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THE APPLE II MAGAZINE

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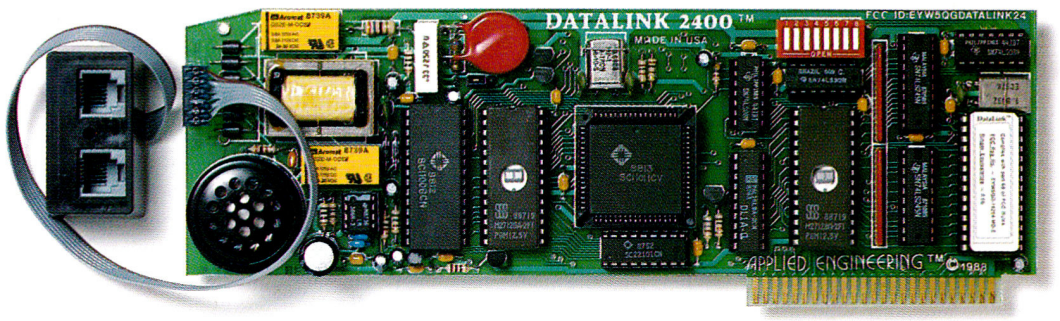
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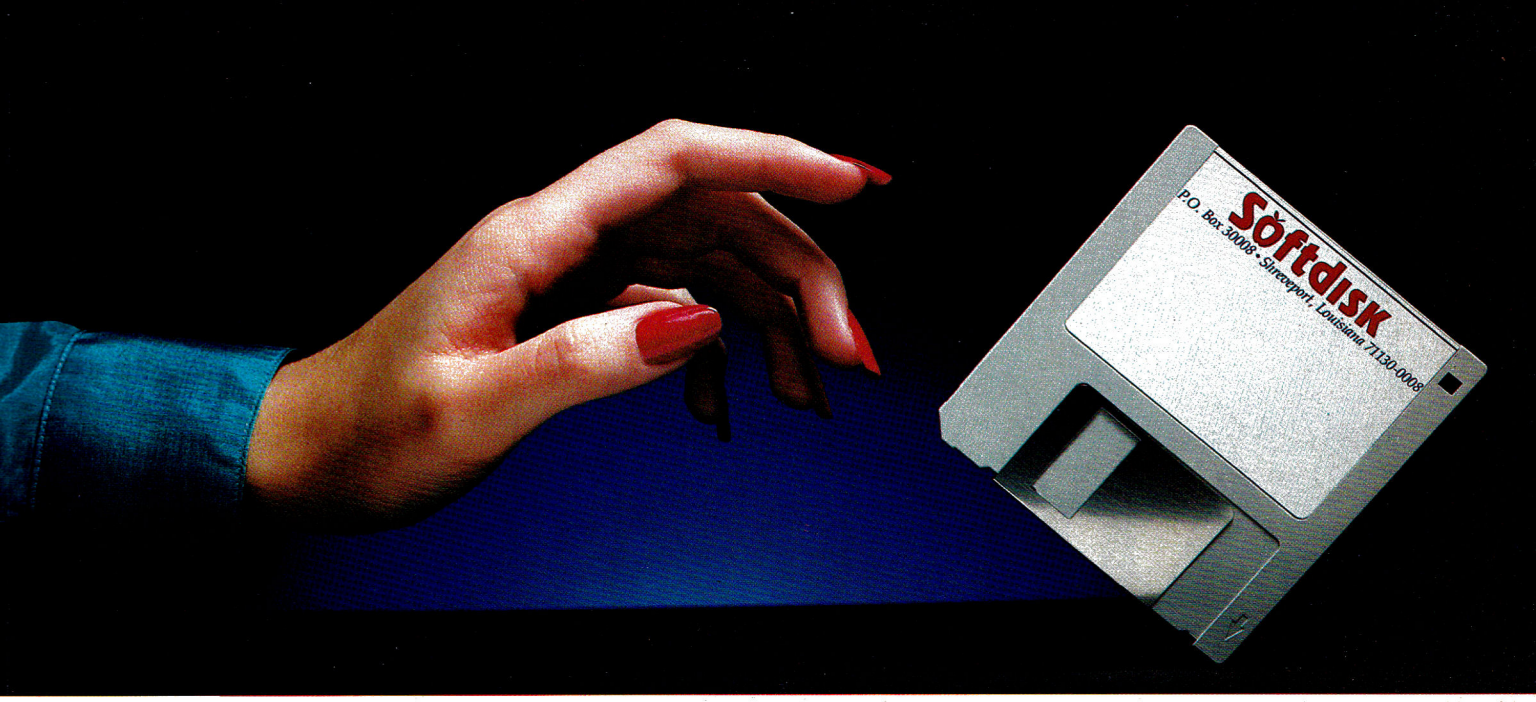
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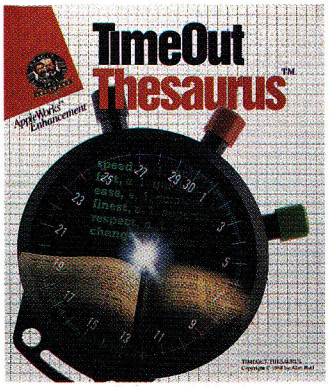
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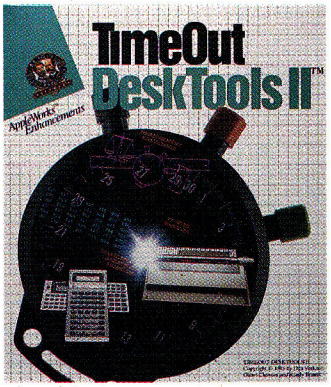
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TimeOut PowerPack™

PowerPack (Editor's Choice, in Cider magazine August 1988) includes ten new applications that add more muscle to AppleWorks:

TRIPLE DESKTOP allows up to 36 files on the desktop (instead of just 12).
TRIPLE CLIPBOARD creates three independent clipboards.
PROGRAM SELECTOR lets you run other programs and automatically return to AppleWorks.
LINE SORTER alphabetizes lists of words or numbers in the word processor.
HELP SCREENS let you make your own customized help screens.
FILE LIBRARIAN reads your disk directories into a data base file where you can search and sort on any category.
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CATEGORY SEARCH lets you search one particular category instead of all.
AWP TO TXT saves true text without all those unwanted carriage returns.
ASCII VALUES converts numbers to ASCII, hex, binary and screen equivalents.

TimeOut DeskTools II™

DeskTools II adds all kinds of goodies to AppleWorks:

AREA CODE FINDER shows you area codes for the U.S. by city or state.
CALCULATOR PLUS is an extremely powerful financial and scientific calculator.
CLIPBOARD VIEWER shows you the current contents of the clipboard.
MEASUREMENTS converts metric, decimal, length, weight, liquid, time, etc.
DIRECTREE shows where your files are stored on disk and lets you load them without specifying prefixes or pathnames.
DISK TESTER verifies your disk.
FILE SEARCH finds the phrase you're looking for in any file on disk, fast.
PRINTER MANAGER lets you send any control codes you want to your printer.
SCREEN BLANKER prevents screen burn-in by blanking it when not in use.
SCREEN PRINTER lets you print any portion of the screen.
STOP WATCHES keep track of up to five separate events at the same time.

TimeOut SpreadTools™

SpreadTools is packed with new applications designed especially for AppleWorks spreadsheets:

ANALYZER lets you scan your spreadsheet for errors, print out a cell cross reference, get a bird's eye view of the entire spreadsheet, adjust column widths to show entire formulas, track down cell references, and print the value of all cells.
BLOCK COPY lets you copy blocks of cells (rather than just rows or columns).
CELLINK links spreadsheets so you can import values from other spreadsheet files.
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QUICK COLUMNS lets you set column widths fast.
ROWS < — > COLUMNS lets you convert a row into a column or vice versa.

TimeOut MacroTools™

In addition to the original MacroTools (Macro Debugger, Task Launcher, Menu Maker, Token Chart, File Stats, and lots of new macros), there's also MacroTools II which has still *more* for all of you macro maniacs including Publisher, File Lister, Macro Lock and tons of new macros.

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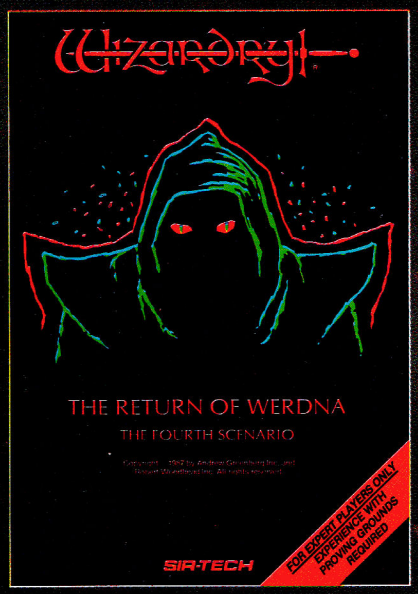
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inCider (ISSN #0740-0101) is published monthly by IDG Communications/Peterborough, Inc., 80 Elm Street, Peterborough, NH 03458. Phone: (603) 924-9471. Second-class postage paid at Peterborough, NH, and additional mailing offices. (Canadian second class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

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All taxes and other expenses not specified herein are sole responsibility of winners. All winners will be notified in writing.

