor of Desktop Publishing: IBM Edition from Dow Jones/Irwin Books.

V I T A L S T A T I S T I C S

MEDLEY (VERSION 1.0)

A desktop-publishing program that adds drawing and painting commands to a complete word-processing foundation and lets you "flow" text around color graphics

Apple IIGS, 1.25Mb RAM, one 3.5-inch disk drive, ProDOS, not copy-protected, hard-disk drive recommended

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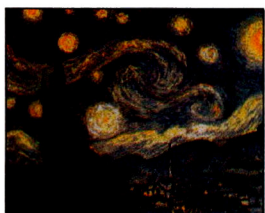
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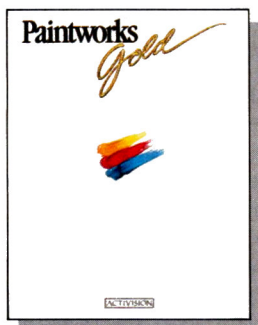
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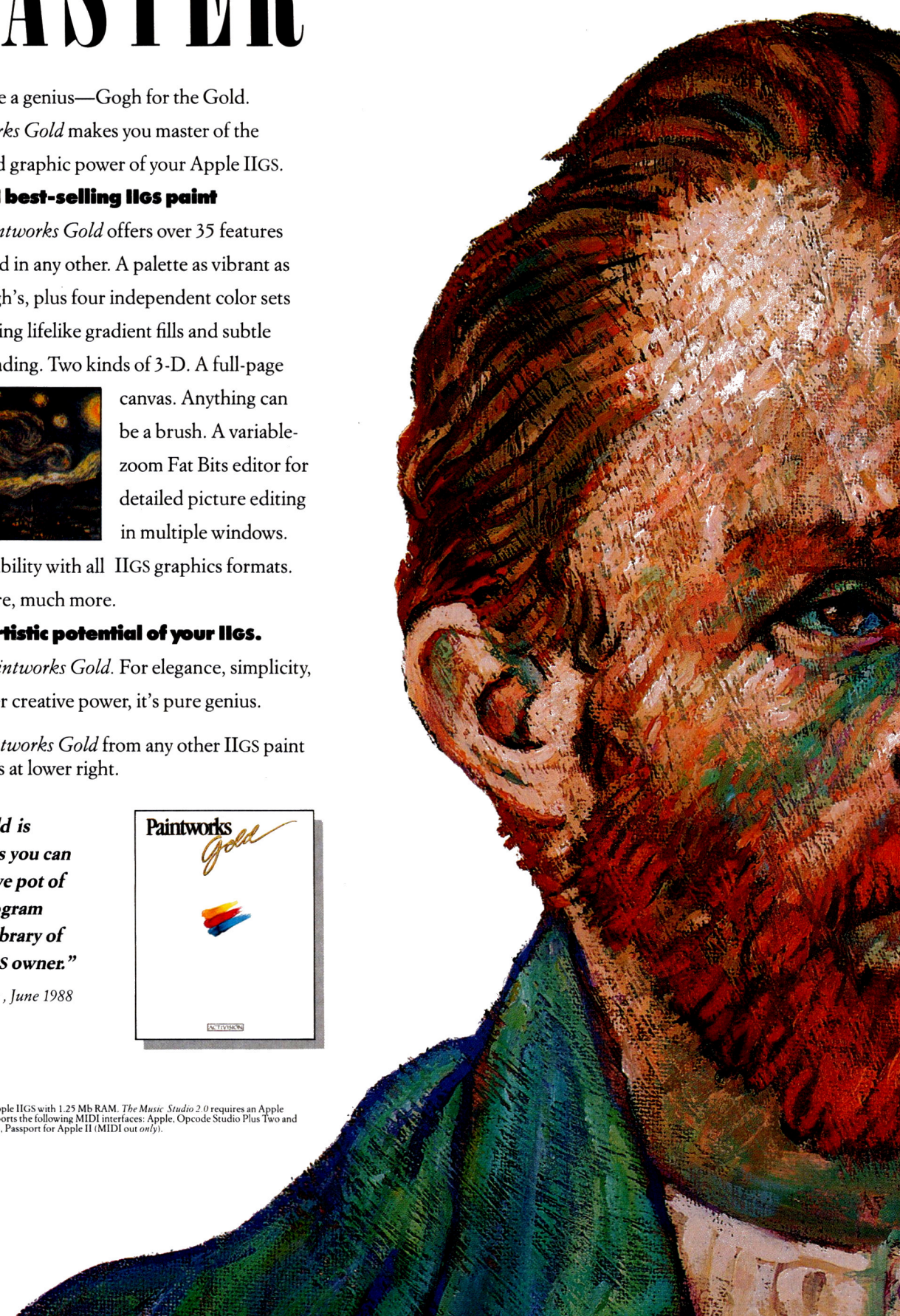
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A+, June 1988



Paintworks Gold requires an Apple IIGS with 1.25 Mb RAM. *The Music Studio 2.0* requires an Apple IIGS with 512K RAM, and supports the following MIDI interfaces: Apple, Opcode Studio Plus Two and The Professional Plus, Passport, Passport for Apple II (MIDI out only).



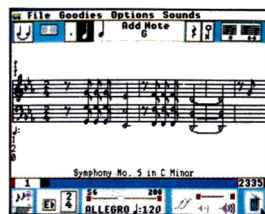
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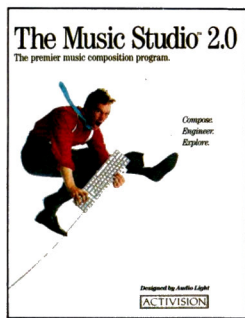


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MAXIMUM MIDI

Serious music-making comes to the IIGS

Although the Apple IIGS has more built-in music potential than any other personal computer, software that fully uses the IIGS's Ensoniq sound chip and MIDI (Musical Instrument Digital Interface) input/output has been slow to appear. So IIGS owners who are serious about getting the IIGS to do wonderful audible tricks or want to hook up those megabuck (or minibuck) MIDI synthesizers have just had to be patient—silently patient.

Now the IIGS music connection crescendos with the release of two music products that represent the most substantial effort yet to bring MIDI to the IIGS.

Digital Tape Recorder

Don't let the bogus Norman Rockwell package art and the sing-along sales pitch fool you. Diversi-Tune from Diversified Software Research is a serious and potent MIDI recorder.

In one of his several professional lives, programmer Bill (Diversi-Copy/Cache/Key) Basham has spent time behind a recording-studio mixing console. Little surprise,

then, that Diversi-Tune is inspired by the relationship between man, music, and tape recorders. In fact, Diversi-Tune essentially is a multi-track tape recorder without the microphones, mixers, and tape reels. Anyone who has ever manned the transport at a recording session—mixing sound on sound or sound with sound, or overdubbing mistakes—will feel at home.

Connect a MIDI keyboard to the IIGS (using either Apple's external MIDI box or an internal MIDI card), set Diversi-Tune to record, and the "tape" is rolling. The software records the notes, rhythm, and—if your keyboard allows it—volume (velocity) of the music you're playing.

Unlike conventional MIDI recording software, Diversi-Tune does not metronomically dictate tempo. Like a tape recorder, Diversi-Tune records whatever you play, irregular tempi and all. It makes Diversi-Tune music files sound more human than those on tempo-rigid MIDI recorders. It can also make finding specific places in the score difficult, though, since

the program provides no reference points related to measures, beats, or notes. An imitation tape counter at the bottom of the screen helps, but it's too imprecise.

Thus, editing scores or fixing mistakes becomes a matter of pure ear power. Listen for the spots you want to change, make note of the counter value, step through the score one note at a time to pinpoint the spot, and then use an overdub feature to re-record the offending passage. In the sound-on-sound tape-recorder tradition, you can also add more notes to existing tracks.

Many users will make little use of the program's recording abilities. They will just employ Diversi-Tune to play back prerecorded data disks from DSR. Current disks range from folk songs and Gay Nineties tunes to an agreeable jazz "album" recorded live by pianist Nathen Page during Boston AppleFest 1988.

The program also boasts a unique sing-along feature. The lyrics of a song appear on the screen



Give my regards to old Broadway
and say that I'll be there ere long.

Give My Regards To Broadway.
Remember me to Herald Square;
Tell all the gang,
at Forty Second Street
That I will soon be there.
Whisper of how I'm yearning

Figure 1: Diversi-Tune's sing-along feature gives you a bouncing ball that ticks off the lyrics of a song. You can add words and bouncing ball to your own song files.

while a bouncing ball ticks off the text in accurate rhythm (see figure 1). The sing-along song disks from DSR include this feature, and you can add words and bouncing ball to your own song files.

Diversi-Tune's interface truly goes it alone. Basham has created a unique user interface that does not follow Apple's guidelines, which means that this program (written in ProDOS 8, by the way) doesn't look like the mouse/menu products common to the IIGS. In general, operation is efficient, although some functions, such as overdubbing, require more than a few keystrokes to accomplish. Basham suggests having a second person present to handle the recording controls.

The sacrifice of Apple's Human Interface standards boosts Diversi-Tune in the music department. By losing the visual baggage of Apple's sacred interface, Basham has brought off some surprising programming tricks.

Programmers inside and outside Apple doubt that it is possible to use the IIGS internal voices and MIDI at the same time. Diversi-Tune does it, though, turning your computer into a musical instrument. With four piano sounds and a percussion set available on the program disk, whatever you play on the attached MIDI keyboard is relayed directly to the IIGS's audio innards. Instant piano. And when you connect the computer to a stereo card and external speakers, the

audio quality is outstanding.

Although the MIDI specifications allow only 16 channels of data transmission, Diversi-Tune effectively doubles the number by distinguishing between data sent to the printer and to the modem ports. A configuration screen permits users to route Diversi-Tune's 32 tracks to any combination of printer and modem ports as well as the 15 IIGS internal voices. With two MIDI interfaces, Diversi-Tune provides a quantum leap in MIDI flexibility—more power than most Diversi-Tune users will ever need.

Diversi-Tune can be a serious tool for creative musicians, but serious musicians are the ones who will spot its limitations along with its genius. The lack of visual indicators in music editing was acceptable in the days of tape-only music

making, but our MIDI world has grown fond of visible editing devices. Moving back and forth through Diversi-Tune's surrogate tape is just not as convenient as clicking on the right spot in a visual display of measures and notes.

Furthermore, since Diversi-Tune currently does not use any of the common MIDI file standards, music you create with Diversi-Tune is usable only with Diversi-Tune.

Still, Diversi-Tune is a remarkable product, one that brings together playback audio quality for musical couch potatoes, turns the IIGS into a good-quality instrument for hands-on musicians, and provides a flexible and powerful MIDI recorder. It's truly an all-in-one music studio.

Junior Master

Like Diversi-Tune, Passport Design's Master Tracks Jr. (MT Jr.) uses the image of a tape-recorder transport for creating music files from MIDI keyboard input. In other respects, however, MT Jr. provides a more conventional and familiar environment for MIDI re-

*Diversi-Tune is inspired
by the relationship
between man, music,
and tape recorders.*

cording and sequencing. Although MT Jr. costs nearly twice as much as Diversi-Tune, it's priced in the low range of professionally oriented MIDI sequencers.

MT Jr. operates with a MIDI keyboard connected to an internal MIDI card or an external MIDI box connected to the modem or printer port. You can synchronize the IIGS to the internal clock or to an external source such as a drum box.

On-screen tools include a metronome, a slider to set tempo, bar/beat and elapsed-time displays to locate exact points in a score, and the "tape transport" controls.

Other MT Jr. features common among MIDI sequencers include a Punch In/Out button to define a section of a score for re-recording (great for correcting your mistakes), a Key button that begins the recorder on the first MIDI keystroke, and a MIDI Thru selector to pass incoming data to the MIDI

VITAL STATISTICS

DIVERSI-TUNE (VERSION 1.0)

Introductory MIDI software that emulates a multitrack tape recorder, giving up an Apple-standard user interface for the ability to use the IIGS's internal voices and MIDI at the same time

Apple IIGS, 512K RAM, one 3.5-inch disk drive, ProDOS, external speakers and MIDI interface recommended, not copy-protected

PRICE: program disk, \$75; 5¼-inch demo disk, \$5; data disks, \$19.95 each

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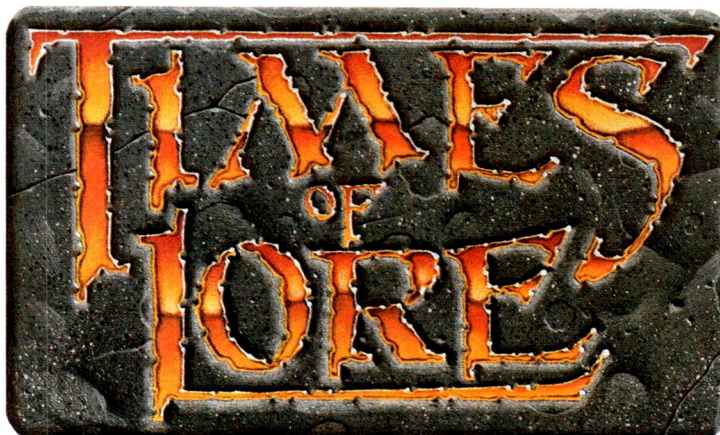
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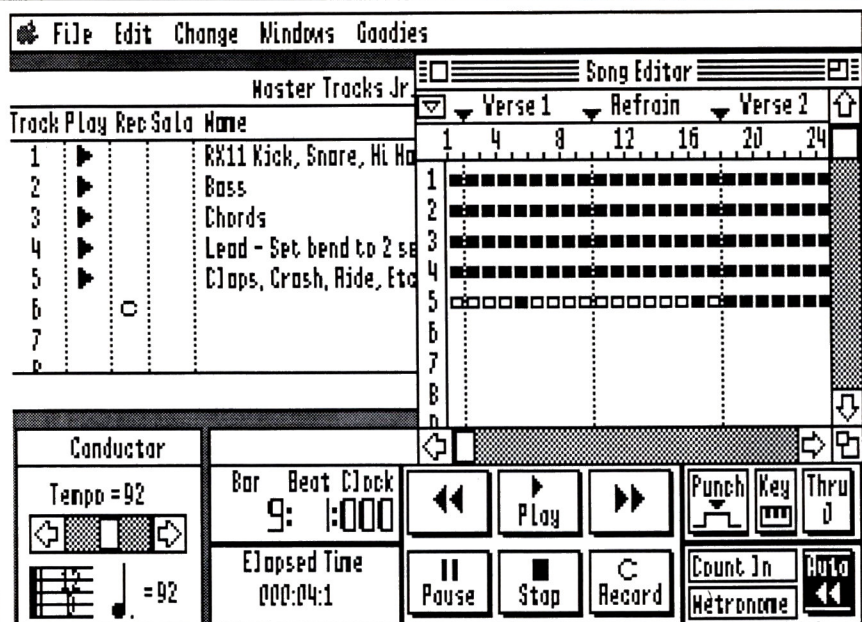


Figure 2: The status of MT Jr.'s 64 tracks appears in the sequencer window (left). The song-editor window (right) uses filled-in blocks as a visual representation of tracks.

Out port on the channel you choose. In short, MT Jr. is a medium-level, highly capable MIDI recorder and sequencer, clearly the place to start if you're a would-be MIDI maven.

The status of MT Jr.'s 64 tracks appears in the sequencer window (see figure 2). A one-line entry shows track number; play status (play, mute or solo); record status (on or off); the name you have assigned to the track; MIDI channel; program number; and whether the track is slated to play once and stop or whether it repeats (loops) continuously throughout the score.

Looping is particularly convenient for composing. Record four measures of a percussion track, for example, and have them loop indefinitely, maintaining the tempo while you play the rest of the composition. Then rewrite the percussion track to respond to specific melodic and harmonic events. During recording, MT Jr. can jump to the next track immediately after you've completed the previous track. This instant access is a time and inspiration saver during hot and heavy creative sessions.

The song-editor window (see figure 2) uses filled-in blocks as a visual representation of tracks and provides cut-and-paste editing. Do you think the third measure of track 4 would sound better in the eighth measure of track 32? Highlight it with the mouse, cut it, and paste it into the desired location.

Or if you would prefer to have the measure in both places, copy it to the new spot. Editing a single track or several consecutive tracks in Master Tracks Jr. is as easy as manipulating text in a word-processing program.

Those who are experienced in the ways of MIDI will find many other features that make musical life worth living: quantization (rhythm smoothing) with a variable percentage of correction; recording of all MIDI data including pitch bend, controller info, program change, polyphonic aftertouch, velocity, and modulation; a filter to ignore any of the above MIDI data during recording; and the ability to change the meter and tempo of any or all tracks.

Finally, MT Jr. can export MIDI files in the OpCode Systems format, which means you can trade music files with colleagues who use other OpCode-compatible se-

quencers. If you need to see or print musical notation of your creations, you can use the Pyware MIDI Translator to export your MIDI files to Pyware Music Writer.

Operation of MT Jr. is smooth and surprisingly fast. All IIGS users expect some delays during screen redrawing, however, and they'll find them here, too. The editing and quantizing features are brisk and easy to use, although I found the results of quantizing somewhat eccentric at times. Fortunately, an Undo option lets you try several different quantizing options to get the results you need.

MT Jr. does not access the internal voices of the IIGS. The trade-off is that it does follow the Apple-approved interface guidelines, so you'll find a comfortable and familiar mouse/menu means of controlling the program.

Master Tracks Jr. is the MIDI program IIGS music fans have been expecting. It doesn't have all the fea-

*Master Tracks Jr.
is the MIDI program
IIGS music fans
have been expecting.*

tures of a professional-level MIDI sequencer. You can't directly edit MIDI data values, for instance, because the program doesn't display them. Yet, the program is capable of controlling even an elaborate array of MIDI synthesizers with muscle and flexibility.