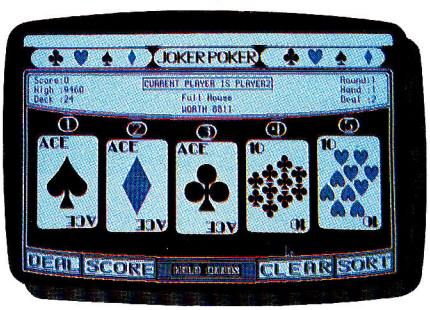
Aussie JOKER POKER is available for SIX major PC's

If your PC has a mouse or keyboard, a mono or color monitor and a 512K minimum ram (except Apple II and C64/128 use 64K and keyboard only) you and your family can practise at home for the Las Vegas final of the **Aussie JOKER POKER contest.**

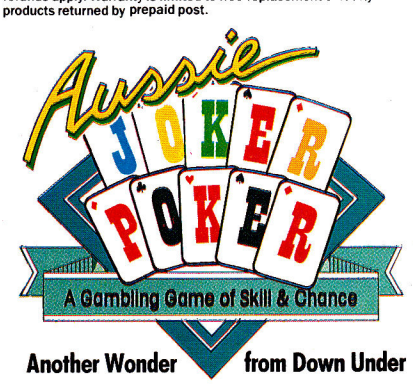
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Aussie JOKER POKER Contest Rules

1. No purchase necessary to enter.
2. Void where prohibited by state or federal law.
3. To enter, simply complete and return the the official entry form.
4. Limit five entries per family or household. Five free entry forms and full contest rules are included with "Aussie Joker Poker" or may be obtained by sending a stamped self-addressed envelope larger than 5½" × 7½" with a hand written request to: Aussie Joker Poker Contest Entry Forms, P.O. Box 22381, Gilroy, CA 95021-2381. Mail-in requests limited to one per name, household or family and must be received no later than 3/31/89. WA & VT residents need not include return postage. Full rules also available from participating Mindscape retailers.
5. Monthly entries must be received no later than the last day of the month in which a drawing will take place in order to participate in the month's drawing. Drawings will be held from December, 1988 through April 1989, inclusive. Final entries must be received by 4/30/89.
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7. Odds of winning depend on number of eligible entries received.
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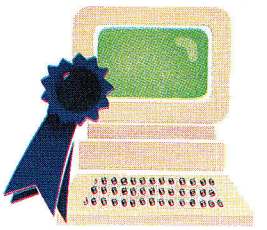
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inCider

AN IDG COMMUNICATIONS PUBLICATION

Vol. 6 No. 12
December 1988



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40 Top Ten Software Products
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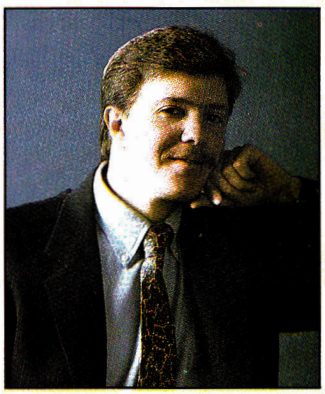
by Dan Muse, Editor in Chief

We've just returned from AppleFest/San Francisco, and as we sort through the mountains of press releases we've accumulated, shake off jet lag, and wait for our lost luggage, we're wondering whether or not AppleFest was a success.

Attendance was about what we expected. And people seemed genuinely excited about their Apple IIs—whether the II Plus, IIe, IIc, or IIGS. AppleFest was like one of those "good news, bad news" stories.

The *good news* is that people are finding more reasons to buy Apple IIs, especially the IIGS. The quality of home-education, productivity (especially desktop-publishing), and entertainment software is improving as developers learn how to take better advantage of the GS as well as push the 8-bit IIe and IIc even further.

The *bad news* is that AppleFest was held under the shroud of price increases, which Apple announced only a couple of days before the show opened. Even though you already own an Apple II, these price increases still affect you. Software companies decide on the systems for which they'll develop by the number of people buying a particular computer. Apple's price increases are consistent across the II and Macintosh lines, with the exception of the IIe and Mac Plus, which are staying the same. Still, it seems that Apple is inviting Tandy and other manufacturers of low-cost MS-DOS computers to take the home/education and home/office markets. In the end, that translates into fewer Apple II sales, which means you'll have to wait longer for new II software to become available.



"Maybe writers are too cynical. The good news from AppleFest far outweighs the bad."

The *good news* is that Apple demonstrated its commitment to the II by announcing a new computer. The *bad news* is that the new Apple II is the IIc Plus—the answer to a question no one was asking. Apple isn't surprised that cynical writers and editors aren't impressed by the IIc Plus. However, you—the public—also seemed underwhelmed. Questions such as "Where's the portable GS?" "Where's the 65816 processor?" "What's the point?" weren't coming only from the press. Important people (potential customers) were just as puzzled.

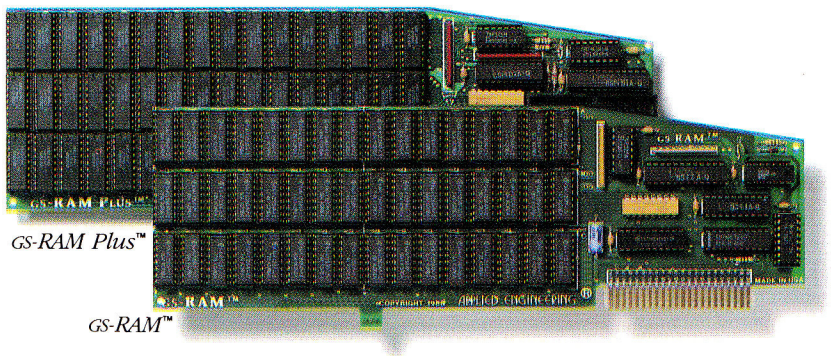
The *good news* is that GS/OS (a.k.a. System Disk 4.0) is here—no time for a cup of coffee and the morning paper while you're waiting for your GS programs to load. The *bad news* is that it's only a shell of what it will be. Right now the only file format it recognizes other than ProDOS is High Sierra. An interesting announcement, since CD-ROM is hardly a household phrase in most Apple II families. You can, however, look forward to the ability to read Mac and MS-DOS files in the future.

The *good news* is that AppleWorks GS seems close to shipping. GS/OS will help make it more manageable (for example, cut the launching time). The *bad news* is that Claris is packaging the most powerful program in Apple II history in a box that looks as though it's designed for Saturday-morning-television viewers, not the small-business, home-office types who'll get the most from this program. When you walk into your local computer store, remember: You can't judge a program by its package.

Maybe writers are too cynical. The good news from AppleFest far outweighs the bad. Cambridge Marketing (sponsors of AppleFest) reports that 25,000 Apple II enthusiasts attended the three-day conference and that more than 100 new products were announced. Despite price increases and Apple's dubious decision to release a new II that offers no new technology, AppleFest continues to give the Apple II market a needed shot in the arm.

To the thousands who attended AppleFest/San Francisco and to the millions of II users around the world, the slogan "Apple II Forever!" still means something. And even a cynical editor with jet lag can't find any bad news in that. ■

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 capacity [1] 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.

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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 computer'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.

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

Steve Wozniak, the creator of Apple Computer.

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1 Cards with more than 4 banks of RAM 2 When purchased from Applied Engineering or thru a participating dealer

Remember when this board meant power and speed?



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

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

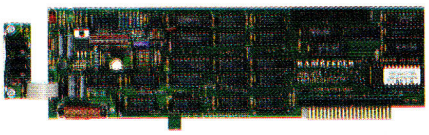
Applied Engineering's RamKeeper. A system that works like a hard disk, only better. It retains stored programs *and* data while your computer is turned off (like a hard disk), but gets up and running five times faster. RamKeeper is solid state, has no moving parts and, unlike a hard disk, has no heads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

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

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

Superior power backup.

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



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

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

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

Powers two memory cards in the same slot.

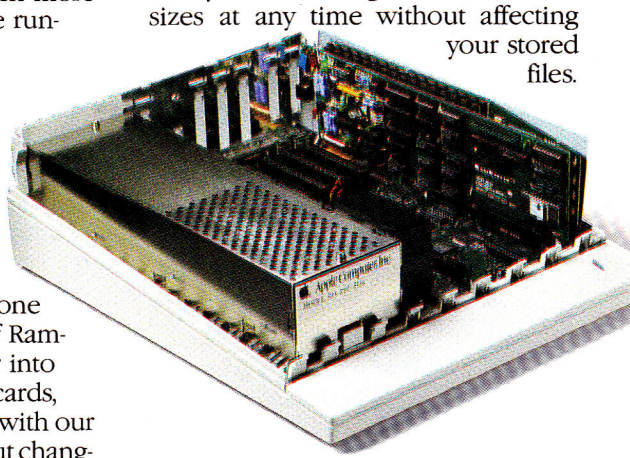
Have Apple's memory card, but now want the features of Applied's GS-RAM card? With RamKeeper, both cards act as one larger card. In one slot. Just attach one memory card to each side of RamKeeper and plug RamKeeper into the slot. And even with two cards, you can still keep slot 7 open with our optional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

RamKeeper also works fine with only one memory card.

Makes all your memory usable memory.

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

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



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

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Protect from program crashes.

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

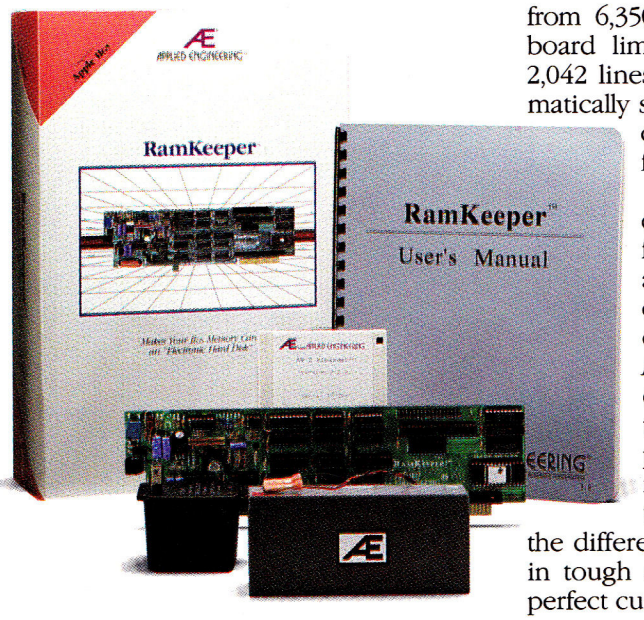
Verifies data security.

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

Significant differences.

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

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



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

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

Free AppleWorks Enhancement software.

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

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

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

Only $189.

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

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LETTERS

Educating the Masses

Having taught in the New York City school system for 21 years, I disagree with your September editorial, "The Age of Enlightenment" (*inCider*'s View, p. 8).

I've devoted the last five years to mathematics and computers and have read a lot of literature concerning the computer's role in the classroom. Tom Snyder suggests using the computer as a *tool*. However, I think the trend that's likely to become standard is using the computer as *tutee*, whereby the student "teaches" the computer by programming it. The leading thinker of this method, Seymour Papert of M.I.T., claims that when the child's in charge of the computer, he or she solves problems creatively; a new thinking process develops, thanks to the computer.

I agree with Snyder that a teacher should have one computer at his or her disposal. However, students should be involved with more than the dull, repetitive drill software I've encountered. Unless you use the computer creatively, teachers will relegate it to the AV closet with the rest of the gimmickry that has been foisted on us.

Woody Elmore
3268 Perry Avenue
Bronx, NY 10467

After enduring much of the negative publicity aimed at education, your September editorial made me feel that it's still worthwhile to enter the classroom for the 34th time this fall.

I still enjoy teaching and joined the computer generation about four years ago. I started on a TI-99/4A for programming student averages and records in BASIC. Two years ago I purchased an enhanced Apple IIe with a Duo-disk drive and an ImageWriter II. I felt as if I'd gone from the horse and buggy to the jet age.

While there's a big emphasis on the business aspect of computers, not everyone is going to rush out and buy a machine with 4 megabytes of memory. Children still need a machine that lets them do word processing and programming within their capabilities.

Dorothy J. Cordes
718 West North Street
Girard, IL 62640

A Black Plague

I'm the developer of Z-Link, a communications program for the Apple II, which I've distributed as shareware since October 1987. It's also been available on GEnie as of January 1988.

Sometime around July 20, GEnie's library manager received a complaint stating that Z-Link had somehow affected someone's disk. According to this individual, when he CATALOGed by any method, the disk looked fine, but when he examined the disk from APW, the disk was damaged. He suspected the culprit was a virus running within Z-Link, because he'd recently run that program.

It turned out that this copy of Z-Link, which he acquired from a local BBS, was actually titled Z-Link Plus. When GEnie's library manager examined the code, he found a destructive virus present. After the virus runs 15 times on the same disk, it writes $FFs throughout the volume directories of all disks on line. It also performs other minor damage.

Anyone using the program Z-Link Plus, or possessing a copy of Z-Link of dubious origin, should promptly delete it and send me a self-addressed, stamped envelope with a disk for a clean copy of Z-Link. I'd appreciate your including the shareware fee also. The disk you'll receive will contain the latest version of Z-Link and two virus-checking programs written by two other programmers. One program checks specifically for CyberAIDS and Festering Hate, the viruses harbored in Z-Link Plus; the other is a general-purpose checker running only on the GS.

Mail on some BBSs claims that I wrote Z-Link as a front for the virus. This is false. If you can offer any information on the perpetrators, I'd appreciate your assistance in apprehending them.

David Whitney
450 Memorial Drive
Cambridge, MA 02139

Seoul of a New Machine

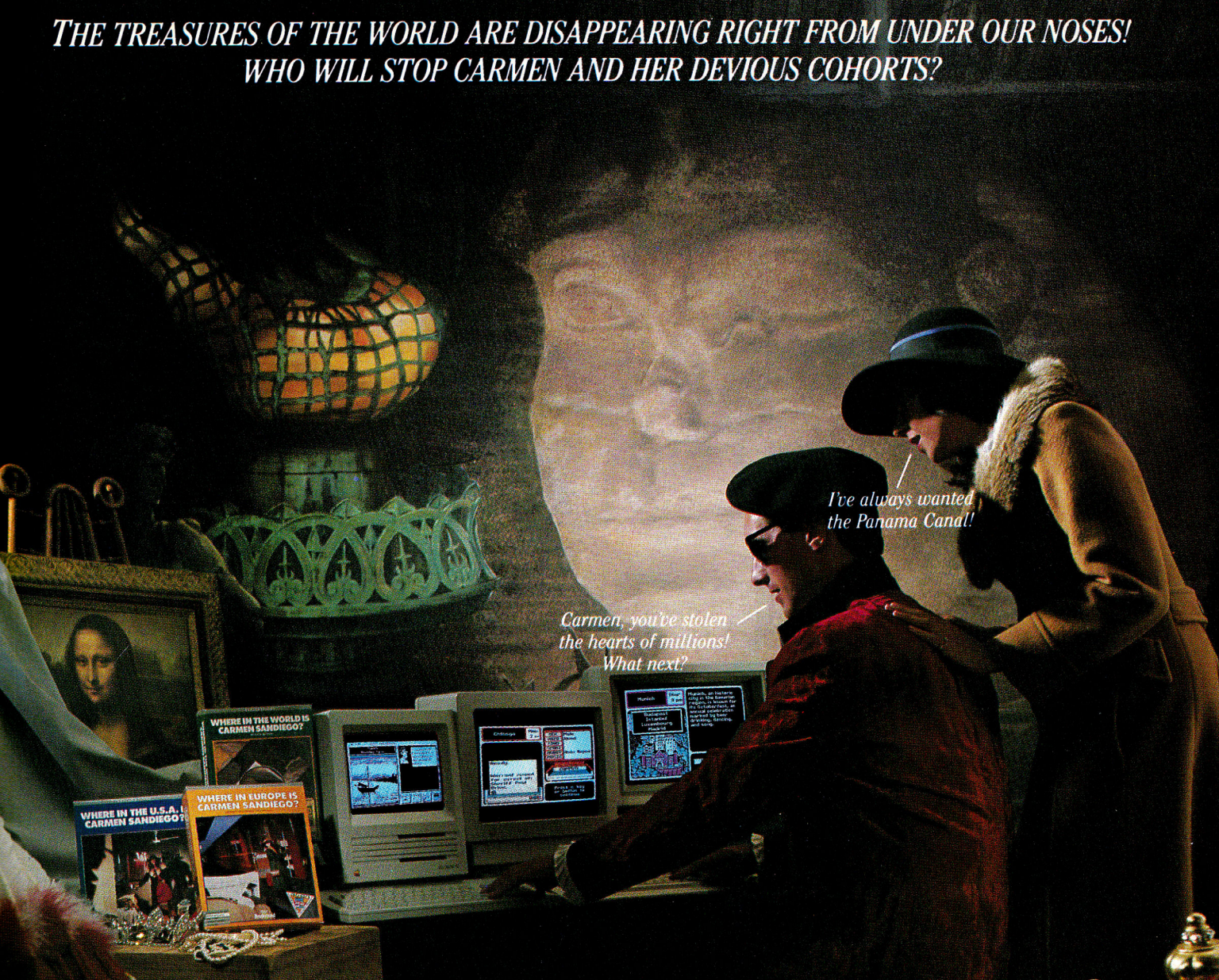
I'm an Air Force member currently serving in the Republic of Korea. My wife, who's a Korean national, is studying English. It would be a great advantage to use our GS to compile both Korean and English vocabulary lists along with their respective translations.

The problem is that the Korean alphabet, Hangul, consists of various characters that have no equivalency to any European language. I'm aware of a few Hangul programs and I know that the Koreans have an AppleWorks equivalent in Hangul, mainly for businesses in Seoul. However, I don't know of any programs that can mix both English and Hangul characters and I can't even hope for one that would also incorporate Chinese characters, which Korean (and Japanese) newspapers use sporadically.

I think Claris is missing a large market overseas. Many Koreans studying English would benefit from such a program. Even Korean magazines use English words in various articles. The eyes of the world are upon Seoul this year; why are software developers ignoring this emerging nation's market?