MIDI is here, at last, on the IIGS. With Diversi-Tune and Master Tracks Jr., the IIGS has made the first significant strides toward becoming the music powerhouse it can be. **+**

Bob Lindstrom, editor of A+ magazine, is composer of the musical scores for Cinemaware's *Rocket Ranger*, TV Sports Football, and *Lords of the Rising Sun*. He has served as orchestra conductor for the Portland (Oregon) Opera, New Orleans Opera, Portland Civic Theater, and Gloriana Productions and is the recipient of fellowships in music criticism from the Music Critics Association, the Ford Foundation, and the National Endowment for the Arts.

VITAL STATISTICS

MASTER TRACKS JR.

A medium-level, highly capable MIDI recorder and sequencer that uses the Apple-standard user interface but cannot access the IIGS's internal voices

Apple IIGS (ROM version 01), 768K RAM, one 3.5-inch disk drive, GS/OS, MIDI interface required, not copy-protected
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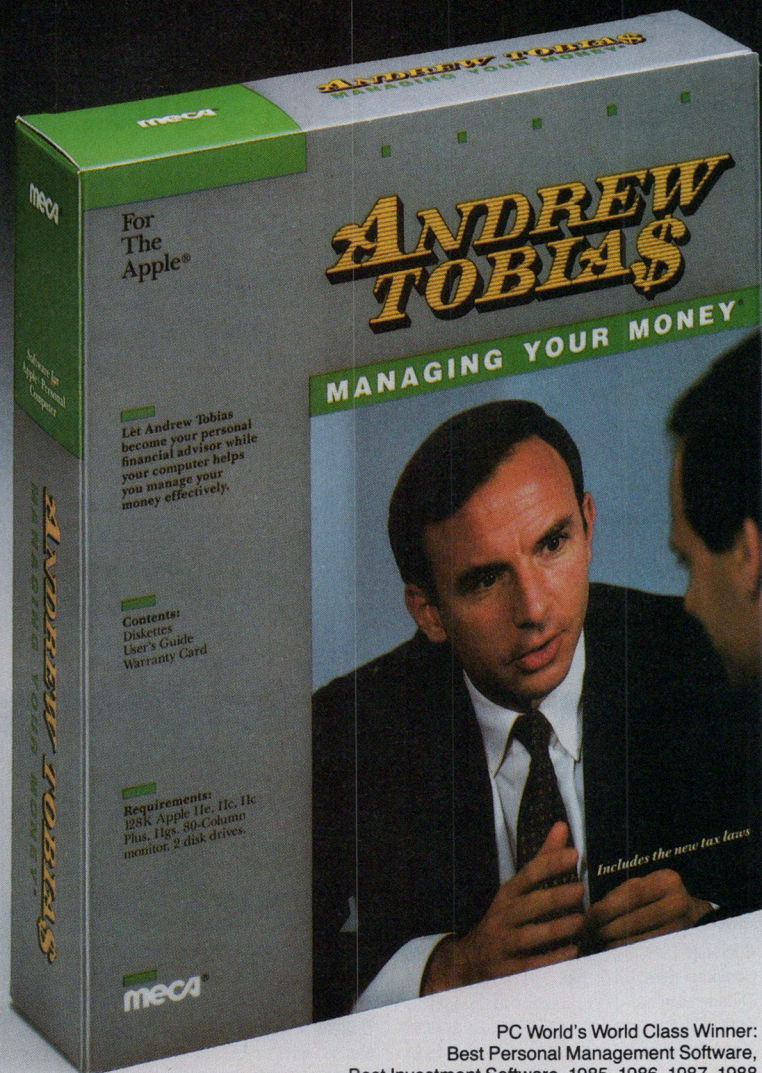
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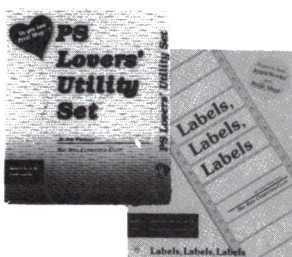
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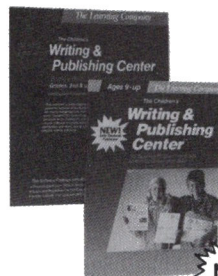
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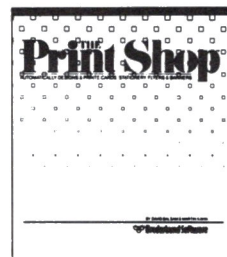
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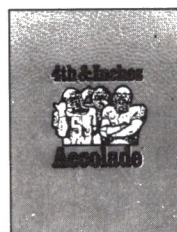
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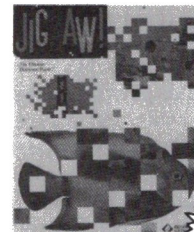
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Q U I C K T A K E

BY MICHAEL FISCHER

A feature-laden, complex telecommunications program

MODEM MGR

Modem MGR is a telecommunications program that meets nearly every need, although it is not designed for everyone. The program has more features than you are ever likely to need, but it also has a sometimes complex and less than modern user interface.

Modem MGR handles all the common forms of file transfer, including text (normal speed, variable slow speed, and Xon/Xoff paced) and protocol. You can select the standard XModem protocol, a modified XModem for slow packet-switching networks, the so-called AE Xmodem, or a special Modem MGR protocol for sending files between Apple II computers running Modem MGR. The program can perform Binary II translation during uploading and downloading and can save the current screen image to a capture buffer.

Modem MGR comes with a robust set of 36 macro commands that enable you to automate many of the operations you would otherwise have to perform manually, such as dialing, waiting for calls, or sending strings of text. My only criticism is that the "if" type command is limited to comparing two single characters rather than full strings.

The user interface resembles that in ASCII Express: You enter commands as single letters and specify other information on menus that appear when you select a particular command. You can also call for on-line help at any time.

Some other telecommunications

programs use a device like the AppleWorks file card or mouse-driven menu to make using the program more intuitive. For newer users, Modem MGR's "unfriendly" interface may be a problem, but more-experienced users who want this program's features and power should not have any trouble.

Composing and Receiving

Every telecommunications program worthy of the name includes at least a rudimentary text editor.

*Modem MGR meets
nearly every
telecommunications
need, and runs on every
member of the II family.*

Modem MGR has a full-screen editor with multiple (including reverse) scroll, cursor movement, and 24 editing commands such as insert, delete, justify, find and replace, and file merge.

A split-screen option uses the top 19 lines on the screen to display incoming text while the bottom 4 lines display text that you are entering to send to a remote computer. This division keeps your text separate from what you're receiving. In the split-screen mode, you can also choose to send each character as you type it or to send text a line at a time when you press the Return key. My only quarrel with the split screen is that you must select it as part of the installation pro-

cess, rather than switch it on and off while using the program.

When you are communicating with a remote minicomputer or mainframe, your computer functions as a terminal connected to that remote computer. In the case of most on-line services, your computer emulates a TTY (teletypewriter) terminal.

In some cases, particularly when you're working with a university, corporate, or other special remote computer, your program must be able to act like a specialized terminal. The remote computer sends signals that tell your computer how to format text that appears on the screen, but it works only if your telecommunications program can interpret the signals properly. This interpretive ability is known as terminal emulation.

Modem MGR can emulate the DEC VT-220, VT-100, and VT-52; Soroc; ADM3-A; IBM 3101; Televideo; Data General D200; and ADDS terminals. In addition, Modem MGR comes with a program that lets you define your own terminal features if you need a terminal-emulation capability that is not predefined.

Compatibility

Many programs that work with older Apple II computers and interface cards do not work with newer equipment. Modem MGR, by contrast, runs on every member of the Apple II family, from the original Apple II to the IIGS. It works with nearly all 80-column display cards for the earlier Apple II models and a wide variety of

Flight notes

4B

✦ **Exploring Japan with Jet** - Now that Japan Scenery Disk is included with Jet, we'd like to offer some suggestions for exploring the Japanese countryside from the cockpit of your F-16.

First, a close-up view of Tokyo. Take off from Hyakuri Airport (North 18542, East 32874) and turn to a heading of 187 degrees. This flight path takes you into the peninsula forming the right boundary of Tokyo Bay (see Tokyo area chart). At Mach 1 this heading should bring you to New Tokyo International Airport at Narita in about five minutes. Turn right to a heading of 270 degrees at Narita to put yourself on a direct course to Tokyo. When Tokyo comes into view, throttle back to 45% and drop altitude to 1,000 feet to explore the city. Highlights including Tokyo Tower and the Emperor's Palace will be clearly visible, with many high-rise skyscrapers to the north. Head for Tokyo International Airport (Haneda) in the southwest part of the city. Make your approach and land at Tokyo International. Keep your airspeed low and don't overshoot the runway or you'll end up in Tokyo Bay! Next month - another Japanese adventure!

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This richness of compatibility comes with a small price: The installation process is more complex.

new and old serial-interface cards, internal and external modems, printer-interface cards, printers, and clock cards—including such oldies-but-goodies in the Apple II world as the Videx UltraTerm display card, the Apple-Cat II modem, and DOS 3.3.

This richness of compatibility comes with a small price that you have to pay at least once, however. Because Modem MGR has so many options from which to choose, the installation process is more complex than that of most modern telecommunications programs.

Support

Modem MGR is available only by mail order direct from the author. Support is available by telephone (not toll-free) on an unlimited basis for the first two months after purchase and once a month thereafter. The manual provides excellent instructions on using the program and serves as a telecommunications reference as well.

Some people may find Modem MGR too much program. If all you want to do is perform simple, TTY-type telecommunications, the program is too powerful, and the added complexity is not for you. But if you want one of the most flexible and full-featured telecommunications programs available for the Apple II today, you should look into this program. +

Michael Fischer is A+'s telecommunications editor.

VITAL STATISTICS

MODEM MGR

A powerful and complex telecommunications program

Apple II/+e/c/gs/c+, 48K RAM, one 5 1/4-inch disk drive, DOS 3.3 or ProDOS, not copy-protected

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GAMEPORT

BY BOB LINDSTROM

Arkanoid, Warlock, Zany Golf's secret hole, and Alien Mind Easter eggs

BREAK-OUT PLUS

Can a computer game make you crazy?

Ask the red-eyed, callus-fingered multitudes who've surrendered to the paddlemania of Taito's smash arcade hit, Arkanoid. They know the answer: A big "you know it, good buddy."

Taito's Arkanoid proves that you *can* teach an old mouse new clicks. Consider the game play. Move the controller (mouse or joystick) to shift a paddle across the bottom of the screen. That paddle is bouncing a ball at a wall of bricks. Every time the ball hits a brick, the brick disappears. The goal? Destroy all the bricks.

Sound familiar?

The bricks that built Arkanoid are the same ones that formed the foundation of Break-Out, lo these many computer-game-playing years ago. In fact, it's hard to go much further back in the history of electronic games than Break-Out.

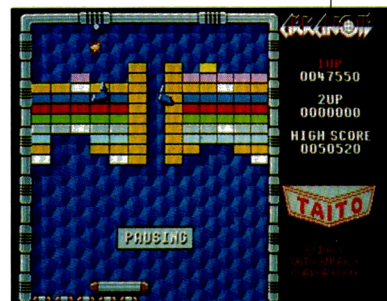
But Arkanoid is Break-Out with modern genius, a classic that has been tickled, crowbarred, and crystallized into one of the most fascinating arcade games of all time. At least that's the way it was in Taito's arcade original.

And that's also the way it is in Taito's Apple IIGS conversion, the company's first Apple game.

The bogus science-fiction plot stretched around Arkanoid isn't what makes the game intriguing (I still can't figure out what the plot has to do with the game). It's the whole slew of Break-Out advances.

ers require two or more contacts before they disappear. Still others never go away at all but act as obstacles that send your ball careening away at desirable and undesirable angles.

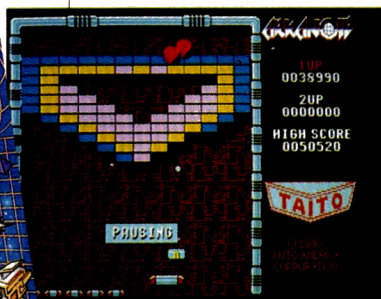
And the nasties. The little, irritating, meddle-



some objects that float and rotate in three-dimensional detail and have a troublesome habit of diverting your ball just as you're about to clear the level. Or they bash the ball at a cockeyed angle and send it past your paddle.

The best enhancements are colored power pills that drift leisurely out of some exploded bricks at the top of the screen toward your paddle. Catch them and they work wonders with the game play. They may double the length of your paddle, slow down the ball, open a gateway to the next level, or turn your paddle into a laser blaster that can shoot out layer after layer of bricks.

Of course, the greed factor takes over when you're intercepting power pills. Legions of



Instead of repetitive walls of bricks, Arkanoid boasts level after unique level of bricks in unusual shapes and configurations. Some bricks vaporize after a single hit; oth-

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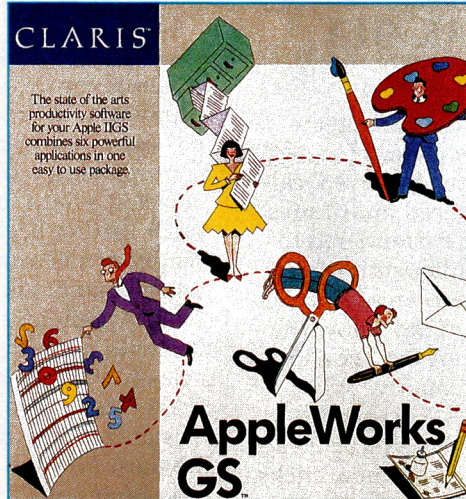
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means all six applications have the same look and feel, so you spend your time being productive instead of learning new programs. The applications work so well together that sharing data is as easy as a click of the mouse, so you'll get your work done faster.

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- Apple IIGS computer (minimum 1.25MB memory)
- 3.5-inch disk drive (two recommended)
- Monitor (RGB color recommended)

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By Bill Basham inCider Editors' Choice

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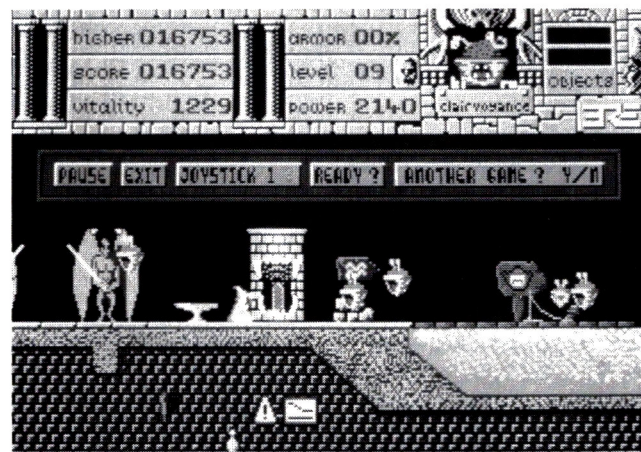
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GAMEPORT



Warlock: gratifying groans, ghoulies, and graveyards

players have lost a ball by trying to grab a laser blaster when they should have been batting the ball.

The sound, graphics, and animation of the home version of Arkanoid make it one of the most impressive arcade clones yet to appear on the IIGs. Even the separate Apple IIe/c/c+ version takes an agreeable shot at bringing home the Arkanoid angst.

Taito is located at 267 West Esplanade, 2nd Floor, North Vancouver, BC, Canada; (800) 663-8067; (604) 984-3344.

MONSTER MADNESS

Arcade action is truly catching up with the IIGs, as the computer continues its third year of life. Warlock (\$39.95) is a new game from Three-Sixty that RAMs spooks, ghoulies, and graveyards into computer memory.

This French-developed arcade game—by the team at Infogrames—is a striking adaptation of the popular Ghosts 'n' Gob-

lins. The player is a warlock (male witch) conjuring his way through a left/right scrolling playing field while blasting a never-ending gaggle of zombies, spiders, and other yecch-inspiring creatures.

The aim is to locate eight magical items that will aid in finding and defeating the insidious presence that has stolen the powerful Karna jewel. (Jewels, skulls, scepters, scrolls—when do we get to find a discarded bottle cap that grants eternal life?)

Smooth animation, more threats to life and limb than you can hammer a fire button at, and some great-sounding digitized grunts and groans add Warlock to the front ranks of the action-filled audiovisual onslaught that is setting a trend for IIGs entertainment.

ZANY SECRET

Yes, Virginia, there is a secret hole in Electronic Arts' stunning IIGs mini-golf fantasy, Zany Golf. But is "GamePort" going

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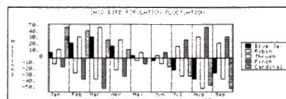
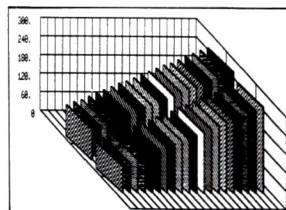
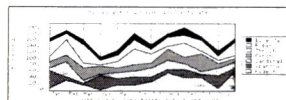
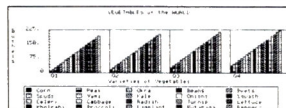
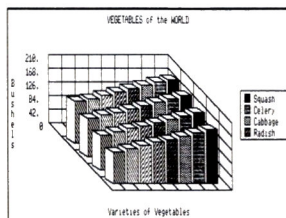
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CIRCLE 207 ON READER SERVICE CARD

GAMEPORT

*You can teach
an old mouse
new clicks.*

to be a joy-spoiling cold-water tosser and ruin the hours of frustrating fun you can spend trying to verify its existence?

You bet we are.

So, if you don't have to know, need to know, or want to know, skip down to the section entitled "Alien Eggs" right now.

Go on, do it. Take off!

Now that all the high-minded masochists are gone, loyal "GamePort" readers will get the dishonest, underhanded payoff. And be proud of it.

In the Energy level, the ninth hole of Zany Golf, you'll notice a mouse hole with two white glowing eyes glimmering in the darkness. When those eyes turn red, putt your ball into the mouse hole.

Bingo!

No more puzzling through the Energy hole. No more finishing the entire game under par in order to get to the secret level. You're there.