Sgt. Lonnie E. Kinder
Osan AB, Korea
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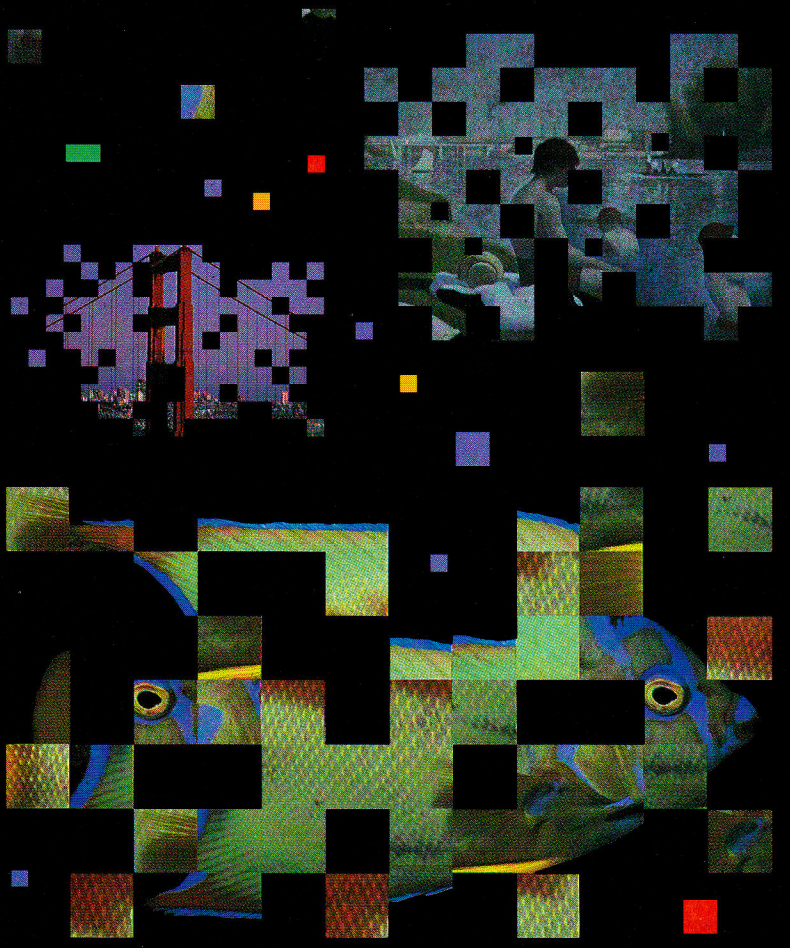
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LETTERS

What the Blazes

I use Publish It! to produce a biweekly newsletter for my fire department. My only problem is that I can't find any fire-related graphics to use with either Publish It! or The Print Shop. Do you know if there's a software company that has such graphics available?

John E. Fredricks
2736 Knollwood
Casper, WY 82604

Cynthia Field recommends looking through the Steele Gazette *from Steele Publishing (P.O. Box 5493, Concord, CA 94525, 415-685-7265). This catalogue shows the pictures, including fire-related graphics, that appear on the disks. Priced at $10–$13 each, these disks work with a variety of programs, including The Print Shop, Publish It!, and The Newsroom. —eds.*

Apple Grants

I've taught art in Chicago for 19 years and want to integrate computers into my art classes. However, because of the Board of Education's limited financial resources, the only way I can teach computer graphics is to obtain a grant for the computers. Is there a particular person at Apple whom I can contact? Also, are there any foundations interested in the arts and technology?

Aiko Boyce
1122 South Humphrey Avenue
Oak Park, IL 60304

Contact Apple's community-affairs department at (408) 973-2974 and ask for grant information. —eds.

On the Inside

Your answer to Christian Wassan's question about internal hard drives for the IIGS (Letters, August 1988, p. 13) failed to answer one all-important question: Is anyone working on an internal hard drive for the GS? If not, why not?

On the surface, it appears to be a super idea. Is there some basic flaw in the Apple slot architecture that prohibits a product like this? Surely Applied Engineering,

which managed to stuff a PC compatible under the lid of an Apple, can figure out a way to put a hard drive in there!

Alan Graff
Route 1, Box 40
Wheelersburg, OH 45694

An Apple by Any Other Name

I appreciate the publicity you gave *The Road Apple* in September's Apple Bits (p. 17). However, your reference to "*pommes de terre* department" translates as *apples of the earth*, or *potatoes*.

Al Martin
The Road Apple
1121 N.E. 177th
Portland, OR 97230

C'est la vie. —*eds.*

Computers and the Disabled

I'm a paraplegic who's researching how computer technology has affected the disabled person's social, economic, recreational, educational, and health aspects of his or her life. I was injured in 1958 when I was 12 and have grown up seeing the advances in these areas. To date, no one's performed a study compiling this information, which government, education, or private business could use to further help the disabled.

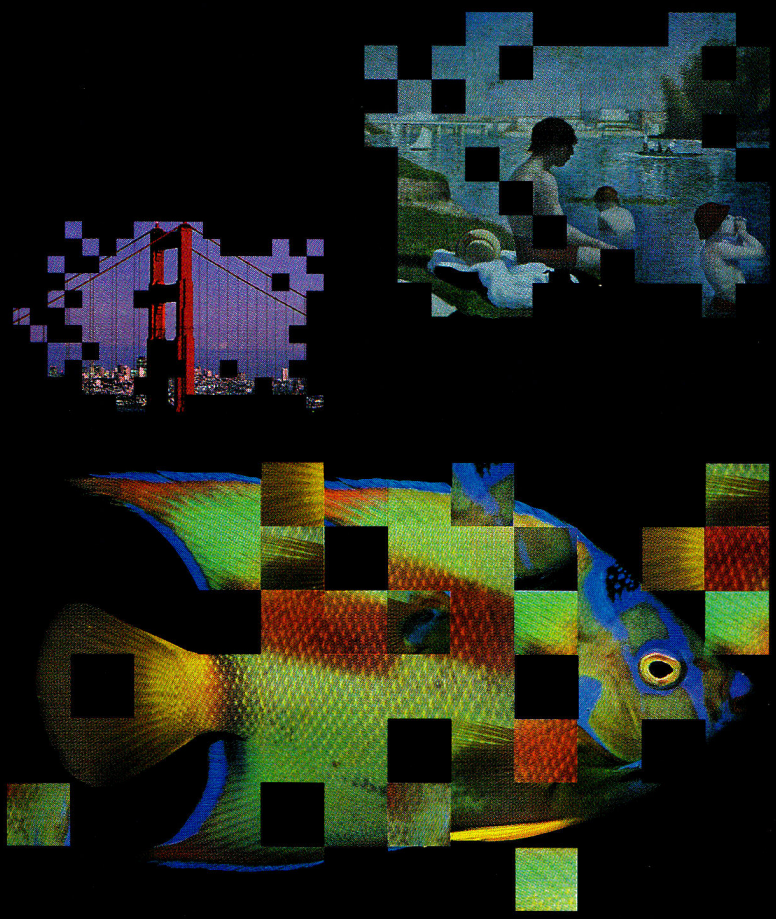
I'd like to hear from anyone who's disabled and learn what the computer has done for him or her. Also, I'd appreciate donations from anyone who's interested in helping.

John Ellis Prather
Director
Handi-Techs of Oklahoma Foundation
2404 Bellaire Drive
Moore, OK 73160

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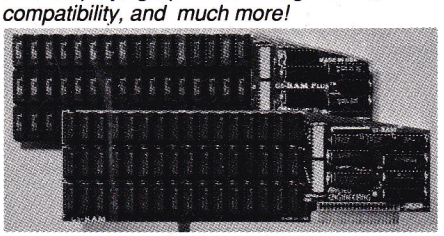
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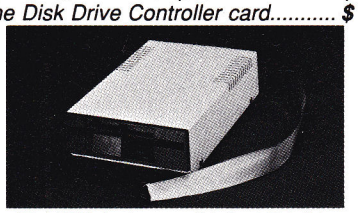
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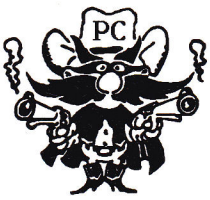
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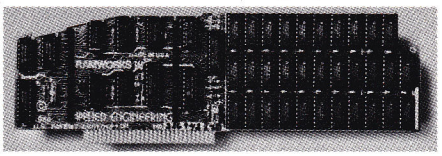


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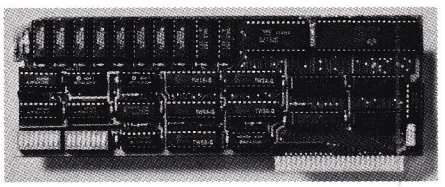
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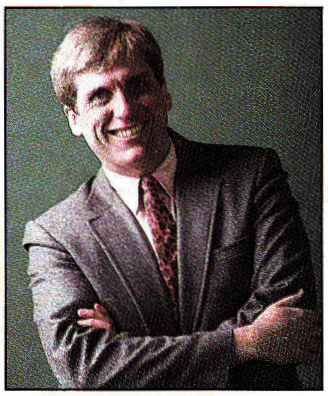
In the Magazine Marketing Hall of Fame a small plaque is dedicated to "the suckers who'll buy it if it's printed—magazines about expensive hobbies, science books for specialists, and foreign newspapers in languages they don't understand." My name is at the top of the list.

I'll read anything. The next big thing in computer software may prove as dangerous to us magazine junkies as the repeal of Prohibition was to alcoholics.

I'm talking about desktop publishing. If I thought it meant user-group newsletters, holiday greeting cards, and Apple's annual report, *inCider*'s desktop-publishing contest sure proved me wrong. We received more than a thousand entries (winners on p. 17 in this issue), and believe me, nothing is too far out for desktop publishing. I read 'em all.

I thought desktop publishing as it applies to religion meant printing church bulletins. But *The Church of Bob*, a.k.a. The Church of the Subgenius, has no house of worship. Founder John Robert (J.R.) "Bob" Dobbs of Dallas, Texas, proselytized for his church in bad science-fiction movies in the '50s. He was a screenwriter, and would slip one of his commandments past the censor—something like "Think for yourself, but be in by 10:00," or "You'd pay to know what you really think." "Bulldata," Bob calls it. It's dangerous reading for a junkie, so I put down *The Church of Bob*.

Desperately seeking the mainstream, I picked up the *B'hai Newsletter for the North Dakota Area* (Minot, North Dakota). The B'hais are nice people. All I know of their religon is that they believe in strict tolerance of everybody else's, and that they aren't afraid of science. There aren't many B'hais anywhere, and few in North Dakota—fewer every month, according to the newsletter. I'm curious: Why isn't a religion that believes in peace on earth more popular?



"Believe me, nothing is too far out for desktop publishing."

I perused *Religion and Politics*, a journal published at the University of Florida in Gainesville, and looked for a clue. I didn't find the answer in that issue, but maybe next month. *Religion and Politics* was scholarly enough, but, as a layman, I liked its light touch. I'd never noticed that Jessica Hahn's hometown was *Babylon*, New York—had you?

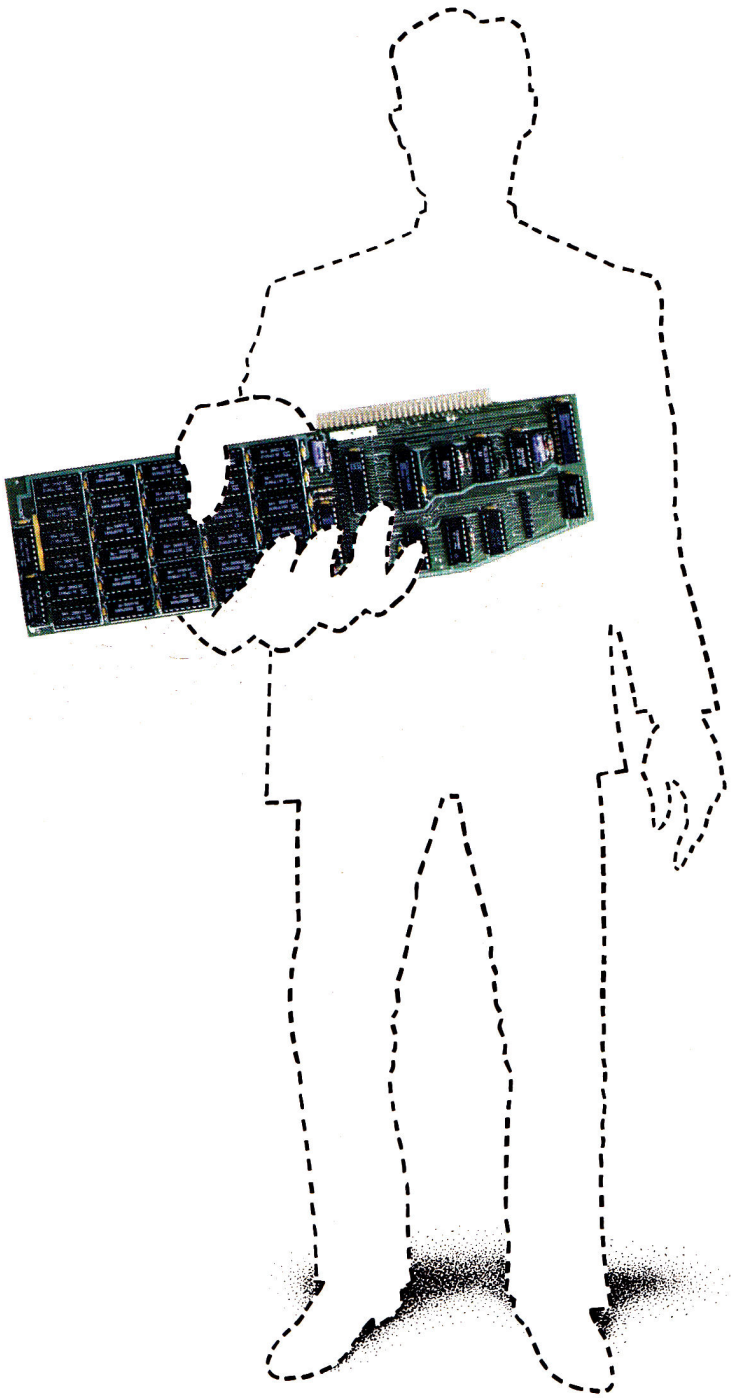
You probably remember less of Pomerania than you do of Babylon—it's one of those ill-fated Baltic states that Germany and Poland divvied up after the Second World War. But *Die Pommerschen Leute* (*The Pomeranian People*) remember: It's a newsletter for American immigrants, published in Oshkosh, Wisconsin.

I'd just as soon forget about "heavy metal" rock and roll, but I succumbed to my addiction and read *The Rock Street Journal*, from Brownsville, Tennessee. I skipped through the reviews of Mega-Death and Poison, although they looked opinionated enough to please an *inCider* editor, to read the editorial. It contained a rational argument for the introduction of digital audio tapes in this country. But wait, I thought we didn't teach kids to write or think in our schools anymore. Where do they pick it up?

One reasonable editorial isn't exactly literature, but at Hawthorne High School in Lorain, Ohio, the literature club publishes *Sorta Shakespeare*. It wasn't timeless prose, but "The Ghosts of Hawthorne" had me wondering about things that go bump in their halls, even though I've never been there. These kids know how to write.

In the old school, kids *did* learn to write. I read about those classrooms in *Memories of Santa Rita*, which came from Silver City, Nevada. Note the address: Santa Rita was a mining town that was stripped away with the copper. It exists only in the memory of its former residents, one of whom, Paul Jones, wrote a book. There's something compelling about "lost cities," especially if they disappeared in this century.

What these publications have in common is that they're not for everybody—they're the opposite of *USA Today*. We live today in a "global village": We watch the same TV news, read the same newspaper, and I fear, are beginning to think the same thoughts. But with a personal computer you can cook up some "home-baked" news. Desktop publishing isn't for everybody: At its best, it's a magazine for you, a few close friends, and a handful of addicts. Thanks for sharing yours with me; I enjoyed it.■



Don't buy a memory today from a company that may be a memory tomorrow.

Most of the companies making memory boards three years ago have gone out of business. That's why it pays to think not only about what you're buying, but whom you're buying from.

First, what happens if something should fail on the board? Or you just can't get it to work? If the company that sold it isn't there to support it, your board becomes a rather unattractive paperweight.

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Putting Your Disks in Order

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

/RAM5 I/O Error

When I use the System Master version 3.1 Finder program on my IIGS to copy multiple files to the /RAM5 disk, I occasionally get the message, "An I/O error has occurred...." This happens when I try copying 13 or 14 files/folders at a time. Applications such as AppleWorks that have fewer files work fine. I took everything to my dealer who told me that the problem is universal but only with the Finder. The System Utilities copy option works fine. What's going on?

David Huinker
Virginia Beach, VA

I, too, and I'm sure many others, have observed the /RAM5 copy problems you've encountered. You may also have noticed that you can't "trash" the contents of /RAM5 after that offending I/O error.

The Finder's inability to copy multiple ProDOS files or subdirectories (folders) correctly isn't related to the number of files involved, but rather to the memory juggling associated with the transfer. The RAM disk named /RAM5, as you know, occupies part of your GS' system memory. You can use the Control Panel RAM-disk option to adjust the minimum and maximum amounts of memory set aside for /RAM5.

One of the most common settings, and I suspect yours also, is to specify a minimum size of 0K RAM so that your GS doesn't use precious memory until it's needed. (Even so, 4K of RAM is automatically allocated when /RAM5 is initialized during the boot process, unless the maximum parameter is also set to 0K.)

I'm sure you've noticed that when you copy several files and folders simultaneously, the Finder first loads them into memory, then saves each on the target volume—/RAM5 in this case. The I/O error, therefore, results from conflicts between the RAM allocated by the GS' Memory Manager for the copied files or folders and that for /RAM5.



Jan Muller

The solution? Using the Control Panel RAM-disk option, set the minimum *amount of RAM allocated for /RAM5 to just over the amount of memory you'll need for the files or folders you want to copy. This protects memory from intrusion and now all's well.*

For example, to copy the entire contents of the IIGS System Master version 3.1.1 into /RAM, set both the minimum and maximum RAM-disk allocations to 768K.

Fragments

I recently purchased a hard-disk drive for my Apple II system. For the first two weeks it worked quickly. Then I began to notice that the file-access times were deteriorating, slowing in the next month of use to where they are now—requiring more than 30 seconds to save a 5K file when a month ago it took only a second or two.