And what does the secret level look like?

No way. Do you think I'm the kind of cheating backhander that would give away a secret?

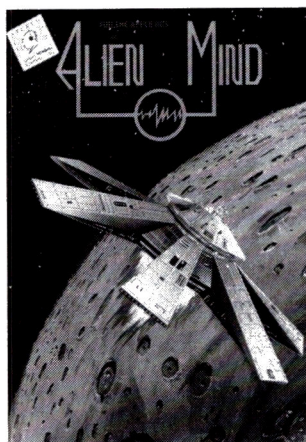
ALIEN EGGS

ILCs-owning "GamePort" arcadians who can take a break from incinerating mutant life forms may want to investigate the trio of Alien Mind "Eas-

ter eggs" submitted by reader Ron Mercer of Mentor, Ohio.

"There are three 'Easter eggs' in Alien Mind," writes Mercer. "They are activated by selecting items from the Main Menu in a certain order."

The eggs range from unseen graphics screens to a secret message. And



don't worry—you can leave the screens by clicking the mouse button or pressing Return. Here are the sequences:

Apple Mouse
Stereo Sound
Joystick
Mono Sound
Keyboard
Sound Off
About Authors

Sound Off
Keyboard
Mono Sound
Joystick
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About Authors

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ENTERTAIN

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SINK THAT BATTLESHIP

Dive Bomber is a new concept in flight simulators. It integrates a historical incident with a twist of fantasy to let you play the key role in one of the most significant naval actions of World War II—the sinking of the German super battleship the *Bismarck*.

The game puts you into the cockpit of a Grumman Avenger, an American torpedo bomber that became the most effective airplane of its type. On May 26, 1941, the day the game recreates, Avenger was an unproven design. In Dive Bomber, the prototype has been secretly shipped

to the British aircraft carrier *Ark Royal*. Your mission: find the German battleship and send her to the bottom of the ocean.

That's the fantasy. In reality, the *Bismarck* was damaged during a battle with the British battle cruiser *Hood*. The *Bismarck* sank the *Hood*, but on May 26, 1941, while she attempted to escape to Brest, a British Swordfish flying from the *Ark Royal* torpedoed her, crippling her steering gear. Early the next morning, the British battleships *King George V* and *Rodney* and two other warships sank the *Bismarck*.

Flying the Avenger requires you to perform the duties of three crew members: the pilot, who flies the plane, operates the forward-firing machine guns, and drops the torpedo; the gunner/engineer, who fires the ball-turret guns and

tracks enemy threats.

Dive Bomber consists of five increasingly difficult missions, which you choose by drawing straws from the Captain of the *Ark Royal*.

A typical mission begins with a look at the navigator's situation map to note the locations of the German Dornier aircraft; mines; E-boats; U-boats; and, of course, the *Bismarck*. But don't worry about her yet. First you've got to clear the sea lanes around your ship. If it's sunk, you have no recourse but to ditch into the cold North Atlantic.

Strategy is important. Throughout the mission, you'll encounter enemy aircraft that attack both the Avenger and the *Ark Royal*. At times, the threats come so quickly you must choose which one to deal with. Meanwhile, you must monitor the position of the *Bismarck*, which is trying to escape by sailing off the map.

Dive Bomber is not easy. Success requires a sound strategy for attacking multiple threats in order of priority. Sinking the *Bismarck* isn't a piece of cake either. You must come in low and hit the target. If you miss, the mission ends abruptly, which is the most frustrating aspect of the game.

The documentation is brief but provides excellent step-by-step infor-



manages the engine and aircraft systems; and the navigator, who monitors the positions of the *Ark Royal* and Avenger and

MENT REVIEWS

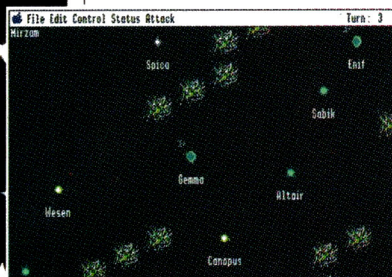


But it's not just a shoot-em-up either. Sure, "What it's all about" can be summarized as "When

must make production decisions: how many warships to make, how many scout vessels and transports. The computer can offer advice on these choices. No matter who makes the tough decisions, though, it takes Resource Points (RPs) to make ships, and your RPs are limited.

Any RPs you don't use are available for use on other worlds you inhabit, and they even accumulate at a rate of 6.25% every other turn. That's better than passbook savings! Save enough RPs, and you can move to a higher technological level, where warships are more powerful, and more expensive.

To conquer the galaxy, or even to avoid being conquered, you have to



ships of different empires end up in the same star system, combat will occur." No negotiation or cooperation here if you want to win.

You aren't just provided with unlimited ammunition and proletarian lives to pour into battle, though. Starting from a single star system, you

mation for most Avenger operations, but the section that deals with torpedo attacks, the most important part of the game, offers little advice other than altitude and airspeed information. You hone your technique through trial and error.

Dive Bomber has a lot to offer: The graphics are strikingly brilliant and smoothly animated, the action is fast-paced and challenging, and the game builds tension from takeoff to torpedo drop. You soon forget it is a fantasy and concentrate on your one objective: sinking the Bismarck.

Mark DuCharme

DIVE BOMBER

Apple II+/e/c/GS/c+, 64K RAM, one 5¼-inch disk drive, joystick, copy-protected

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IMPERIAL GALACTIC CONQUEST

Reach for the Stars could easily be called Blazing Warships. You pit yourself against three other players—any or all of which the computer itself can mastermind—in conquering the galaxy and spreading your own way of life. This is no educational game, unless



you're in training for Emperor of the Galaxy or Emperor's Economic Adviser and don't mind wasting a few star systems on the way.



REVIEWS REVIEWS

build a significant armada, and for that you can't just pump every RP into the defense department. You have to increase your population, bolster your industrial capacity, and even devote some RPs to "social level." Without social investment and investment in the Planetary Environment, you can end up with "a lower birthrate, industrial sabotage, and pollution."

As you create task forces of starships, you receive reports of new systems that your scoutships have seen. The list of visited worlds, as well as the productive capacity of your own worlds, makeup of task forces, and all other details are available from pull-down menus in the IIGs version of the game. These menus sit atop a graphic depiction of the star systems of your galaxy. The simpler II version of the game makes do with a cruder graphic of the galaxy and information/action screens with the same details.

After you decide on your movements and

production or let the computer "auto-explore," you see your moves, as well as the moves of your enemies, on the screen. If you win in space and have the force to overwhelm any Planetary Defense Bases, you can land colonists and a garrison force. Then the planet will begin cranking out RPs for your side.

On your way to a heady total of victory points, you can save a game for later continuation or try some of the basic options such as solar debris, novas (random star explosions that destroy everything in a system), natural disasters (earthquake, plague—you know, the stuff that reduces productive capacity), and xenophobes (weird life forms that stop interstellar trade and magnify battle losses).

Then there are the advanced options such as playing computer "veteran" empires, changing the costs of production, introducing levels of Navigation Technology and Industrial Technolo-

gy, and so on. In fact, since you can also alter the Victory Condition equation, you might even add some humanitarian concern. But not much.

The manual includes a tutorial game, which tells you step by step what choices to make and what effects to watch for. It concludes with a set of strategies including the Classic Opening (increasing industrial technology early and then reaping big RPs later), the Trout Variant (eliminating your army at first to reap even more RPs later, but risking a quick invasion), and the Gilligan's Island (a variant of the Trout Variant that depends on starting out from an isolated star system). This game has the feel of real star wars. Good luck—and watch those Social Level expenses.

Phillip Robinson

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REVENGE WITH HANDS AND FEET

It was four long years ago that Brøderbund's best-selling Karateka first monopolized my Apple II computer, and after I res-

If fighting games are your thing, The Last Ninja will keep you entertained until your fateful encounter with the Shogun.

cued the princess from the evil warlord in that game, I began clamoring for a sequel. Well, the wait is over, and my clamoring has ceased. Although, to my knowledge, the creators of The Last Ninja (System Three Software Ltd.) have no connection with the creator of Karateka (Jordan Mechner), the new game qualifies as a worthy spiritual successor.

I am no Bruce Lee fan, and I abhor violence in real life, but I have spent the last few weeks glued to my Apple IIGs computer, pummeling the day-lights out of the evil Ashikaga Clan, in accordance with The Last Ninja's plot. When you play, you seek revenge on the evil Shogun Kunitoki and his men, the Ashikaga Clan, because they have slaughtered not only your father, your brothers, and your closest friends, but also the entire brotherhood of the Ninja. That is, everyone except you. You are the last ninja (get it?).

The Last Ninja does not just appeal to your baser instincts by being



REVIEWS

mindlessly violent. You need to use your strategic skills to make your way through the beautiful—but treacherous— island of Lin Fen in search of sacred scrolls belonging to your slain comrades.

The first of six areas you explore is called The Wastelands. I have seen wastelands before, but none so picture-postcard-pretty as in the 16-bit IIGs version of this game.

(The 8-bit version's double-hi-res graphics are a bit blocky but still create a fairly detailed environment.) If they want to call the manicured lawns and blooming shrubbery wastelands, though, so be it. On the first screen, practice your moves and fighting options, because no matter which direction you choose, you will meet your first foe. Even though your enemy has a weapon, you have only your hands and feet. But you're a ninja, right? and feet and hands can be formidable weapons.

As you go through the different areas, be sure to explore every possible direction—including river crossings and lava flows. You are expected to find (and use, when appropriate) many items throughout the six levels of the game. All the things you need are easy to spot (they blink), but if you miss an item, you will probably be stumped at some point and may have to start from the beginning. You can backtrack through a level, but you can't revisit a previous level.

Sometimes you won't have any trouble figuring out what to use where, and at other times, in true adventure-game fashion, you have to experiment. Some of the other weapons available to you are a staff; shuriken stars; and, of course, the weapon no self-respecting ninja would be caught dead without, a numchuka.

You can save your game at any time, and I recommend doing so both before attempting anything difficult and after accomplishing anything challenging. You can also restore the game at any point, which means you can stop after a few hours of game play, secure in the knowledge that your progress has not been in vain. You can resume from that same place whenever you wish.

And resume you will, for if fighting games are your thing, The Last Ninja will keep you entertained until your fateful encounter with the Shogun. You won't let him get away with his dastardly deeds now, will you? See you in Lin Fen.

Donald Oliver

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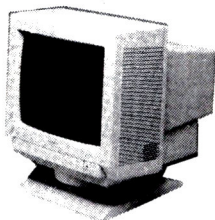
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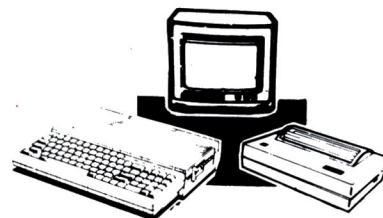


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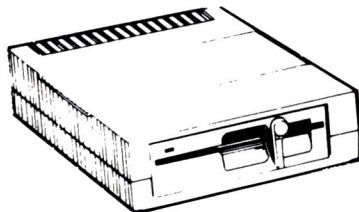
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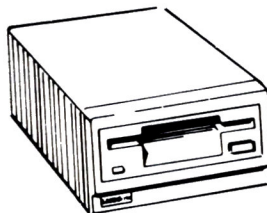
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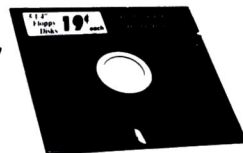
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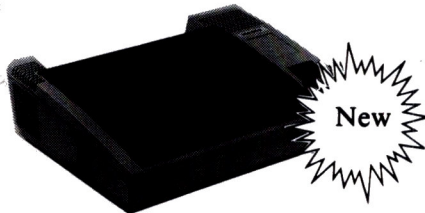
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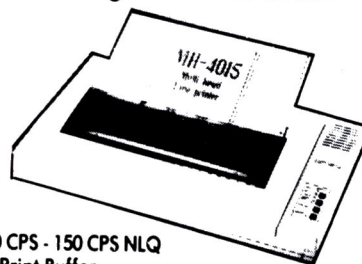
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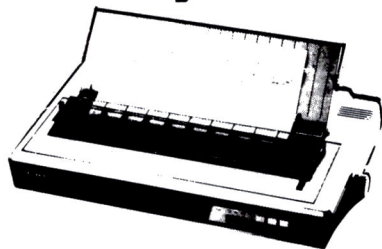
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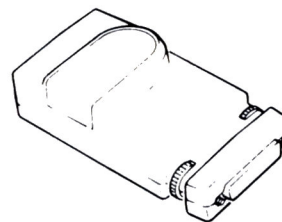
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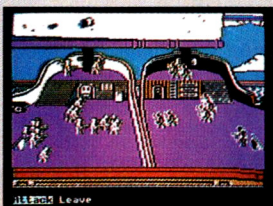


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SPEAKING OF GRAPHICS

Programming with Iconix

BY ROBERTA SCHWARTZ AND MICHAEL CALLERY

Once upon a time, in days of yore, when Steve Wozniak reigned supreme in the Apple kingdom, we recommended that all artists planning to work with microcomputer graphics learn to program. In those days, we didn't have the broad range of commercial software that we have now. If we wanted anything more elaborate than a simple painted screen, we had to program it ourselves.

Today, with the availability of animation programs such as Fantavision, display programs such as Show Off, and a variety of paint programs that offer color cycling, we can create a dazzling graphic production without typing a single GOTO.

We still like to program, though. Programming can add special effects to our graphics, allowing us to create interactive images that respond to the viewer, for instance.

Ye olde Applesoft BASIC, the programming language built into all Apple II computers, lets you work with only low-res and hi-res graphics, however. If you want to work with double or super hi-res, you have to seek alternatives. You can work in assembly language, use Apple Programmer's Workshop (APW) languages such as C or Pascal or even Apple's own GS BASIC, which is available in preliminary form from the Apple Programmers' and Developers' Association (APDA). But, if you're not already

an accomplished programmer, you face a steep learning curve with any of these options. None of them are as convenient and available as Applesoft.

Fortunately, several developers have created tools to allow Applesoft access to these formerly inaccessible graphics modes. Beagle Graphics (from Beagle Bros, naturally) provides hopeful hackers

res screen, place text anywhere on the screen, plot shapes, and draw graphic images with your favorite paint program and then move them around for animated effects.

The core of Iconix is a small binary file that must be loaded prior to the GS tools. Once you've loaded it, you can access super-hi-res graphics by using the Applesoft PEEK, POKE, and CALL commands.

These commands let Applesoft read the contents of a memory location (PEEK), store a number in a memory location (POKE), and execute a machine-language routine stored at a particular address (CALL).

POKE and CALL are particularly dangerous commands, as a POKE to the wrong address can destroy information your Apple needs to work properly, and a CALL to a wrong address can do just about anything. You can't damage your hardware with an incorrect POKE or CALL, but you can easily erase a disk or cause a spectacular software crash. If you follow Iconix's instructions carefully, though, you should have nothing to worry about.

Iconix provides commands to clear the screen, create a bar of color, invert a bar of color, load and display super-hi-res pictures, write text to the screen, read the mouse location, and plot an icon on the screen. This last routine is where Iconix gets its name (and its power).

Iconix defines an icon as a block

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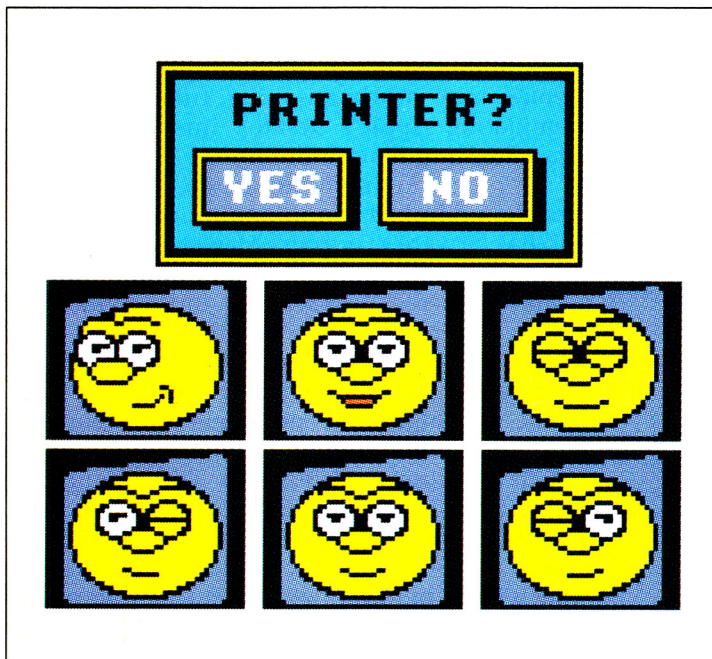


Figure 1: Icon sheet of So What Software's opening-menu animation

with routines to do everything Applesoft can do and more on the double-hi-res screen. And now, Iconix from So What Software does the same for super hi-res.

ICONIX

Essentially, Iconix allows you to manipulate previously created super-hi-res images. You can load and display any "standard" super-hi-

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of pixels—that's it. (The icons in this program are not to be confused with the icons that Apple's Finder uses.) An icon can, therefore, be as small as one pixel or as large as almost the entire screen. You start with a special icon-starter screen and use the icon editor to create the icon sheet from any super-hi-res graphic that was previously created with a paint program. You can have up to 14 icons in a single "icon sheet" (see figure 1). You load the icon sheet, using standard ProDOS commands, and plot the icons on the screen with a couple of POKes and CALLs. The POKes tell Iconix where you've loaded the icon sheet, which icon you want to plot, and the icon's *x* and *y* coordinates; the CALL does the actual plotting. Using icons creatively, you can do nearly anything, from emulating Apple's desktop interface to doing fancy animation.

In programming terms, Iconix is really a block-shape utility much like Polarware's Graphics Magician for hi-res and Beagle Graphics for double hi-res. In fact, the only thing that makes Iconix less than a full-fledged super-hi-res block-shape animation system is the absence of high-level programs to help you manage your animation, such as those in Baudville's Take One (for hi-res) and Brøderbund's Animate (for double hi-res). We hope So What Software will create such tools, but even without them, you can use Iconix to create effective super-hi-res animations.