I demonstrated the problem to my dealer, who mentioned disk "fragmentation" problems common to high-capacity drives. He also told me that it's possible to "defragmentize" Macintosh hard disks but didn't know any way to cure it on my Apple II. Do you know of any?

Tan Wu Meng
Singapore

File "fragmentation" with the resulting degradation of data-access speed doesn't occur solely in "high-capacity" drives. Just about all devices capable of writing and erasing data, including floppy disks, are susceptible. You're noticing a slower access time only because of your hard disk's vast storage capabilities.

In order to utilize all space available on a disk, ProDOS segments files into "blocks" of 512 bytes each. Your 5K file, for instance, is partitioned into ten blocks (two blocks per kilobyte) before it saves it. Fragmentation occurs when ProDOS uses file blocks to fill the gaps that occur after it has repeatedly saved many files of different lengths. A file's blocks can literally become scattered all over the disk.

Why does fragmentation degrade the access rate? To locate a particular block, the disk drive's read/write head, much like a phonograph stylus on a record, must move laterally along the disk's radius, and the disk must spin to the correct portion where that block exists. Because such mechanical adjustments are slow, you can easily understand why assembling sequential blocks is so much faster than loading or saving a fragmented one.

There are some public-domain utilities out there similar to the one you mentioned for the Macintosh computer that'll "defragmentize" the files on your hard-disk drive. Check your local bulletin board or user group.

Curing file fragmentation is rather simple, though: Back up your hard disk's contents, reformat it, then copy (don't "duplicate" the volume) the original files back to it. Files saved

for the first time on a freshly formatted disk are essentially unfragmented. You also can use this method to improve the performance of any disk—an AppleWorks data disk, for example, that you use frequently to save/erase data.

IIc Daisychain

I have a "platinum" IIc with an external $5\frac{1}{4}$-inch disk drive. Because $3\frac{1}{2}$-inch drives will eventually replace $5\frac{1}{4}$-inch floppies, I'm considering purchasing a UniDisk 3.5. Can I daisychain a UniDisk to my external drive? Also, can I boot from the external drive? What about from ProDOS BASIC?

Michael LaMorte
Pittsburg, PA

You'll be happy to know, Michael, that you won't have to toss that external $5\frac{1}{4}$-inch drive into the "wave of the future." The platinum IIc, which contains expanded memory, has a "SmartPort" system capable of handling several disk drives, including the Unidisk 3.5. Just make sure you complete the daisychain by plugging the UniDisk into the IIc's external drive port, then your extra $5\frac{1}{4}$-inch drive into the UniDisk's expansion port.

Thereafter, your IIc's internal $5\frac{1}{4}$-inch disk will be located as drive #1, the external one as drive #2, both associated by the SmartPort as "being" in slot #6 (terminology borrowed from earlier IIs, where you actually installed a device controller card into an expansion slot). The UniDisk 3.5 will appear installed as drive #1 in slot #5.

Booting a disk from the external drive is just as easy as long as it runs under ProDOS or Pascal version 1.3 or later. Simply insert the boot disk into the drive and open the doors on all the others. Then turn on the IIc or press Open apple-Control-Reset.

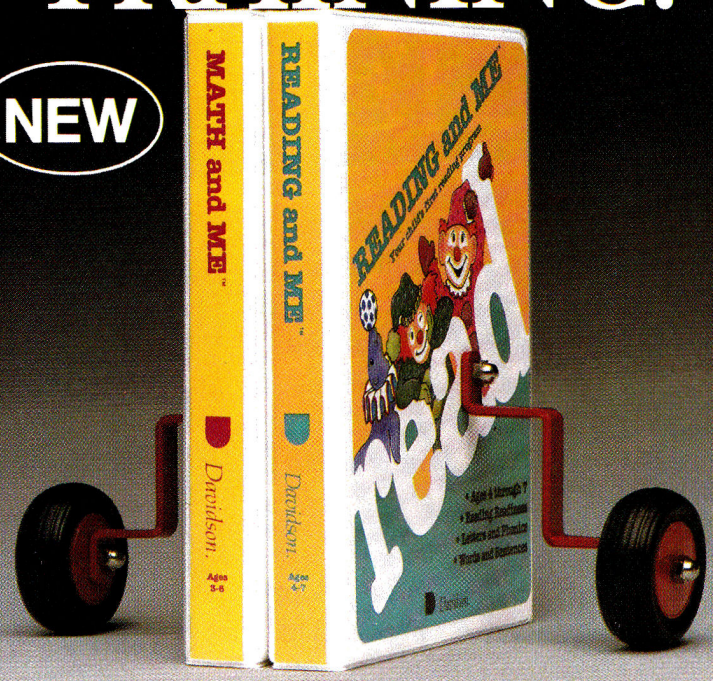
Alternatively, you can boot the external UniDisk 3.5 from BASIC under ProDOS using the command PR#5 or, from the monitor, C500G.

Double-Hi-Res

What's the strange symbol on the IIGS that appears on the same key as the open apple? Also, what does the ProDOS error statement "No Buffers Available" mean? Finally, can you upgrade an Apple II Plus ►

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Circle 62 on Reader Service Card.

to run double-high-resolution graphics programs?

Peter Shadix
Cincinnati, OH

That strange symbol you refer to, Peter, is a throwback to the original Macintosh keyboard. Its function's the same as the open-apple key's—"option." Moreover, many microcomputers label option keys with a "corporate" symbol, such as the "Commodore" key on the Commodore 64 or 128.

Run out of buffers, did we? Actually, the ProDOS adjunct BASIC.SYSTEM generates the "No Buffers Available" error statement. Functioning something like an interpreter, BASIC.SYSTEM accepts commands from BASIC, such as OPEN MYFILE, and converts them to procedures ProDOS can execute.

Creation of file "buffer" space is one of BASIC.SYSTEM's functions. As I've discussed on several occasions, ProDOS saves file data on disk as "blocks." When you open a file with the OPEN, APPEND, CAT, CATALOG, EXEC, or — (dash) command, BASIC.SYSTEM sets aside a 1K area in memory called a "buffer" to hold the file's information. ProDOS puts the corresponding file blocks into the buffer, where BASIC.SYSTEM can then find and process the appropriate data.

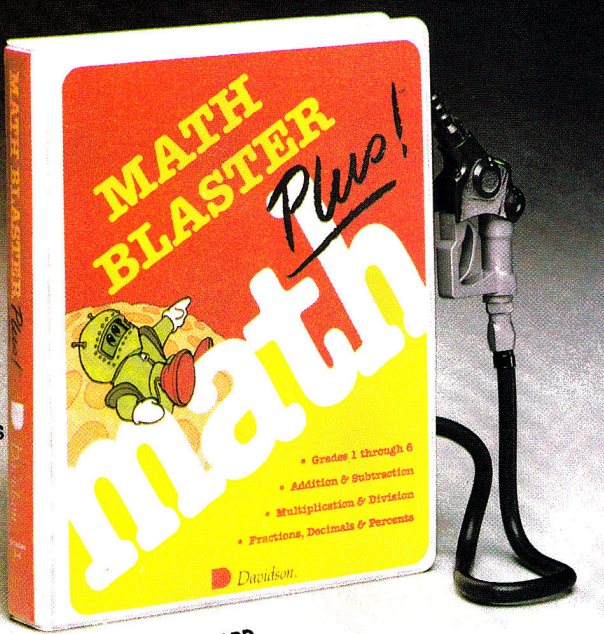
BASIC.SYSTEM sets aside space automatically for one buffer and can normally handle up to eight active buffers. Try to open more than eight and you get the offending message. That doesn't happen often. Rather, buffer space is also dependent on the amount of RAM available at the moment. If your BASIC program is large or uses a lot of variable space, any attempt to allocate more than one or two file buffers also might cause the error.

How to avoid buffer problems? Make sure you CLOSE all files you aren't using. Or, use the CLOSE command alone (leave off the pathname) to deallocate all used buffer space.

Sorry, but you can't upgrade your Apple II Plus to view double-high-resolution graphics. That mode, originally disdained as a visual anomaly from Apple's 80-column text-expansion card, is now available only on the Apple IIc, IIe, and GS. ■

Address your correspondence to Apple Clinic, inCider, *80 Elm Street, Peterborough, NH 03458.*

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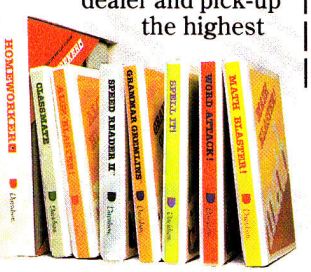
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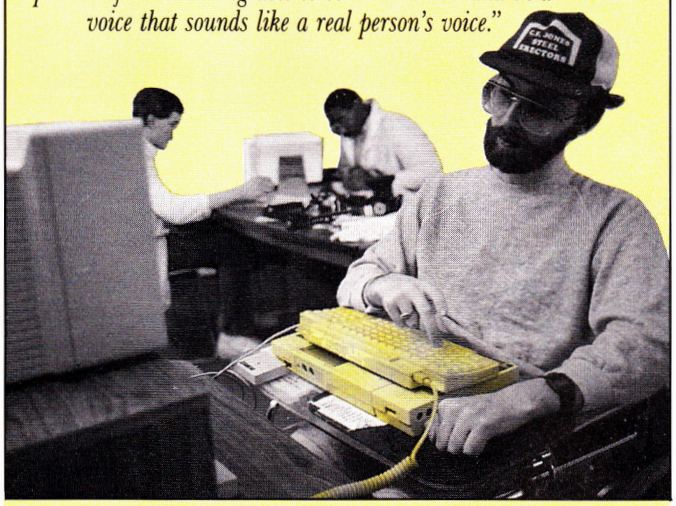
Circle 74 on Reader Service Card.

NEWS LINE

by *inCider* staff

SPOTLIGHT ON.....

"There's nothing that puts a smile on a [disabled] person's face like being able to communicate—and in a voice that sounds like a real person's voice."



GS REHABILITATION

If you think the GS' stellar sound quality is just for entertainment, the Neurorehabilitation Centers of Michigan in Troy will open your ears to some innovative applications of Apple technology that are helping handicapped clients along the road to recovery.

The staff of the day-treatment and residential facilities has two Apple IIGSs running "shoot 'em up" games, memory games, math drills, and typing programs, and is currently exploring further uses for the technology, such as digitized speech.

The centers treat people with traumatic head injuries, says clinical coordinator and neuropsychologist Dr. Glen Johnson. Almost all of them need to relearn old skills most of us take for granted—visual and verbal short-term memory, hand-eye coordination, visual sequencing, basic math, reading comprehension—and many need to establish alternative modes of communication, as well. "Some of our patients can no longer talk," Johnson adds, "so typing becomes very important for them."

Unfortunately, Johnson and his staff have trouble acquiring appropriate programs. "It's very hard to find software that doesn't treat adults as children," he notes. "Brain-impaired people are not children. They just can't do some things as well as the rest of us." The Center is interested in locating public-domain programs suited to its needs. If you have any suggestions, contact the Neurorehabilitation Centers at 575 East Maple, Troy, MI 48083, (313) 524-2650.

THE APPLEFEST REPORT

The new, higher price of the Apple IIGS was the major topic of discussion among the 25,000 Apple II users who gathered in San Francisco for AppleFest last September. Software developers were perplexed by Apple's low-cost IIc Plus, having heard from Apple Computer since October 1986 that the GS was "the machine of the future."

When Apple CEO John Sculley announced the Apple IIc Plus on Friday morning, the applause was polite; the thundering ovation was reserved for Sculley's unprecedented "pre-announcement" that "there will be another new Apple II in 1989." We have reason to believe it won't be the rumored "IIGS Plus," but we may be wrong.

Sculley's introduction of the GS/OS, the newest Apple IIGS operating system, was greeted warmly, but with a few grumblings that "it's about two years overdue."

Sculley was frank with the AppleFest audience and the press, admitting that "Apple ignored the Apple II for a while in favor of the Mac." But, drawing an analogy to the need for standard and automatic shifts on automobiles, he said he now understands the need for the Apple II *and* the Mac. He also noted that Apple was now more comfortable with the Mac's position in business.

Sculley and Del Yocam, president of Apple's odd-couple Pacific and Education operating groups, said in separate conversations that Apple's recent reorganization won't change the position of the Apple II at Apple; that is, its future isn't solely in the hands of the Education Division.

Despite its lukewarm reception, some new products for the IIc Plus were visible at AppleFest. Our favorites include the following:

- The Learning Company's (Fremont, CA) long-awaited (but never announced) Children's Writing and Publishing Center ($54.95), a desktop-publishing program designed for kids.
- Graphic Images' (Fresno, CA) professional clip-art series of the same name. We stress the word *professional*: It's clip art that a serious designer—one who gets paid for it—can use.
- Epic's (Berkeley, CA) "M&M" (that's "modem and memory") board, which uses the internal expansion capabilities of the IIc Plus to add a 2400-baud modem *and* a megabyte of memory. It's sleek.
- Berkeley Softworks' (Berkeley, CA) GEOS pack for the IIc Plus, which includes a word processor, a paint program, and a mouse for less than $200. Put it together with a monochrome IIc Plus and you've got a bargain starter computer.
- Many people were also buying AppleLink Personal Edition, Apple's on-line service now available to consumers for the first time.

But the most exciting booth at AppleFest was Roger Wagner's, where HyperStudio was on display. Scheduled for release in November 1988, HyperStudio promises to integrate words, pictures, and sounds in a "hyper-media" authoring system. It's an improvement over the Macintosh HyperCard in that it includes an amplified speaker, a sound-digitizing expansion card, and a microphone. **—P.S.**

CONTEST UPDATE

Following is the list of winners in *inCider*'s Desktop-Publishing Contest. A detailed description of entries and prizes will appear in an upcoming issue.

16-BIT WINNERS

Grand Prize
Donna Peet, Dunedin, FL

First Prizes
Sharon Webb, Blairsville, GA
Andy Murphy, Columbus, OH
Betty Mitias, Columbus, OH

Second Prizes
Richard M. Sigler, Baltimore, MD
Ernest W. West, Cody, WY
T.R. Nolan, St. Louis, MO
David and Vickie Dow, Springfield, IL
Patricia Reynolds, Dunedin, FL
Gerald Schwader, Janesville, WI
Blair G. Kaufman, Lima, OH
C. Anne Ugartechea, Oceanside, CA
Kenneth G. Ramsthaler, Point Pleasant, NJ
David Lawrence, Whittier, CA
June A. Sullivan, Willow Grove, PA

8-BIT WINNERS

Grand Prize
Vinny Napple, Virginia Beach, VA

First Prizes
Harley L. Miles, Charlottesville, VA
James F. Pryor, Bellflower, CA
Jennifer G. Mahan, Westmoreland, VA

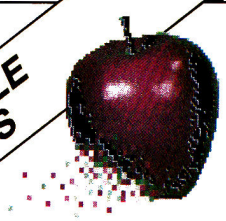
Second Prizes
Willis A. George, Jr., Albuquerque, NM
Jeannie Gregory, Alpine, CA
CW3 William W. Reaves, Jr., APO NY, NY
Deborah Owens, Auburn, NY
Glen A Hacker, Bonner, MT
Stuart C. Keen, Jr., FPO San Francisco, CA
Virginia L. Edwards, Gnadenhutten, OH
Carol J. Garvin, Langley, B.C., Canada
Linda Goodwin, Reno, NV
Don Lancaster, Thatcher, AZ
Mike Farmer, Tigerville, SC



WHAT DOES IT COST?

Suggested retail prices for Apple computers and peripherals as of September 30, 1988, include the following:	NEW	OLD
Apple IIc Plus	$675	—
Apple IIe	$829	$829
Apple IIGS	$1149	$999
5¼-inch drive	$329	$299
3½-inch drive	$429	$399
Apple II memory-expansion kit (256K)	$159	$69
Apple IIGS memory-expansion card	$229	$129
AppleColor composite monitor	$399	$379
Apple monochrome monitor	$159	$129
AppleColor RGB monitor	$599	$499

APPLE BITS



■**Activison/Mediagenic** (Menlo Park, CA) may not have given up on the **Apple IIGS productivity market** after all.

■Del Yocam says there's no "inherent connection" between **Apple Pacific** and **Apple Education**, but there are some "synergies."

■High praise for **Roger Wagner**'s **HyperStudio**: Several representatives from **Activision/Mediagenic**, the leading publisher of **Macintosh stackware**, were seen asking for copies of the beta version.

■We noticed that **Baudville**'s newest catalogue featured **SoftSwitch** and **MouseWrite** from **Roger Wagner Publishing**.

■The **Beagle Bros**—Mark and John Simonsen, Alan Bird, et al.—were spotted at a Claris breakfast, and in the Claris booth, too. Asked whether **Claris** had plans for acquiring "third-party" help for **AppleWorks Classic**, Claris president Bill Campbell replied, "No comment."

■**Tom Snyder** showed us some **"lapware."** Lapware's a little bit Infocomics,a little bit Rocky and Bullwinkle, and a little bit Grimm. But the Reading Magic stories we saw—Jack and the Beanstalk and Flodd, the Bad Guy—really will involve parents with their kids.

■"Writers of Tomorrow," that is, children aged 6–12 who have written, designed, and illustrated their own storybooks with **Once Upon a Time** from **Compu-Teach** (New Haven, CT) can have their works published in *Children's Short Story Books*. For details, call (800) 441-3224. Contest ends December 15.