The Package

In addition to the binary core of Iconix, So What Software provides several utility programs, including a palette editor and an SCB (scan line control byte) editor. (Iconix provides full access to the 16 possible palettes on the super-hi-res screen, so you can create screens with 256 colors!)

Documentation comes only on the disk, so you must print your

own manual. No big deal actually, but we'd prefer to have a professional-quality, bound manual on hand. (Editor's note: So What Software plans to release version 3.0 of Iconix in early 1989 with a revised, printed manual.) The documentation is fairly comprehensive, but it could use a better tutorial and more examples on the disk. So What Software provides two technical-support numbers and promises expert advice to help you overcome any problems. It also produces a newsletter with tips on using its products.

If you've never programmed before, we don't recommend this product. To effectively use Iconix, you already have to know something about how to program in Applesoft, but you don't have to be an expert Applesoft programmer to create useful utilities such as a slide-show program.

Did we say slide show?

Slide Shows at Last

One of the major problems for Apple IIGS artists is that they cannot show their super-hi-res images outside of the paint program in which they created them. With Iconix, however, it's a breeze to show a 65-sector, binary-saved, super-hi-res image. The ability to easily create a slide show might alone be worth the price of Iconix. Of course, once you've got the program, you might as well play with all the other capabilities it provides. Next thing you know, you'll be a super-hi-res whiz.

"Gallery" Submissions

We receive so many inquiries about submissions to "Graphics Gallery" that in our April column we plan to tell you everything you need to know—and probably more—about how to submit your work and what happens to it once we get it. +

V I T A L S T A T I S T I C S

ICONIX GS

Programmers' utility for working with super-hi-res graphics from Applesoft BASIC

Apple IIGs, 512K RAM, one 3.5-inch disk drive, ProDOS, not copy-protected

PRICE: \$49.95

So What Software
10221 Slater Avenue, Suite 103
Fountain Valley, CA 92708
(714) 964-4298

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To boldly ship at speeds no company has shipped before.

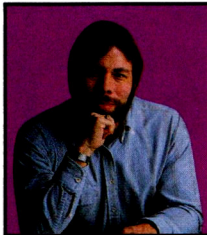
A proven product, available now!

Waiting three months to go faster is like taking two steps back and one forward. Applied Engineering's TransWarp™ Accelerator for the Apple IIe or II+ is shipping right now. Period.

Computing at warp speed!

It's an experience you shouldn't miss. And with TransWarp, you won't have to. Because TransWarp will run your IIe or II+ software *3.6 times faster*—that's 40% faster than Apple's IIgs!

No more yawning while your Apple slowly rearranges text or calculates spreadsheets. With 256K of ultra-fast RAM on board, TransWarp speeds up *all* Apple software — including AppleWorks, and all educational software, graphics and games. And it's compatible with all standard peripheral cards (such as RamWorks III and Apple memory cards), hard disks, 3½" UniDisks, 80-column cards, modems, clock cards, mice and more! You name it, TransWarp accelerates it.



"TransWarp is great! I have replaced all my other accelerators with it!"

Steve Wozniak, the creator of Apple Computer

An important difference.

With TransWarp, software runs up to three times faster than with other cards, since the others can't accelerate programs in auxiliary memory. That's why TransWarp is so much faster than the rest. Nearly all of today's more powerful programs run partially or completely in auxiliary memory: programs like AppleWorks, MultiScribe and Managing Your Money, to name a few. Why settle for a card that accelerates only part of the memory?

There's one more important difference. Since TransWarp doesn't use memory caching, you get consistent high speed performance.

A cinch to use.

Simply plug TransWarp into any slot in your Apple II, II+ or

IIe — including slot 3 in the IIe. Instantly you'll be computing at speeds you only dreamed about before. And should you ever wish to run at normal speed, simply press the ESC key while turning your Apple on.

Since TransWarp is completely transparent, you won't need preboot disks or special software. It's ready to go right out of the package!

Speed = Productivity

Imagine the productivity gains you'll achieve when your programs are running over three times faster. TransWarp is so powerful, your Apple will make IBM PCs and even ATs look like slowpokes.

- 3.6 MHz 65C02
- 256K of ultra-fast on-board RAM
- Accelerates main *and* auxiliary memory
- Low power consumption for cool operation
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- Plugs into any slot, including slot 3 on the Apple IIe
- 15-day money back guarantee (when purchased from Applied Engineering or thru a participating dealer)
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TransWarp Accelerator \$219

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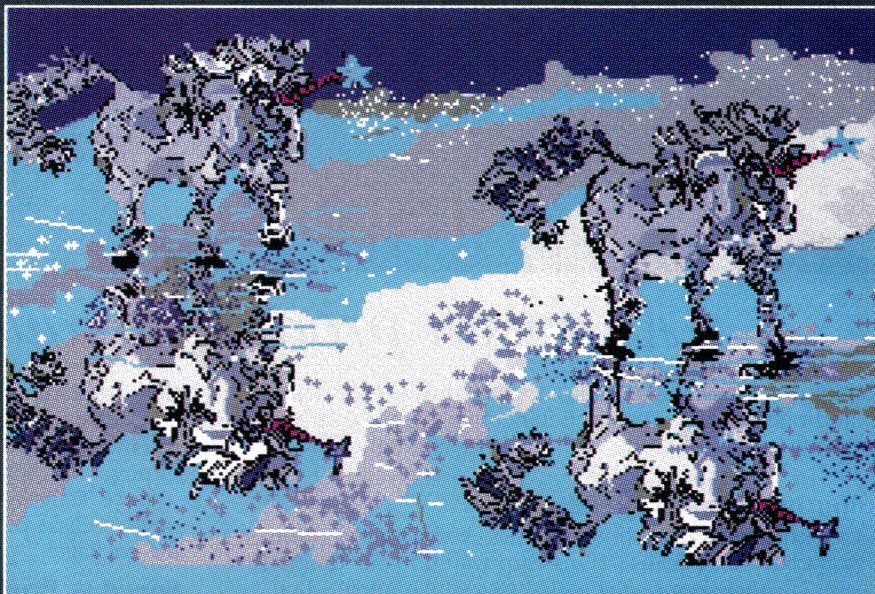
A Division of AE Research Corporation.

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SPEAKING OF GRAPHICS GALLERY

MYTHS AND MAGIC

There's definitely a little magic involved in creating computer art. Our "Gallery" artists have mixed myths and magical beings with their machine mastery to bring us this month's display of dragons, unicorns, knights, and sorcerers. Kat Summers (who needs to send her address to *A+* if she would like a reward for her work) was a high-school senior when she created "Unicorn," and "Merlin" and "Dragon" also are teenage renderings. The paint program of choice this month seems to have been Dazzle Draw, although Richard Lukens used Koala Painter and a joystick for "Dragon Fire" and "Knight."

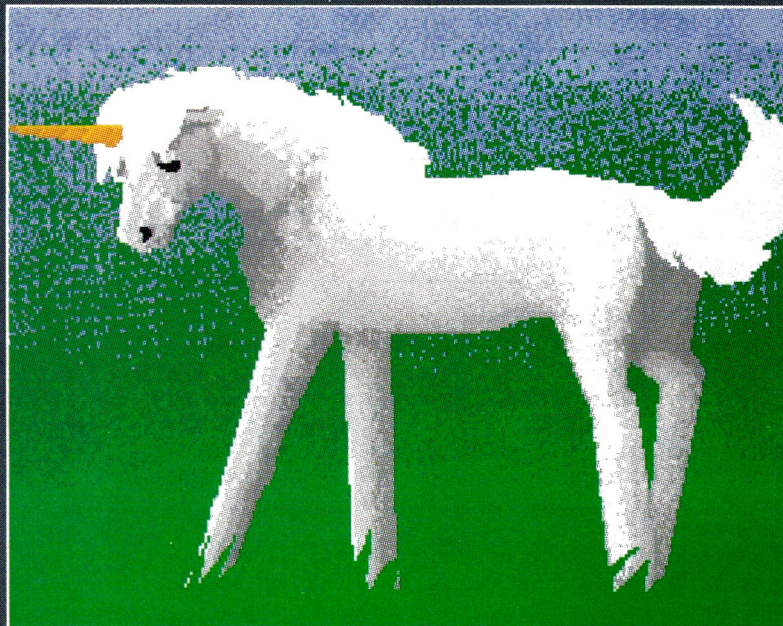


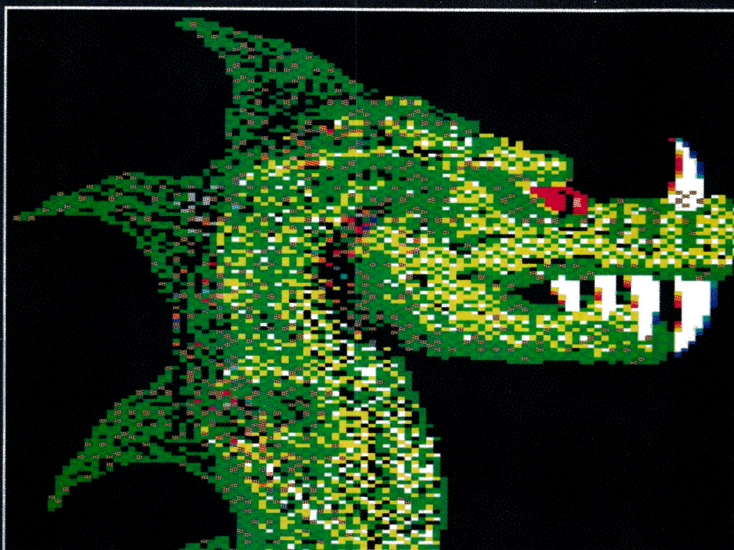
ESCAPE OF UNICORN, BETTIE LAKE, *Tama, IA*

FREE SPIRIT,
JOHNICE RUSSEAU, *Newport, MI*

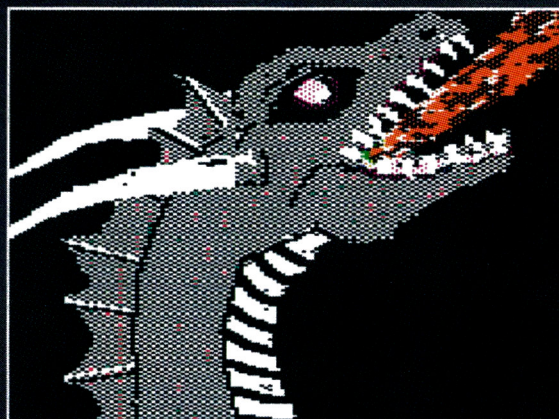


UNICORN, KAT SUMMERS, *Address Unknown*

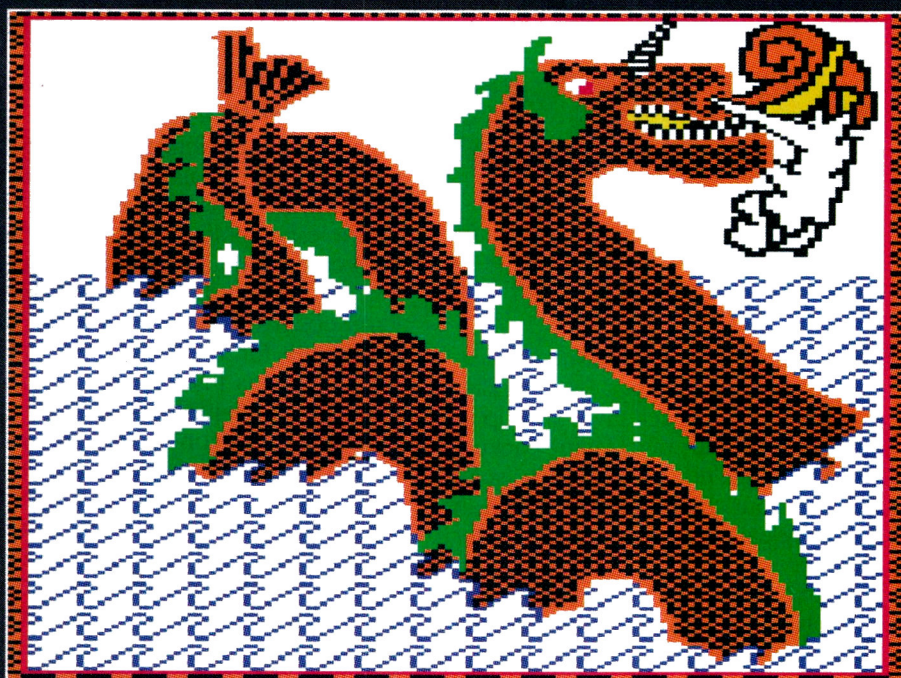




OLE REDEYE, **JEREMY WILLIAMS**, *Geneva, OH*



DRAGON, **KEVIN HUGHES**, *Novato, CA*

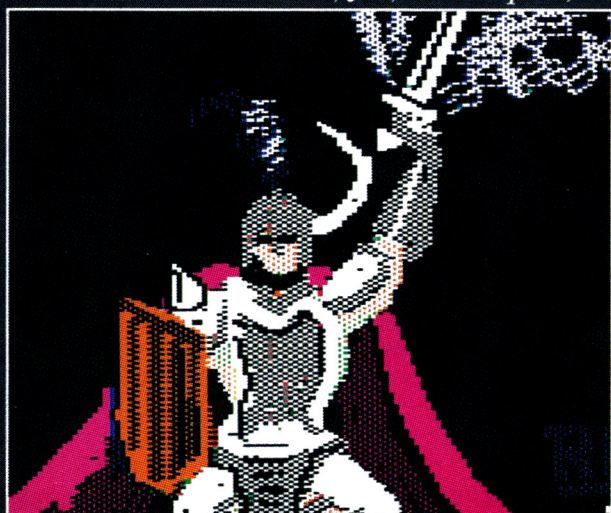


DRAGON FIRE,
RICHARD LUKENS, JR.,
Philadelphia, PA

MERLIN, **NATHAN ROOT**, *Hampden, MA*



KNIGHT,
RICHARD LUKENS, JR., *Philadelphia, PA*



Remember when this board meant power and speed?



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

Imagine. Turn on your IIGs and instantly the finder comes to life! All the speed and RAM power your IIGs was meant to have, packed into one, affordable "electronic hard disk."

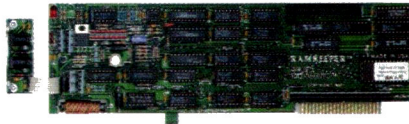
Applied Engineering's RamKeeper. A system that works like a hard disk, only better. It retains stored programs *and* data while your computer is turned off (like a hard disk), but gets up and running five times faster. RamKeeper is solid state, has no moving parts and, unlike a hard disk, has no heads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

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

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

Superior power backup.

RamKeeper comes complete with sealed Gel/Cell batteries for emergency backup in the event of a power outage. Gel/Cell's are by far the most reliable backup power source in this application. Unlike the Ni-Cads others



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

use, Gel/Cell batteries don't lose capacity if not discharged periodically.

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

RamKeeper uses a Switching Power Supply — the same technology used by Apple for the IIGs power supply. This design uses energy much more efficiently to keep your Apple running cooler.

Powers two memory cards in the same slot.

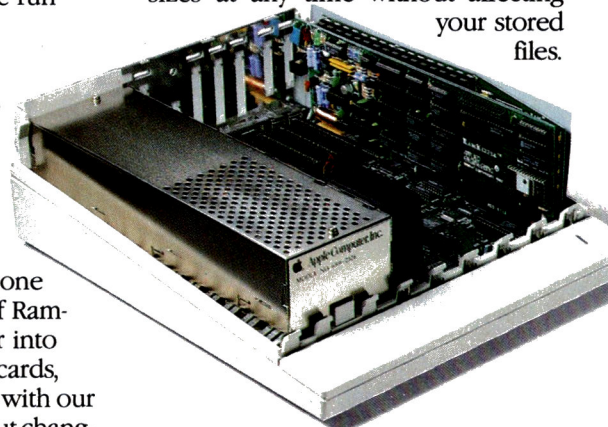
Have Apple's memory card, but now want the features of Applied's GS-RAM card? With RamKeeper, both cards act as one larger card. In one slot. Just attach one memory card to each side of RamKeeper and plug RamKeeper into the slot. And even with two cards, you can still keep slot 7 open with our optional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

RamKeeper also works fine with only one memory card.

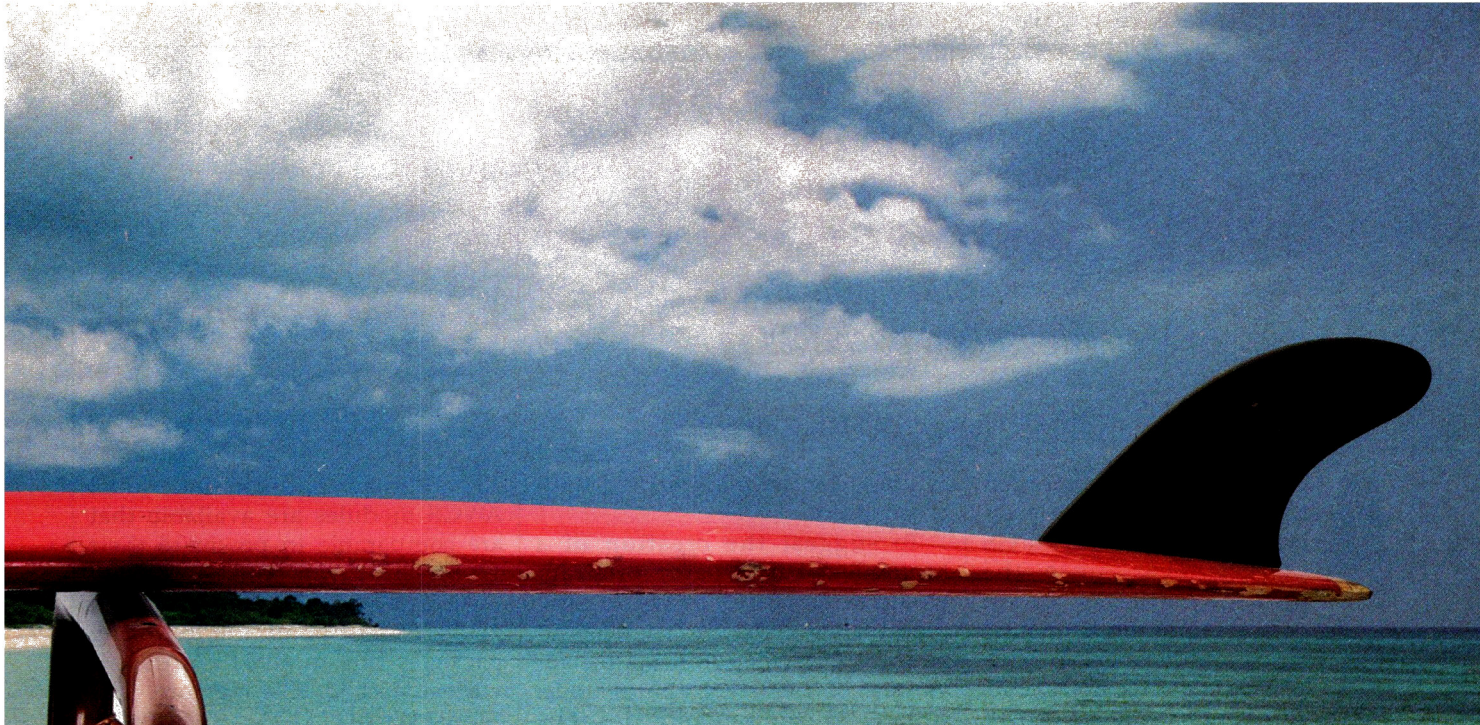
Makes all your memory usable memory.

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

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



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



Protect from program crashes.

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

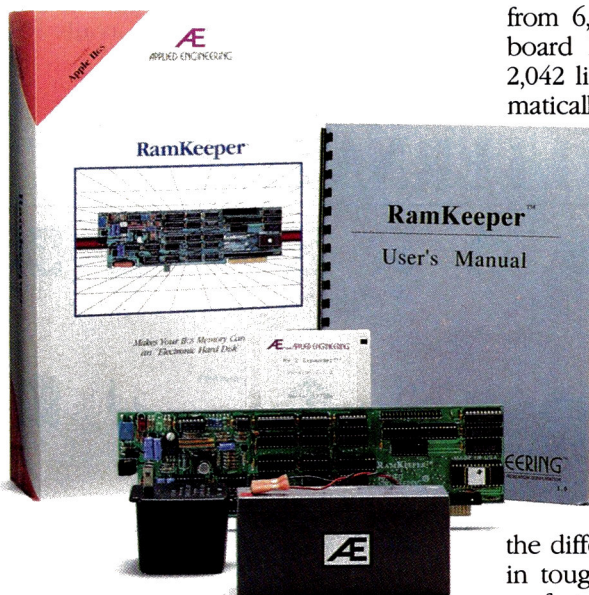
Verifies data security.

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

Significant differences.

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

- RamKeeper includes a Gel/Cell battery for 6 hours of total power failure backup, other use the shorter-life Ni-Cads and charge extra for them
- RamKeeper powers up to 16 Meg., others power only up to 8 Meg. maximum
- RamKeeper permits mixing and matching different memory cards and chip sizes, others have more limited combinations
- RamKeeper automatically configures for two cards, others have manually-moved jumpers
- RamKeeper configures linearly to eliminate memory gaps, others don't
- RamKeeper includes EPROM-protected operating software, others use floppy installation



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

- RamKeeper's software expands AppleWorks internal limits, others don't
- RamKeeper includes disk-caching software, others don't

Free AppleWorks Enhancement software.

Applied Engineering's powerful AppleWorks Enhancement software comes free with RamKeeper. It's well worth the purchase price alone. Our software makes AppleWorks faster and far more powerful by eliminating internal memory limits. Word processor limits increase from 7,250 to 22,600 lines. Database limits increase

from 6,350 to 22,600 records. Clipboard limits increase from 255 to 2,042 lines. Our software even automatically segments large files so you can save them on multiple floppies

In addition, RamKeeper comes with the most powerful disk-caching program available anywhere. The cache tremendously accelerates access time to the Apple 3.5 Drive. Creating, in effect, a speed booster on top of a speed booster... a potent combination that runs most applications up to *seven times faster*. That's the difference between paddling out in tough chop and surfing in on a perfect curl.

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

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SMARTPORT

*Four stand-alone
MouseText packages*

BY OWEN W. LINZMAYER

Apple IIGS owners have been anxiously awaiting the release of AppleWorks GS (AWGS) ever since the package, then called GSWorks, was announced in June 1988. Claris has done an admirable job of nurturing this ambitious project to fruition, and many Apple IIGS owners will buy AWGS simply because the product bears the same surname as Bob Lissner's classic productivity package for the Apple II. But the simple fact is that with its super-hi-res (SHR) interface, AWGS can't possibly be as efficient as the text-based, 8-bit original AppleWorks.

IIGS programs that use SHR graphics are inherently slower than comparable text-only applications. A bit-mapped SHR display has 128,000 pixels to manipulate, whereas a text screen has only 1,920 characters. Is it any wonder that SHR screen updates seem sluggish compared with screen updates of text-based applications?

The frustrating thing about AWGS is that it didn't have to suffer from the lethargic performance of the SHR screen. A special set of 32 symbols called MouseText characters (see figure 1) in the ROM of every IIGS and IIe/c/c+ was designed to create the familiar IIGS/Macintosh desktop user interface in the text mode and can be mixed with normal alphanumeric characters. Since they can be generated by character codes instead of groups of SHR byte values, MouseText

symbols can be manipulated with great speed.

To suggest the creation of a MouseText-based paint program would be ludicrous. I have no complaint about AWGS's page-layout and graphics modules' taking advantage of the SHR graphics mode. In fact, I'd be disappointed if they didn't. These two applications require the highest resolution avail-

Text alternatives to the individual AWGS modules are available that are comparable in power to their 16-bit brethren and don't get bogged down in the mire of SHR graphics. Best of all, the following packages run on any IIe/c/GS/c+ with at least 128K of memory.

MouseWrite

Anyone who has used Multi-Scribe GS (the program on which the AWGS word-processing module is based) will attest to the program's slowness. Typists who have progressed beyond hunting and pecking can outtype the program, and the documents' bit maps slow down printing on a dot-matrix printer.

MouseWrite, from Roger Wagner Publishing, closely adheres to the IIGS user interface with a full complement of pull-down menus and pop-up dialog boxes (see figure 2). You use the mouse to select menu items, highlight blocks of text for cut-and-paste operations, and rapidly scroll through the document. Keyboard shortcuts are available, although a

mouse is strongly recommended.

The main disadvantage of MouseWrite is that it lacks WYSIWYG capability. For example, instead of accurately displaying boldface characters on screen, it encloses bold text with inverse Bs. Other styles include underline, narrow, wide, sub/superscript, italics, proportional, and even color, depending on the capability of the printer. MouseWrite comes with 15 custom ImageWriter fonts that al-

APPLEWORKS GS ALTERNATIVES

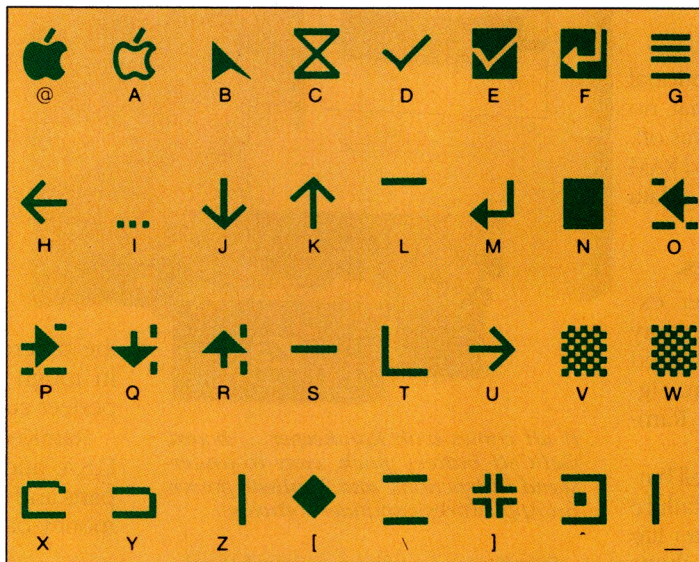


Figure 1: These 32 MouseText symbols can create a Mac-like user-interface in the text mode.

able because they are graphics-oriented. From the standpoint of productivity, however, there was no reason for using SHR graphics for the other AWGS modules (word processing, database, spreadsheet, and communications). MouseText would have been a better choice, allowing AWGS to maintain the speed of AppleWorks while offering a convenient Mac-like mouse/menu user interface.

Fortunately, stand-alone Mouse-

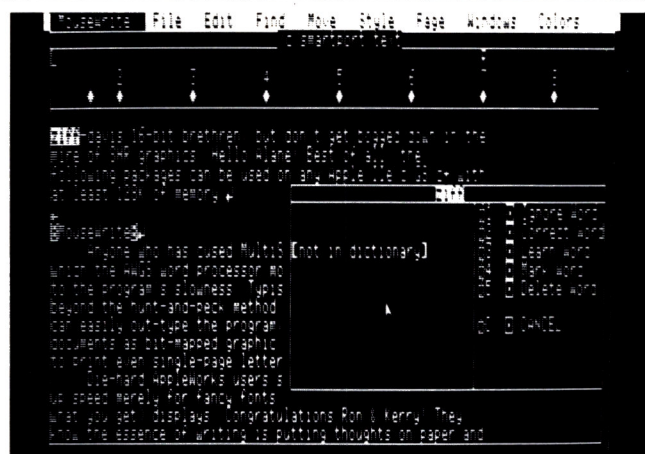


Figure 2: With its pull-down menus and pop-up dialog boxes, MouseWrite gives you the feel of writing on a Mac.

low even more control over the final appearance of documents. Unlike AWGS, MouseWrite lacks the ability to incorporate graphics into a document, however.

MouseWrite includes built-in desk accessories for mail-merge, communications, and spell-checking against a 62,000-word dictionary. The program can read AppleWorks word-processing and DOS 3.3 text files directly, and you can save MouseWrite documents as ASCII text files in order to use them in other applications.

MagnaCharta

I'd like to recommend a good mouse-based spreadsheet program, but, unfortunately, none exists. The now-defunct International Solutions used to market a program called MouseCalc, but no firm has picked up the rights to this product. Too bad. MouseCalc had great features, not the least of which was built-in graphing. The AWGS spreadsheet module also has graphing features, but both pale in

comparison with MagnaCharta, a stand-alone data-charting program from Third Wave Technology.

MagnaCharta uses MouseText characters to create a Mac-like work environment with a menu bar at the top of the screen and a grid below, into which you can enter data manually. AppleWorks, DB Master, and AppStat files require only minor preparation before loading into MagnaCharta.

MagnaCharta offers nine different types of charts: column, stacked column, bar, line, line/column, scatter, area, three-dimensional, and pie. To graph a range of numbers, use the mouse to place the cursor on the first value in the grid, drag it to the last, and choose Graph & view from the menu bar. In seconds, the graph appears on the double-hi-res screen with automatically added title, legend, and division marks (see figure 3).

The power of MagnaCharta becomes apparent in making adjustments. You can fine-tune graphs by

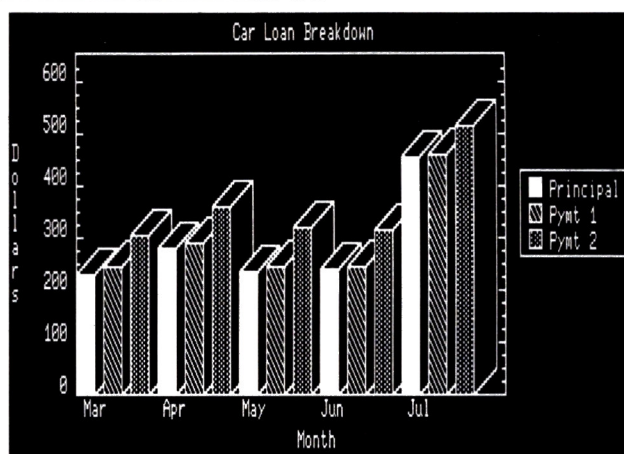


Figure 3: MagnaCharta automatically scales graphs and adds legends, titles, axis values, and names.

specifying details such as axis and mark style; pixel, line, width, and depth spacing; title and legend position; and screen, chart, and legend borders. MagnaCharta adapts to the new settings and creates modified graphs in a flash. For further enhancement, you can save charts as graphics files and load them into Brøderbund's Dazzle Draw paint program or Time-works' Publish It! desktop-publishing package. By comparison, AWGS offers minimal control over the appearance of its five chart types.

MouseTalk

There is no valid reason to use graphics for the AWGS telecommunications module, since most commercial information services (such as CompuServe, GENie, and The Source) transmit information as ASCII text. Systems that do use graphics, such as AppleLink—Personal Edition, do so sparingly and require dedicated software. Moreover, the AWGS black-on-white telecom screen is difficult to read,



Figure 4: Telecommunications users will appreciate Mouse-Talk's full-screen text editor and scrollable capture buffer.

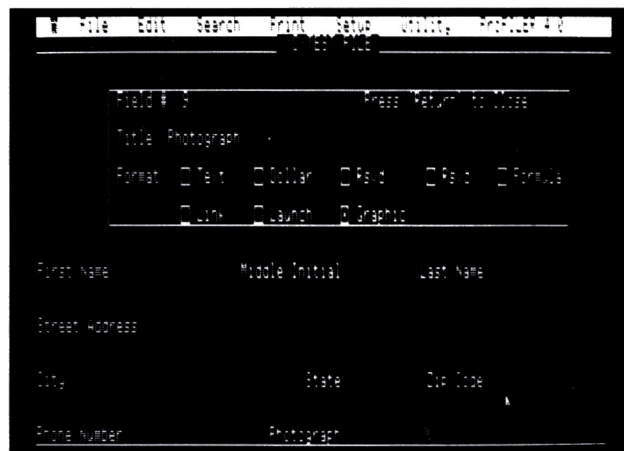
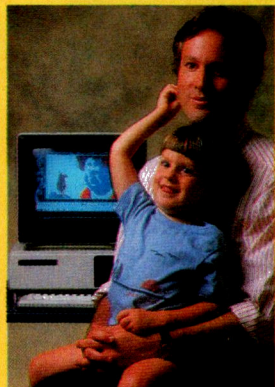


Figure 5: ProFILER lets you specify field formats and rearrange database layouts with point-and-click ease.

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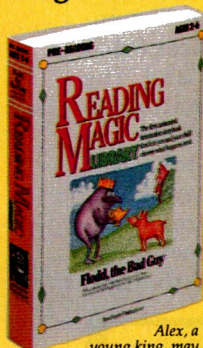
Reading aloud with young children is an essential step in their early education, and

now the Lapware™ programs in **Reading Magic Library™** bring a new dimension to this valued family tradition.

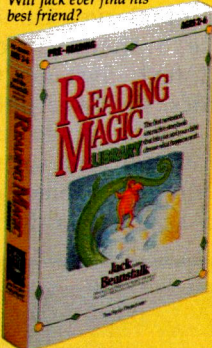
These delightfully told and beautifully animated stories allow you and your child to step into the hero's shoes, deciding what will happen next. Learning to read has never been so exciting!

The greatest way to introduce your child to computers...

Together.



What will Jack find on his voyage to the top of the cloud? Will Jack ever find his best friend?



Alex, a young king, may have found a magic lamp, but can it save his kingdom from Flodd the Bad Guy?

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Available for the IBM/Tandy and Apple

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CIRCLE 200 ON READER SERVICE CARD

and the default font is inalterable.

MouseTalk, from United Software Industries, is a general-purpose telecommunications program for logging onto commercial networks, accessing local bulletin boards, and connecting to other computers either directly or over telephone lines. A macro feature defines complex procedures that can, for example, log onto a system, read any waiting electronic mail, and hang up.

The program has all the power of its popular predecessor, ASCII Express Pro, but its interface is infinitely more accessible to casual telecommunicators. A large scrollable capture buffer (like that of AWGS) allows easy review of on-line exchanges (see figure 4), which you can edit with the built-in full-screen text editor and store on disk or print.

MouseTalk works with all internal and external Hayes-compatible modems and can operate at 50-19,200 baud. Its 12 terminal-emulation modes include DEC VT-100 and VT-52. For error-free transmission, you can use the XModem and YModem protocols and have the program auto-extract multiple files downloaded in the Binary II format.

ProFILER

Perhaps the neatest new AWGS database feature is the special field type that allows integration of graphic images with text information in a record. This feature first appeared in SoftWood GS File (which can also play sounds stored in fields) and is now available to all 8-bit-computer owners who are using ProFILER.

ProFILER has been around for several years but is upgraded regularly. Version 4.0 displays hi-res, double-hi-res, and super-hi-res (on a IIGs only) graphics files contained in a record. Enter the pathname of the file into a field that has been defined for graphics and press Ó-L to view the picture. This innovative feature can be useful for cataloging an art collection or maintaining digitized photographs in employee files, for instance.

Along with the graphics, ProFILER has most of the options typical of a database program. You can sort information on up to four fields, merge databases, print mailing labels, and create multiple report for-

mats. As with AWGS, changing the arrangement of fields in a record layout means clicking on a field and dragging it to the desired position (see figure 5). ProFILER converts AppleWorks database files to ProFILER format as it loads them from disk.

Although ProFILER largely adheres to Apple's human-interface guidelines, it does take some liberties that make using it somewhat confusing. ProFILER has many desirable features but also several idiosyncrasies that may frustrate AppleWorks users. I wouldn't give up AppleWorks for ProFILER, but in many ways I prefer it to the database module in AWGS. +

VITAL STATISTICS

MOUSEWRITE (VERSION 2.6.8B)

A full-featured Mac-like word-processing program with spelling checker

Apple IIe/c/gs/c+, 128K RAM, one 5¼- or 3.5-inch disk drive, ProDOS, not copy-protected, mouse recommended
PRICE: \$149.95

Roger Wagner Publishing, Inc.
1050 Pioneer Way, Suite P
El Cajon, CA 92020
(800) 421-6256 • (619) 442-0522

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MAGNACHARTA (VERSION 3.0)

A data-charting program that offers nine graph types and control over every detail

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PRICE: \$59.95

Third Wave Technology, Inc.
11934 Lorain Avenue
Cleveland, OH 44111
(800) 233-9283 • (216) 671-8991

CIRCLE READER SERVICE NO. 371

MOUSETALK (VERSION 1.5)

On-line communications with a point-and-click interface

Apple IIe/c/gs/c+, 128K RAM, one 5¼- or 3.5-inch disk drive, ProDOS, not copy-protected, mouse recommended
PRICE: \$119.95

United Software Industries
8339 Topanga Canyon Blvd., Suite 200
Canoga Park, CA 91304
(800) 332-7244 • (818) 887-5800

CIRCLE READER SERVICE NO. 372

PROFILER (VERSION 4.0)

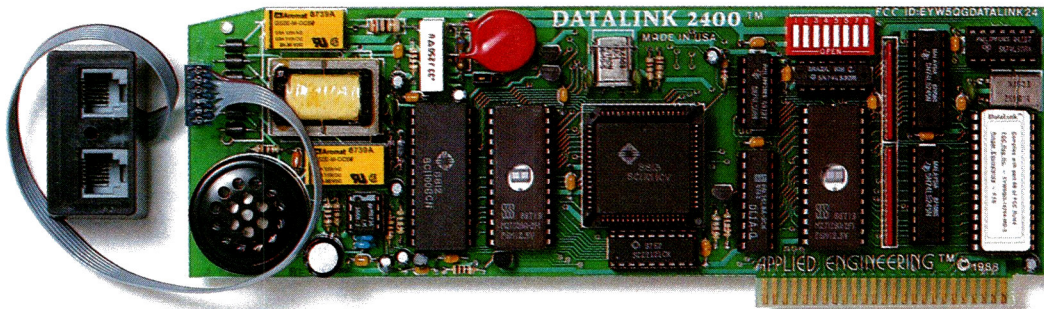
A mouse-driven database program that can display graphics from data records

Apple IIe/c/gs/c+, 128K RAM, one 5¼- or 3.5-inch disk drive, ProDOS, not copy-protected, mouse recommended
PRICE: \$129

Pinpoint Publishing
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Emeryville, CA 94608
(415) 654-3050

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

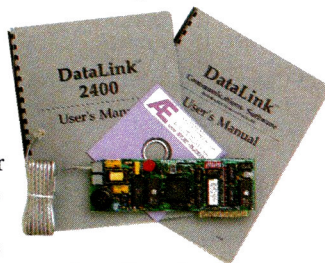


Applied Engineering's new DataLink™ 2400. Simply put, the finest modem on the market for your Apple IIgs, IIe or II+.

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

Twice the speed.

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



Complete communications software included.

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

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APPLEWORKS HELP FILE

COMBINING DATABASE FILES

Q. *I have two AppleWorks database files that I want to combine into one file. Both files contain names and addresses, and both have the same number and type of categories (First Name, Last Name, Address, City, State, ZIP). I've used the ⌘-L command to arrange the categories of the files in the same order, but when I copy from one file to another, the first names from one file end up in the last-name category of the other file. Similarly, the last names from that file go into the first-name category of the file I am copying to. All of the other categories transfer correctly. Can you tell me how I can combine these two files without transposition of the first and last names from the second file when I copy them to the first?*

A. It sounds as though you created the first two categories of your two files in different order. You must have created file 1 as First Name, Last Name, Address, City, State, and ZIP and file 2 as Last Name, First Name, Address, City, State, and ZIP. AppleWorks retains this original order when you copy via the clipboard to another file.

Using ⌘-L to arrange the order of the categories affects only their appearance on the screen, not the

order in which they will copy, which accounts for the transposition of the first and last names of the second file when you copy them to the first file.

To solve the problem, enter either the list or form view and press ⌘-N, which displays the original creation order of the categories. Write down this order for both files. Then create a tables-style report for one of the files. Arrange the categories in this report to match the original creation order of the categories in the other file. Next, print the report to an ASCII file on disk and create a new database from this ASCII file. The categories in this new database are now in the proper order for copying. The steps for creating the ASCII file are as follows:

1. Enter the list view of the database you want to rearrange.
2. Press ⌘-P.
3. Choose Create a new "tables" format and press Return.
4. Type a name for the report and press Return.
5. Use ⌘-< or ⌘-> to arrange the categories of this database to match the original creation order of the categories in the database to which you are copying.
6. Press ⌘-P.
7. Choose A text (ASCII) file on disk.

8. Enter the pathname, which tells AppleWorks where to print the ASCII file. For example, to print an ASCII file to a disk named DATA with the filename TRAN, enter the pathname /DATA/TRAN.

9. Press Escape until you return to the AppleWorks main menu.

10. Choose Add files to the Desktop.

11. Choose Data Base.

12. Choose From a text (ASCII) file.

13. Enter the number of categories in response to the question How many categories per record? (1-30). In this example, the correct number is 6.

14. In response to the question Pathname?, type the same pathname you used to save the ASCII file (e.g., /DATA/TRAN).

15. Type a name for this new file (any legal filename).

16. The categories are now in the correct order for copying.

SPREADSHEET CUBE ROOTS

Q. *I notice that the AppleWorks spreadsheet module has a square-root function—@SQRT. What I want to do is find cube roots. How can I use a spreadsheet to do this?*

A. The AppleWorks spreadsheet module does not have a built-in function for finding cube roots, but you can find the cube root of a number by moving to the desired spreadsheet cell and entering that number followed by a fractional exponent. For example, to find the cube root of 27, enter 27^(1/3). The result of raising 27 to the 1/3 power is 3. **+**

The technical staff at Claris Corporation answers your AppleWorks questions. Call the Claris Technical Support Department at (415) 962-0371 (6:00 A.M. to 8:00 P.M., Pacific time) or write to Help File, A+, 950 Tower Lane, 18th Floor, Foster City, CA 94404. Because of limited space, we aren't able to publish responses to all inquiries we receive.

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LEARNING CURVE

Multiple intelligences, a challenge for educational technology

BY DAVID D. THORNBURG

Everyone involved with education wants to help children be their best—to become all they can be. Educational computing was born out of a belief that this technology would make children better able to grasp concepts. In the late 1970s, one of the prime attractions of educational computing was the promise that it would simplify the individualization of education by allowing learners to proceed at their own rate. This feature, coupled with the computer's ability to provide auditory and visual rewards, made the computer a tireless basic-skills tutor.

While educational computing has grown in popularity, the computer as tutor has become only one of the roles of this technology. The approach to education embodied in Logo represents the opposite extreme. Logo gives children programming tools that allow them to test ideas and experience the consequences of their reasoning.

The recent surge of interest in the field of thinking-skills development leads us toward a more current view of the computer's role in education. Bloom's taxonomy of thinking skills is the framework we use for teaching these skills as well as for designing complementary course materials. It consists of the following skills: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Each of these six skills is impor-

tant, and yet contemporary education has focused on knowledge, comprehension, and application rather than on the "higher-order" skills of analysis, synthesis, and evaluation. In an effort to apply technology to remedy this perceived deficiency, many software developers have created programs that address the development of higher-order thinking across the

the thinking processes that led them to a solution.

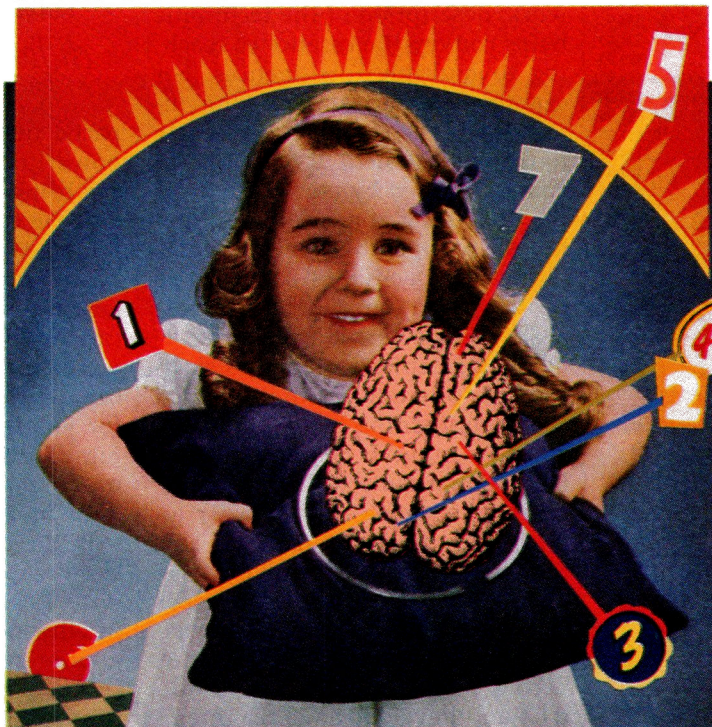
This formal attempt to correlate software with thinking skills is laudable but incomplete. While acknowledging the need to develop all thinking skills in all children, it ignores the personal computer's potential to truly individualize instruction.

Computer-based individual instruction has traditionally assumed that students differ in their speed of learning, and not in their intrinsic learning styles. I believe that we are now on the threshold of a new understanding that will allow educational computing to reach its potential. The key to unlocking this secret lies within learners—not teachers.

Many years ago, a study on IQ-test scores examined the correlation, if any, between these scores and academic performance. There was a high level of correlation between IQ scores and academic performance, but there was no correlation between these scores and performance outside the classroom.

This observation intrigued Professor Howard Gardner at Harvard, who launched into a detailed study of intelligence by looking at the performance of prodigies, idiots savants, and others with special gifts. His work appeared in the book *Frames of Mind*. As a result of his study, he concluded that we all have at least seven intelligences, including linguistic,

TEACHING TO THE WHOLE CHILD



curriculum. Many drill-based programs emphasize the development of the lower-order skills, but the catalogs of publishers such as The Learning Company and Sunburst Communications are filled with programs that help students learn how to analyze complex situations, to create solutions from a synthesis of existing parts, and to articulate

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CIRCLE 146 ON READER SERVICE CARD

*The more ways
a subject is presented,
the more that subject
is learned and
remembered.*

logical/mathematical, intrapersonal, spatial, musical, bodily-kinesthetic, and interpersonal.

Each of us may excel in one of these seven areas, but we all have capabilities in the other six.

Superlearning

"Superlearning," an educational technique developed in Bulgaria, produces remarkable results in the amount of material covered in a short period of time and in its retention. One of the things that distinguishes superlearning from what takes place in the traditional classroom is that it teaches to all our intelligences.

Although the principles of superlearning were developed independently of Professor Gardner's work, description of the technique helps convey the essence of teaching to multiple intelligences. For example, during a week-long intensive French course I recently took, we listened, wrote, played games, worked by ourselves, drew pictures, sang songs, danced, and talked with each other. Furthermore, these activities coalesced to contribute to our eventual success at speaking a new language.

The atmosphere in today's classrooms is often quite different from the superlearning model. Our tendency is to teach to the linguistic, logical/mathematical, and intrapersonal learners and virtually ignore the other intelligences. This tendency has two negative consequences. First, it ignores the needs of children whose dominant intelligence is not one of these three. Second, it misses the chance to validate and develop the other intelligences in all the children. Time and time again, we have found that the more ways a subject is presented, the more that subject is learned and remembered.

The Harvard work is a floodlight that illuminates a new path for education, one that can do much to help children retain their natural love for learning.

Just how is a classroom teacher supposed to design a curriculum that caters to all the different intelligences? Are bodily-kinesthetic children supposed to practice their spelling words by writing them on the school wall with a squirt gun? (Not a bad idea, by the way.) Many marvelous ideas get lost in implementation because they are too time-consuming or because they pull educators in new directions too fast. Fortunately, computer technology is tailor-made to allow education to reach the dominant intelligence of each child.

The reason for tying computer activities to the intelligences is simple: From the beginning of the personal-computer revolution, we have heard that this technology will allow the individualization of instruction. For many people, that means nothing more than self-

*How is a teacher to
design a curriculum
that caters to all the
different intelligences?*

paced instruction. Now, with this powerful theory to guide us, we can bring that dream into sharp focus. We can explore the match between the software we already have and the dominant intelligences of our children. Also, we can highlight areas for new software creation, and, best of all, we can develop specific sets of criteria for judging such software. To my mind, this focus is what's been missing in educational computing.

Your Ideas

In the next few months, we will explore existing computer applications as they apply to the various intelligences, starting with the linguistic and logical/mathematical intelligences. In the meantime, think about the software library in your school and about how various programs seem to reach some children better than others. I'd love to hear your insights on this topic. Please write to me. **+**

David Thornburg is actively involved in the development of creative uses for computers in education. Address letters to him in care of this magazine.

A+ TEACHERS' TOOLBOX

Tom Snyder Productions has two new educational-software series, Reading Magic Library and Choices, Choices, that, true to the rest of the product line, are outstanding. Reading Magic Library is the company's first product for the preschool set. This program series is not just another alphabet, color, and shape tutor for children to explore on their own. It's an interactive reading activity that parents and children carry out together. Choices, Choices is an elementary school adaptation of valuable critical-thinking-skills activities that the company originally developed for the Decision series. Here's a look at TSP's first releases in these two series.

Reading Magic Library

The Reading Magic Library brings a new dimension to story time because it involves a computer. Those of you who cringe at the thought of involving a computer in such an intimate activity, please read on.

The programs' designer, Tom Snyder, is openly skeptical about the value of computers in early education. He's convinced that what little kids really like about computers isn't the software or hardware but being able to sit in someone's lap to use one. Leave it to Tom Snyder to actually design software around this idea and come up with an entirely new product concept: Lapware.

The world's first lapware, the

Four programs in two new series for young learners

BY JENNIFER BRAWER



Reading Magic Library, is a collection of interactive, colorfully animated stories for parents and their children to read together. While the parent reads aloud, the little one in Mom or Dad's lap can press the space bar to progress through the story. At several crucial points in the story line, the program interrupts with a prompt asking your child, or the two of you together, to choose between two directions for the story to follow. How many Golden Books let you do that?

The real magic is in the two stories that currently make up the Reading Magic Library: Jack and

the Beanstalk and Flodd, the Bad Guy. Credit for these gems goes to Tom Snyder and Peter Reynolds. Their rendition of Jack and the Beanstalk strays a bit from the classic story line—at least I don't remember Robocow, do you?—

but remains true to the original tale. As for Jack and the baby gooselet who lays golden eggs, they're to your left here, reading A+, of course.

Flodd, the Bad Guy is an original Snyder/Reynolds fable about a real meany named Flodd who makes life miserable for a young king named Alex and his dog, Ollie (see figure 1). Things get so bad that King Alex has to resort to using his magic lamp to stop Flodd's evil deeds. When he's down to his last wish and Flodd has kidnapped Ollie, Alex faces a true test of character.

I can't divulge much more of the stories be-

cause they are too special. I can say that you must help Jack and King Alex make many choices during their adventures (see figure 2). For example, when Alex needs to find Flodd, the program asks you to decide whether to ask other people if they've seen Flodd, or follow Ollie's nose. And, when Alex chases Flodd, you have to decide whether he goes by boat or helicopter.

In addition to the many ways children and their parents can go through these stories, Reading Magic Library's interactive tales offer opportunities to discuss what Jack or King Alex should do, prac-



Figure 1: Flodd, the Bad Guy plagues King Alex and his dog Ollie in Reading Magic Library's interactive fable.



Figure 2: Children and their parents must make many choices together to help Alex and Ollie move through their adventures.

tice letter recognition, learn new vocabulary, and make new imaginary friends.

There is a strong positive correlation between parental involvement with their children's education and the children's academic success. What better time to start this involvement than when children are young and still at home? If you happen to have a computer and love reading with your child, Reading Magic Library is a must.

Choices, Choices

As a series, Choices, Choices is conceptually similar to TSP's Decision series but for students in grades K-6. The programs facilitate a structured, teacher-led exercise in making choices about responses to a set of circumstances. Rather than focusing on lofty topics such as global politics or media ethics, Choices, Choices deals with issues elementary students face at school.

One computer is all a teacher needs for the lesson, since it is designed as a collaborative, whole-class exercise. The two current Choices, Choices titles, Taking Responsibility and On the Playground, come with an excellent, extensive teachers' guide and a numbered picture set for use with the software.

On loading into the computer, the program presents a description of a dilemma. In Taking Responsibility, two students accidentally break their teacher's prized possession. On the Playground deals with students' attitudes toward a new kid at school who doesn't fit in. Once the computer has displayed the explanation of the situation, the program requires hierarchical

organization of four behavior goals and resolution of goal conflicts that arise during the exercise.

To help the class prioritize these goals, the Choices, Choices package includes four large cards, each of which contains one goal statement and a picture illustrating the goal (see figure 3). The teacher can ask four students to hold a card while the rest of the class contemplates the best goal sequence.

After the class has agreed on the priorities, you enter the goal order into the computer. As the story unfolds, students make choices about how best to handle the situation in light of their chosen goals and their previous behavior. The class uses the program's picture cards to

build a comic strip depicting what is going on.

When the program prompts students to make a choice, it also provides the numbers of four picture cards for building alternative behavior sequences and considering their consequences before committing to a course of action. The picture cards provide students with visual cues that help them discuss the pros and cons of a particular action. The final step in the exercise is class evaluation of how they handled the situation.

The decision-making model at the core of this program series is "think it through before you do." Students practice analyzing a situation, prioritizing goals, considering

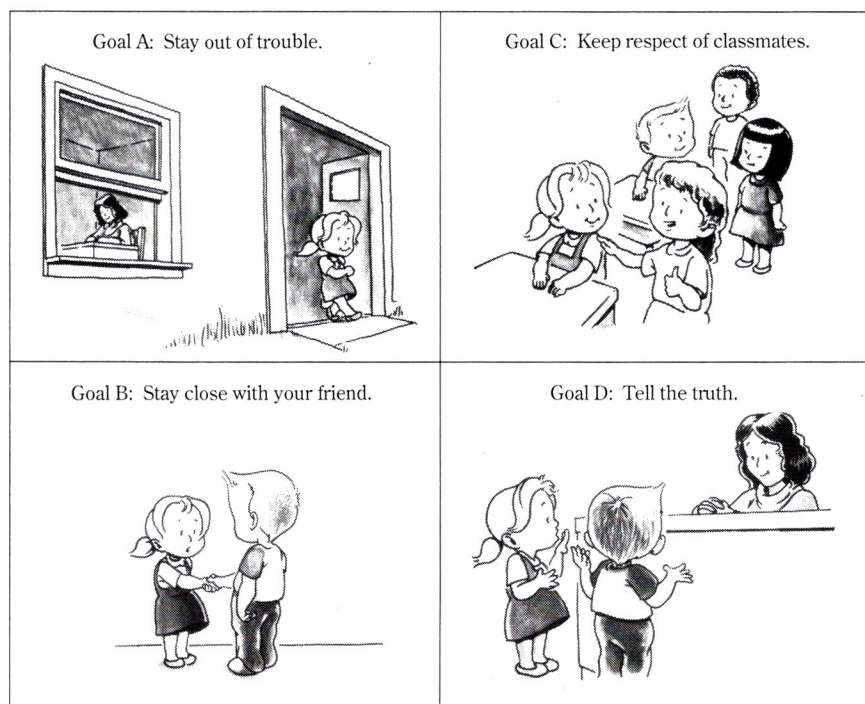


Figure 3: Goal-statement cards K-6 students use in Taking Responsibility

*Children need to
evaluate their options
and be aware of
the consequences.*

the options that will get them to their goal, making a choice, and then facing the consequences. In real life, you don't get the chance to undo what you've done if you figure out a better way. In Choices, Choices, you can return to the program with a different goal-priority sequence and experience the situation from a fresh perspective.

In the introduction to Choices, Choices programs, the authors bring home the importance of learning how to make complex decisions at an early age. Given the likelihood that our children will face life-and-death decisions regarding drugs and sexual behavior, these programs couldn't come at a better time. Children need to critically evaluate their options and be aware of the consequences. The Choices, Choices series provides a framework for practicing real-life decision making and introduces the process of critical thinking. +

VITAL STATISTICS

JACK AND THE BEANSTALK; FLODD, THE BAD GUY (READING MAGIC LIBRARY)

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CIRCLE READER SERVICE NO. 353

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Apple II+/e/c/gs/c+, 64K RAM, one 5¼-inch disk drive,
copy-protected

PRICE: \$89.95 each; entire series, \$160

Tom Snyder Productions

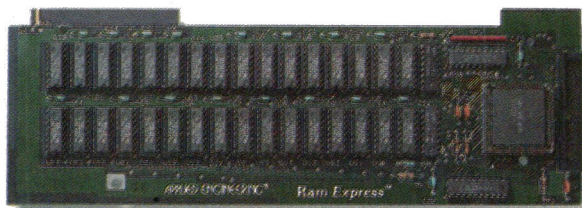
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BY LESLIE STEERE, MARY BOHANNON,
AND SHANON CULLEN

*Graphics guidance,
tape-backed turbos,
underworld action,
and more*

PRODUCT ROUNDUP

INSTANT ART CURRICULUM

Baudville has just made its graphics classic 816/Paint a curricular coup for any art course: The program now is available in an education package that includes a teachers' guide written by computer-graphics gurus Roberta Schwartz and Michael Callery.

A+ readers familiar with the Schwartz and Callery team's clarity of writing and breadth of Apple II graphics knowledge know what they can expect in this guide, and it's all here. From discussing various art movements such as Impressionism and Futurism to explaining the IIe's bit mapping, the authors present challenge

816/Paint Education: more class for the art classroom



The Sider C96-Turbo comes packaged and loaded with everything you need to plug it in and get started.

without frustration and explanation without condescension for computer artists of every level. The guide's 76 pages of activities, thorough appendix, and section of supplementary handouts provide instructors with a complete basic-art course that's easy to modify to suit students' abilities.

Activities pages include lessons on such topics as designing with lines, contour drawing, color mixing, and showing feelings, and each lesson includes suggestions for noncomputer activities to further advance students' understanding of specific graphics concerns.

816/PAINT EDUCATION

Apple IIe/c, 128K RAM (super-hi-res mode requires IIgs with 512K RAM), one 5¼- or 3.5-inch disk drive, mouse or compatible input device, ProDOS, copy-protected (hard-disk-installable)

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Baudville, Inc.
5380 52nd Street SE
Grand Rapids, MI 49508
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CIRCLE READER SERVICE NO. 501

DEFINITELY FIRST CLASS

First Class Peripherals has a philosophy of shipping products with everything required for instant installation, and the company's Sider C96-Turbo is no exception. The C96-Turbo high-performance hard-disk drive with integrated tape subsystem comes already loaded with GS/OS, ProDOS, and several powerful software utilities. Packed along with it are the host-adaptor interface card, all the necessary cables and cords, an owners' manual, two data cassettes for the tape-backup system, and a 3.5-inch program disk. Just plug in the drive, boot up the system, and your IIe or IIgs has an extra 90Mb of disk storage and a 60Mb tape backup.

Software utilities installed on the subsystem include the SiderFile tape backup-and-restore program; Glen Bredon's Beachcomber volume defragmenter; BlockWarden,

which lets you display and edit blocks of data; and Mr. Fixit, a program for testing and repairing data blocks. The Sider's installation and users' guide includes explanations and instructions for using all the utilities.

So, just plug it in and let the heads spin. Only it might be a good idea to discourage curious youngsters from sticking their favorite "Sesame Street" cassettes into the Sider's cassette slot...

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Apple IIe/GS
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APPLES IN GANGLAND

Okay, Pinky, here's your chance to take over the Chicago underworld. With your own peroxide moll, a sub-machine gun, and a decided lack of moral standards, you, too, can lie and shoot your way into the Syndicate. Maybe.

Some of the language is pretty racy, and some of the stereotypes may be a bit objectionable, but The King of Chicago's graphics are outstanding, and it's all in good

and the same outcome. If you don't want to keep getting bumped off in the first few minutes of play, however, you should memorize the list of players' attributes and read the reference card



before you let Pinky curl that thick lip of his for the first time.

To survive the Chicago gang wars and get that coveted membership invitation from the Syndicate, you must be savvy, stay cool, and remember that you have no friends.

THE KING OF CHICAGO

Apple IIgs, 768K RAM, one 3.5-inch disk drive (two drives strongly recommended)
PRICE: \$49.95

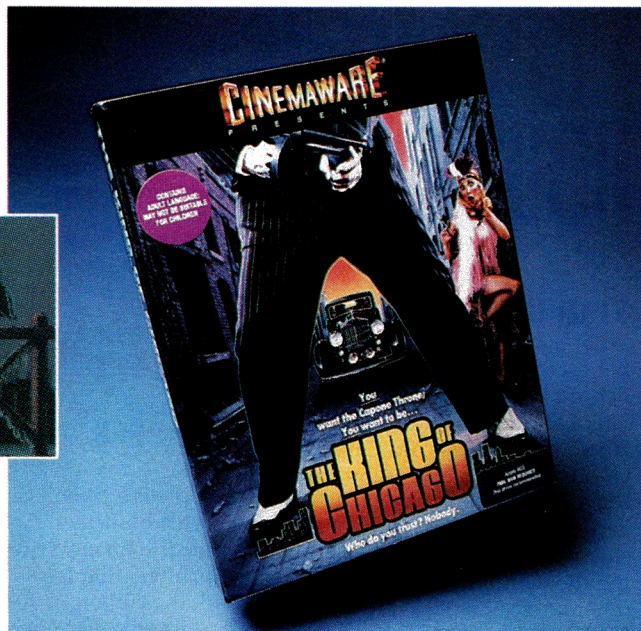
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READ UP WITH RAMUP

Mixed up with memory? Puzzled about ProDOS? Hesitant with your hard disk? Quality Computer's RAMUP 4.0 is a software interface for organizing and speeding up your RAM disk. A handy primer that takes you step by step through ProDOS-volume setup and organization is available separately for \$3.

With RAMUP, you can load your favorite ProDOS application programs onto a RAM disk and switch quickly and easily between applications. For example, you can load both AppleWorks and MouseWrite and then flip back and forth at will between the programs. RAMUP 4.0 also provides status information and partitioning to help you manage RAM-disk storage space, can auto-load files to your RAM disk from floppies, and can backup/restore



King of Chicago invites you to shoot, bomb, and bribe your way to the top of Chicago's underworld.

your RAM disk to floppies.

Beginning with ProDOS 8 & 16 is an elementary introduction to Apple II disk storage. "When it comes to computers," warn authors Gary Morrison and Steven Ross, "many of us learned the hard way that following the instructions (humiliating as it may be) is the safest and fastest way of getting everything operational." If you follow their 108-page book to its conclusion, you will learn everything from how to name your volumes and files to how to organize your disks for maximum efficiency. The authors both are university professors,

and it's clear that they were very careful—sometimes too careful—to bring their level of instruction down to the lowest common denominator. Still, anyone who's faced with setting up a RAM disk or hard-disk drive for the first time should find the information useful.

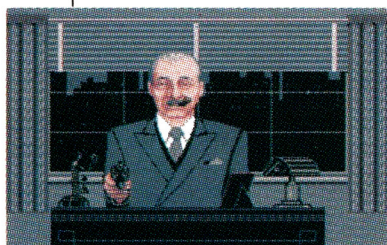
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CIRCLE READER SERVICE NO. 504

RAMUP 4.0 helps organize your RAM disk; a handy primer tells you how.



(and funny) fun. Cinemaware calls The King of Chicago an interactive movie, and that's an apt description. From the safety of your armchair, you can control some (but not all) of Pinky's actions as he tries to shoot, bomb, and bribe his way to the top of Chicago's gang world. Every choice you make affects the personalities of the characters you interact with, so you can play the game thousands of times without reaching ex-

PRODUCT ROUNDUP

STAR GAZING

What movie superstar made her escort follow two paces behind her? Where did the "Rat Pack" like to hang out? How many movies did Cary Grant and Katharine Hepburn make? What was Bogart's favorite pub? You earn your stars by answering these and thousands of other questions. Ticket to Hollywood is a software adventure and simulation that takes you through 80 years of movie history and thousand of facts of movie lore. With the six detailed 3-D maps, you explore famous landmarks in Hollywood or follow in the footsteps of your favorite stars. You can even attend a premiere at Grauman's Chinese Theater

or quiz the "director" about your favorite movie or stars. Gather clues, follow leads, and solve 25 mysteries.

TICKET TO HOLLYWOOD

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PRINTING LABELS

Directory Labeler Version 1.1 offers Apple II users a way of documenting the directory contents of ProDOS volumes on peel-off labels or 8½ × 11-inch sheets of paper. The program can print "standard directory labels" sorted by file-creation date, file-modification date, filename, or file type. You also can print "custom labels" that include a user-defined title and five additional lines of text, each of which can be positioned flush-left, flush-right, or centered.

DIRECTORY LABELER

Apple IIe/c/gs/c+, 128K RAM, one 5¼-inch disk drive, ProDOS, not copy-protected
PRICE: \$19.95

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CIRCLE READER SERVICE NO. 517

SERIOUS SOFTWARE

The Suicide Prevention Resources program is an AppleWorks data disk for

use by teachers, school counselors, psychologists, health-care and social-service professionals, and parents. The disk's *Teachers' and Counselors' Handbook* covers the myths of suicide, listening skills, support networks, substance abuse, teenagers, the elderly, and the aftermath of suicide.

The Basic Information Pamphlet program lists suicide warning signs and basic suicide-prevention procedures. Additional files in the program cover the various suicide-prevention outreach programs and referral systems that are available. All the information in the program is in Spanish and English.

SUICIDE PREVENTION RESOURCES

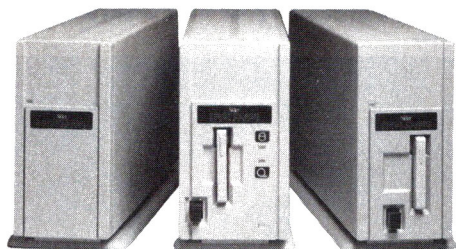
Apple IIe/c/gs/c+, 128K RAM, one 5¼-inch disk drive, ProDOS, not copy-protected, AppleWorks required
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CIRCLE READER SERVICE NO. 518

The Sider™ Storage Solutions

The PRAISES.



It seems like it happens year after year. The leading publications to the Apple II marketplace, in product reviews and round-ups, single out First Class Peripherals and *The Sider* for special praise.

This year, the accolades read like this:

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A+ MAGAZINE

1988 "DREAM MACHINE" SELECTION, HARD DISK STORAGE.

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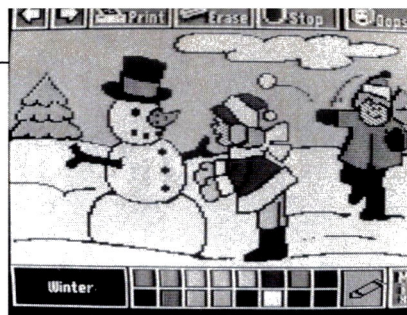
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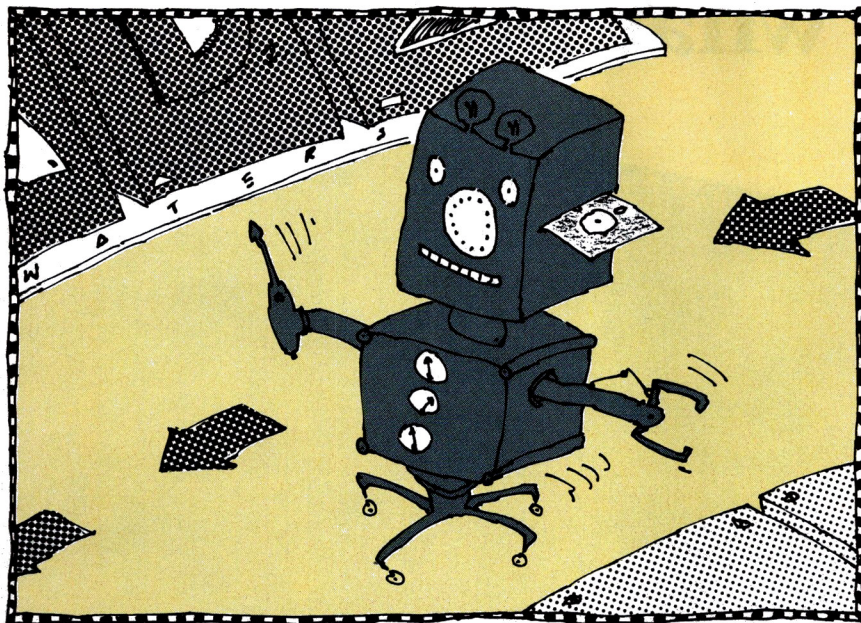
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TIPS AND TECHNIQUES

APPLEWORKS SPLIT SCREEN

As most AppleWorks users know, the word-processing module does not provide a split-screen mode—an invaluable aid for translating from one language to another. I have figured out how to create one, however.

First, print (⌘-P) your AppleWorks word-processing document to a text (ASCII) file on disk.

Now make a database from the text file and specify one category per record. Create a new "tables" format for the database (⌘-P) and, using the arrow keys in conjunction with ⌘, make the single column as wide as the screen and print the report to a DIF file on disk.

Make a spreadsheet from the DIF file and, using the Layout option (⌘-L), expand the column to the full width of the screen. Finally, to create a split screen, open a top and bottom window (⌘-W) and use the

bottom window for typing your translation. If the file is too long to fit into the spreadsheet (999 lines), you can copy parts of it into an adjacent column and synchronize the windows (⌘-W).

After you have made any necessary modifications, using the split screen inside the spreadsheet module, print the revised manuscript as a text file on disk and create a new word-processing document from this ASCII file.

LAWRENCE A. BARR
KISII, KENYA

GENTLE RESTART

When resetting Control Panel options that require you to turn off your IIGS to activate the change (reconfiguring the RAM disk or slot assignments, for example), try typing Control-⌘-Option-Reset instead. This sequence activates a self-test, from which you can exit at any time by pressing Control-⌘-

Reset, causing your new Control Panel settings to take effect. This method is much quicker and puts less wear and tear on the computer's components than cycling the power.

MIKE NAYAK
EFFINGHAM, IL

FINDER EASTER EGG

The initial release of the Apple IIGS System Disk 4.0 contains a new version of the Finder (version 1.2) that has a cute "Easter egg." Go to the new-desk-accessory (NDA) menu and select About the Finder . . . while holding down the Option key. The entire desktop, including the cursor, flips upside down!

OWEN W. LINZMAYER
TECHNICAL EDITOR

ALIEN MIND BACK DOOR

Here is a "back door" you might like. It's in PBI Software's Alien Mind game for the Apple IIGS. Typing the word GREEN at any level sends you to the next level, but it doesn't give you any clue of a password.

Warning: Seeing the higher levels or the alien early takes away much of the joy of getting there by yourself. Be sure you want to take that chance before trying this tip.

ANTHONY MATTICK
FRANKLIN, IN

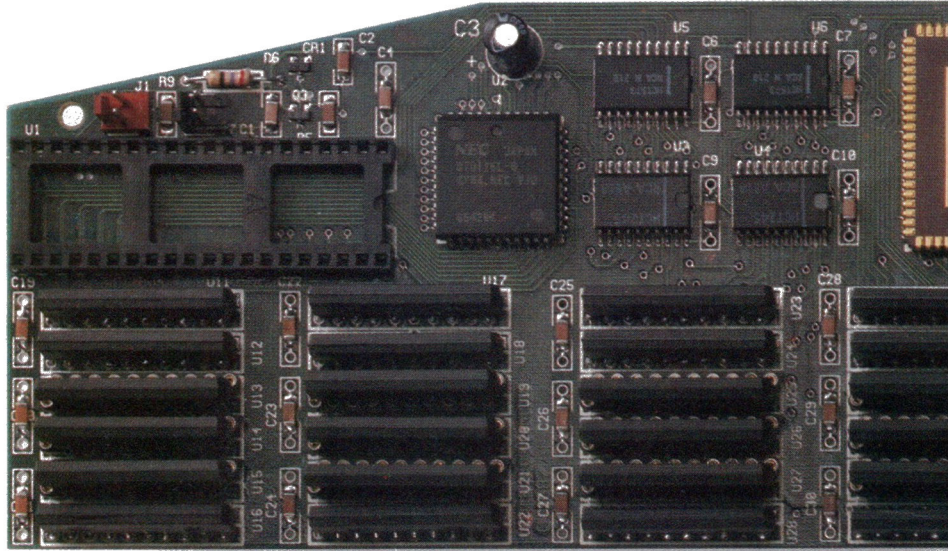
THE FLASHER

Ever since GS/OS was released, users have reported numerous sightings of a flasher. If the Volume setting in the Control Panel is at its lowest level (off), the screen border flashes whenever a system beep is called for. To see this new feature in action when you're using the Finder (version 1.2), enter the Control Panel after pressing Control-⌘-Escape, choose Sound, turn the Volume off, return to the Finder, choose Help . . . from the Apple NDA menu, and click anywhere outside the dialog box.

OWEN W. LINZMAYER
TECHNICAL EDITOR

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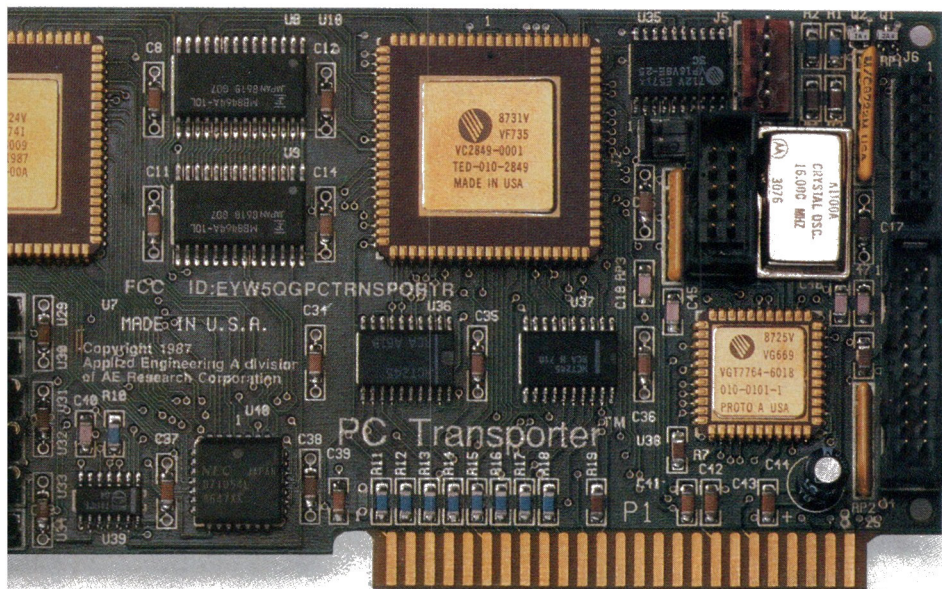
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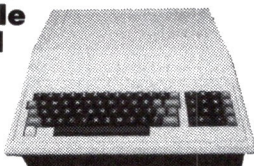
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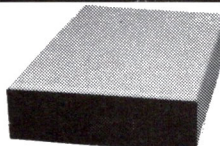


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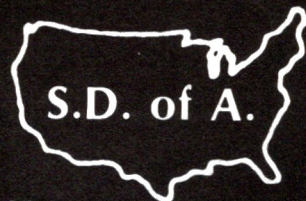


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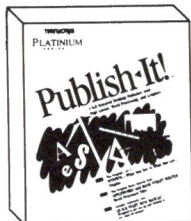
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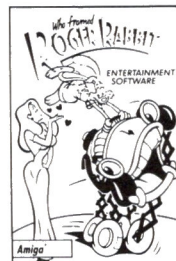
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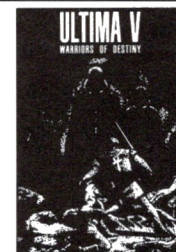
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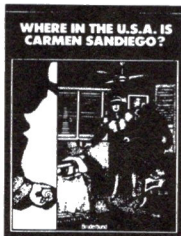
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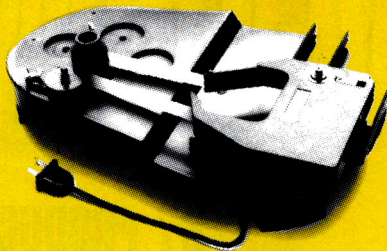
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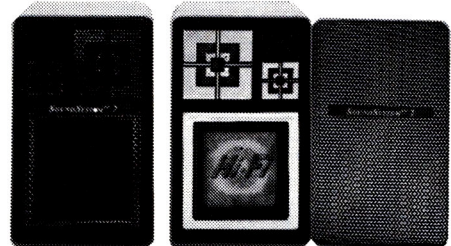
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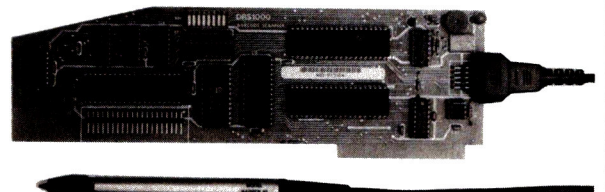
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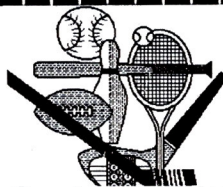
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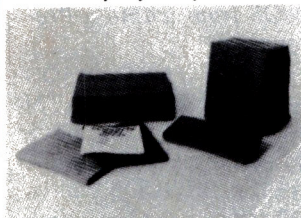
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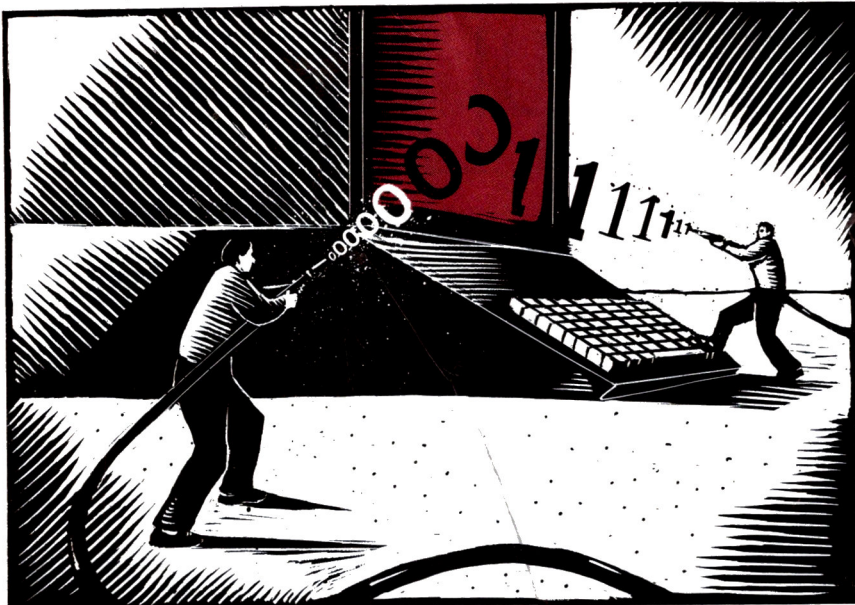
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BY GARY B. LITTLE

VERTICAL BLANKING

Q. I'm looking for more information about the vertical-blanking signal on the IIe, IIc, and IIGS. Is the method for detecting an active signal the same for all these computers?

DOUGLAS B. EAMON
WHITEWATER, WI

A. All three of these systems have a softswitch at location \$C019 that you can inspect to determine whether the video screen has been blanked for the vertical-retracing operation. On the Apple IIe and IIc, bit 7 of the location is 0 during the retrace period, but on the IIGS it is 1. If you're writing a program that uses this softswitch, you should include code that determines what type of system is present at run time so that it can interpret the switch status correctly.

The vertical-blanking softswitch is important to programmers writing animation programs. Such programs should change data on the screen only when the screen is blanked; if the screen isn't blanked, the image will flicker.

Another technique animators can use is to enable a vertical-blanking interrupt signal and respond to the interrupt by drawing a graphics frame to the screen. This

type of interrupt is available on the IIc/GS and on a IIe with a mouse card installed.

DECIMAL-TO-HEXADECIMAL CONVERSION

Q. I need to convert decimal numbers to hexadecimal numbers from within an Applesoft program. Can you provide me with a subroutine that will do the job?

PHILLIP HERBAS
DALY CITY, CA

A. If you call the subroutine in figure 1 with the decimal number in the N variable, the result comes back in the HX\$ string variable. The subroutine works only with num-

bers from 0 to 65535, and the result is always four hexadecimal digits long.

ProDOS 8 AND GS/OS

Q. I have a IIGS and a hard-disk drive, and I've installed GS/OS on it, even though I still run a lot of ProDOS 8 applications, such as the original AppleWorks. My problem is that I often want to run one of these ProDOS 8 applications without having to wait for GS/OS to boot and the Finder to start up. Is there any way I can boot ProDOS 8 instead of GS/OS? And can I start up GS/OS from within a ProDOS 8 environment?

VERN WILSON
NASHVILLE, TN

A. There is a solution, but you have to copy and rename some files. First, rename the PRODOS file in the root directory of your hard disk as GS.OS, copy the P8 file from the SYSTEM subdirectory to the root directory, and then rename P8 as PRODOS. Next, place your ProDOS 8 startup program—a system program with a name ending in .SYSTEM (ideally a selector program such as Glen Bredon's ProSel or Pinpoint Publishing's RunRun that provides you with a menu of programs to launch)—into the root directory. Make sure the selector is the first program in the directory with the .SYSTEM suffix. When you next boot the system, the ProDOS 8 selector program takes control right away. With it you can run any ProDOS 8 programs you like. If you want to start up GS/OS and the Finder, just run the GS.OS program (the old PRODOS file). +

Gary Little is manager of technical references and special resources in the Developer Tools Group at Apple Computer, Inc.

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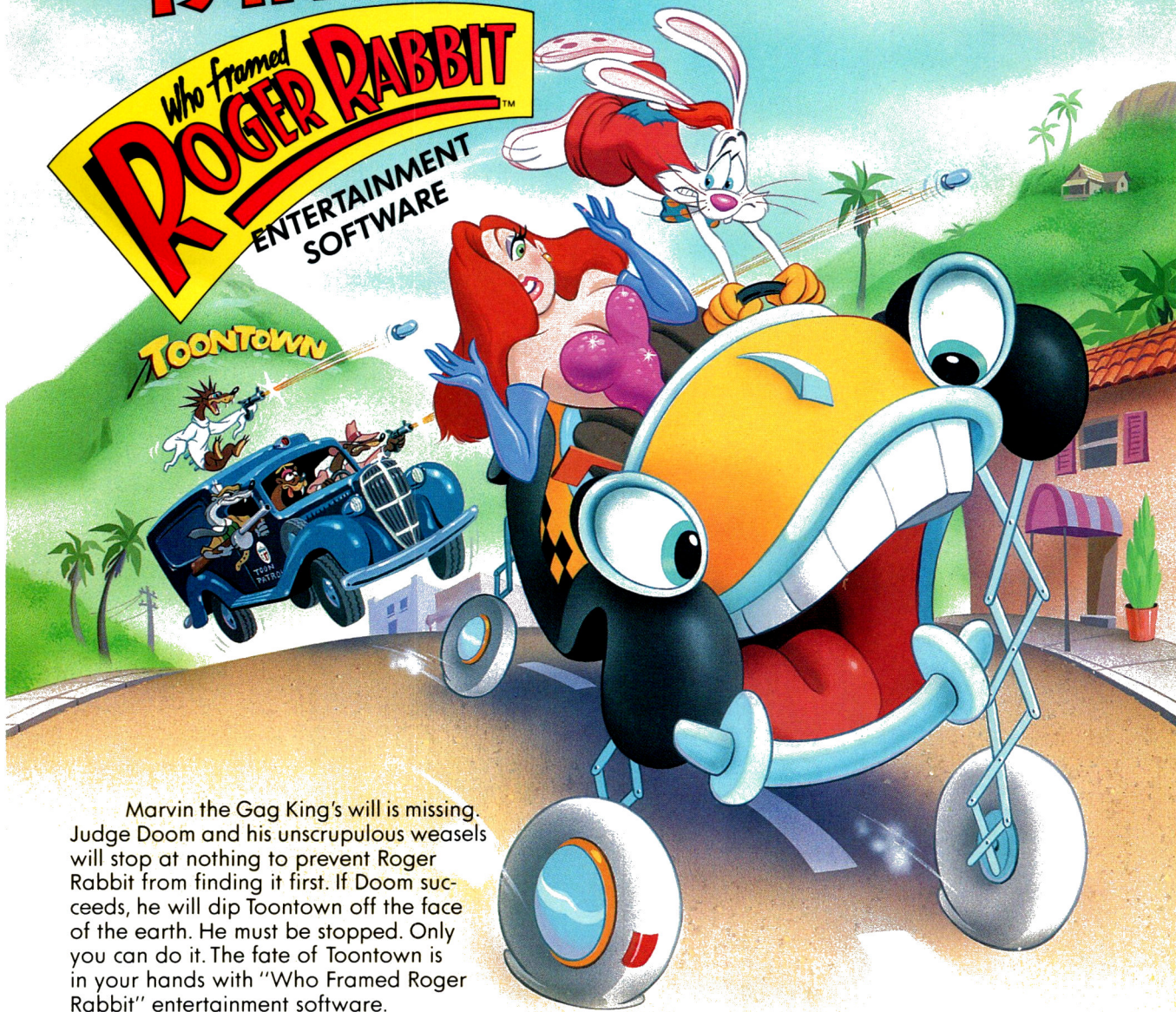
100 REM Enter subroutine with number in N
110 REM Result is returned in HX$
120 H$="0123456789ABCDEF"
130 DV(4) = 4096:DV(3) = 256:DV(2) = 16:DV(1) = 1
140 HX$="": REM Clear result
150 IF N > 65535 THEN 220
160 J = 4
170 FOR I = 1 TO 16: IF N - I * DV(J) < 0 THEN 190
180 NEXT I
190 HX$ = HX$ + MID$(H$,I,1)
200 N = N - (I - 1) * DV(J)
210 J = J - 1: IF J > 0 THEN 170
220 RETURN

```

Figure 1: Decimal-to-hexadecimal conversion subroutine

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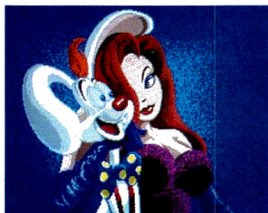
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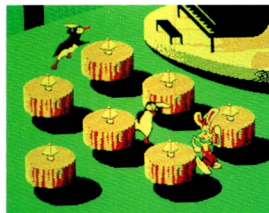
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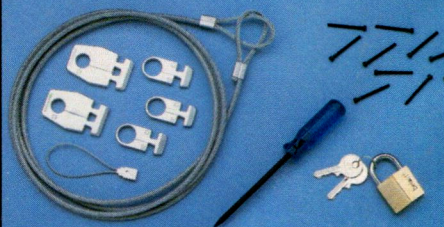
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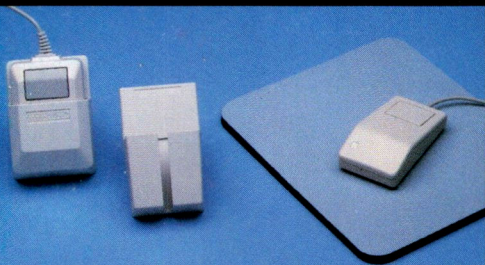
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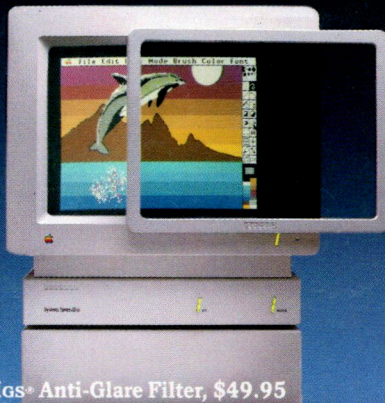
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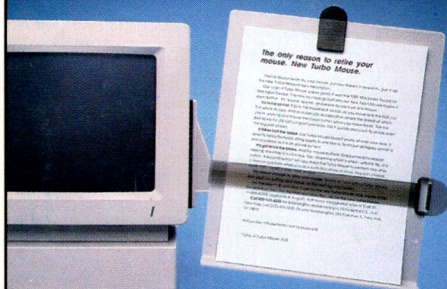
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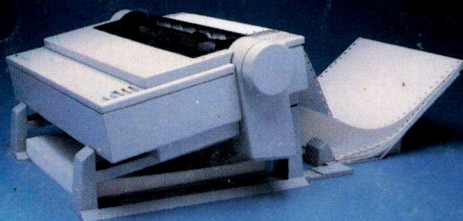
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