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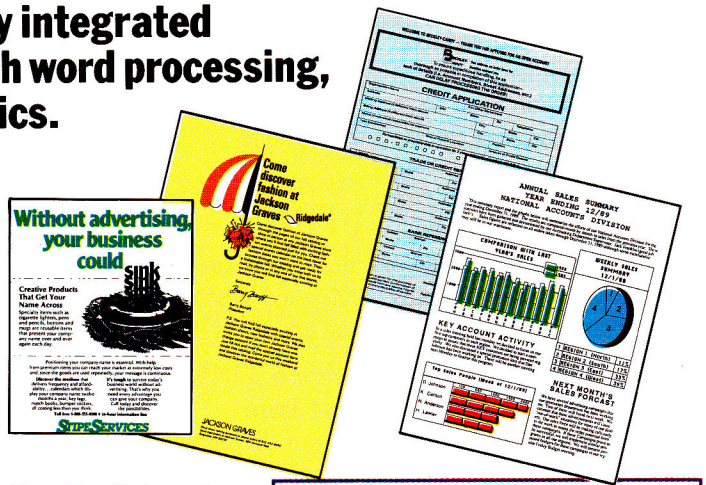
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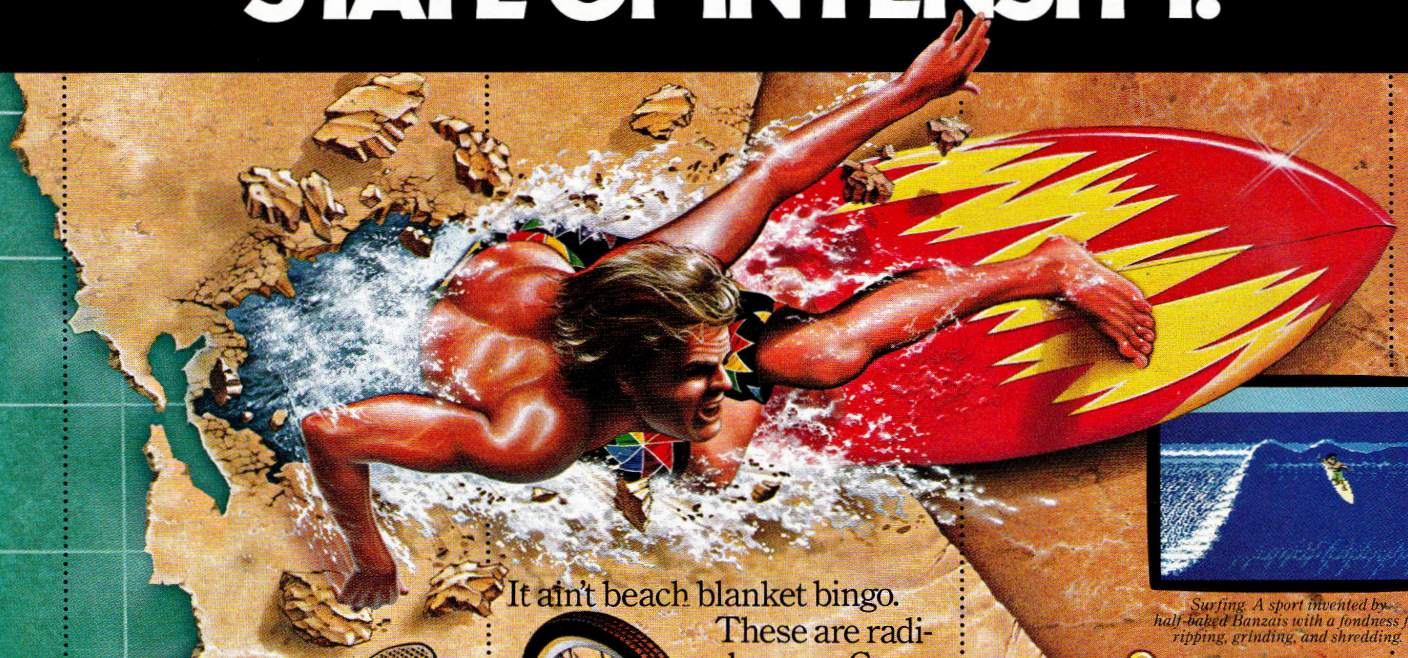
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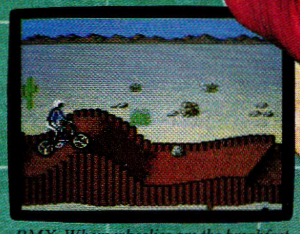
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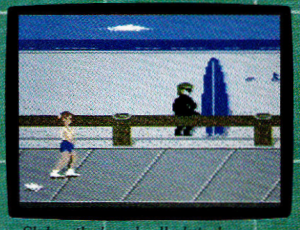
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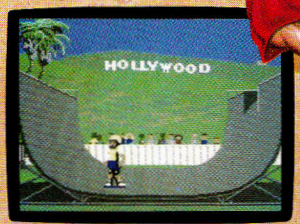
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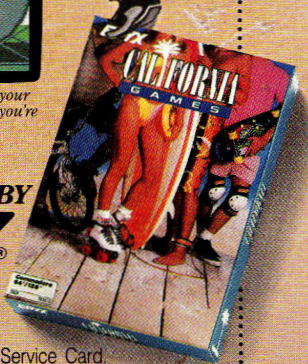
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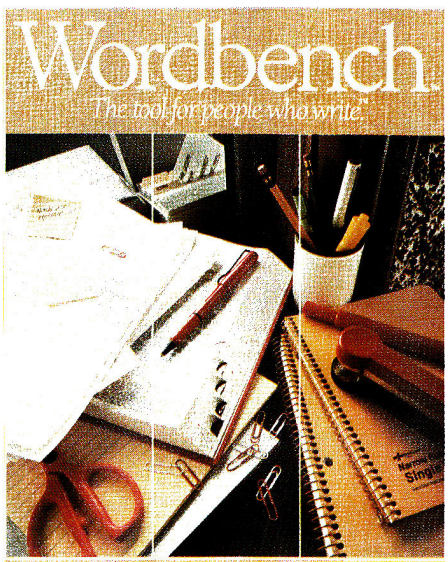
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Wordbench; ShowOff; Once Upon a Time; Math and Me; At a Glance; Games Editors Play: Sub Battle Simulator, A Question of Scruples, Ticket to Hollywood

Write Away

Wordbench just might change the way you write. People at Addison-Wesley have touted it as the tool that will set your creativity free, letting it soar to new heights—and they're right.

Wordbench is a writing program—it would be a disservice to call it a word processor. Its four major components are an outliner, a notetaker, a "brainstormer," and a word processor; it also features a thesaurus and spelling checker, formatting tools, a print manager, a viewer that lets you flip between documents, a reference tool to keep track of information sources, and macros, which Wordbench calls "shortcuts." It's a large program with lots to explore, but don't let that scare you away.



NUTS AND BOLTS

Wordbench runs on a 128K IIc, a IIe, or a GS. It's a pleasure to see a powerful, innovative program designed with the entire II family in mind. It takes up four 5¼-inch disks, however, so it requires a lot of swapping. Even with a 3½-inch drive, you'll need to swap disks to get to the brainstormer and printer drivers.

Unfortunately but not unexpectedly, Wordbench runs slowly. The biggest problem with its lack of speed is that it makes you aware of the mechanics of the program, which can distract you from the process of writing. When you have a wonderful idea and want to jot it down, you have to wait for the Notetaker to load, all the while frantically trying to remember the idea you thought was worth writing down. Extra memory or a RAM disk speeds things up.

Wordbench's format isn't very intuitive at first. As you continue using the program, though, it becomes much less cumbersome. The basic unit is the folder. You create individual folders to hold documents, any related notes, and an outline.

WORDBENCH

Addison-Wesley Publishing Company, 6 Jacob Way, Reading, MA 01867, (617) 944-3700
Writing program with word processor; 128K Apple IIc, IIe, IIGS; two 5¼- or 3½-inch drives recommended
$149
Rating: ■■■■

Once you select a folder, you'll see a menu giving you access to only the information and pieces of writing contained in that folder. Each menu includes options such as "plan," "write," and "print."

Wordbench's strength lies in the flexible link among segments of the program. You can associate any note with any entry in your outline, either when you write the note or later during editing. If you insert entries into your outline, your notes will remain linked to the now renumbered original entry.

The final step in this link is the creation of a rough draft. Wordbench automatically merges your outline and notes; the resulting document uses the outline entries as headlines, with the text of the notes forming paragraphs below each heading.

FRAMEWORK

The Outliner is simple and easy to use. It lets you create a list of topics and subtopics, rearranging them at will. Creating a subheading is as easy as consecutively hitting the return and tab keys.

Like the rest of the program, the Outliner greets you with a series of menu choices. Strung across the top of your screen you'll find five options—outline, collapse, expand, labels, and modify. Using these choices, you can create your outline, edit it, and view it in either a compressed form or with all subheadings in view.

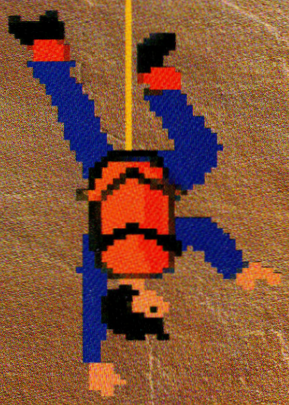
You won't appreciate the Outliner until you start taking notes. That sounds contradictory, but it's true. Most of us dispensed with outlines as soon as we finished high school, and we're not anxious to go back. Wordbench encourages you to rediscover the outline by making it the foundation of the document you're writing. The Notetaker builds on that foundation.

When you write down a note, your first option will be to link it to one of your outline headings. Press the return key to see your outline, then use the

inCider's Ratings

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Very good—impressive and recommended	■■■■
Good—average, solid performance	■■■
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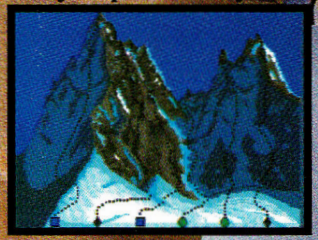
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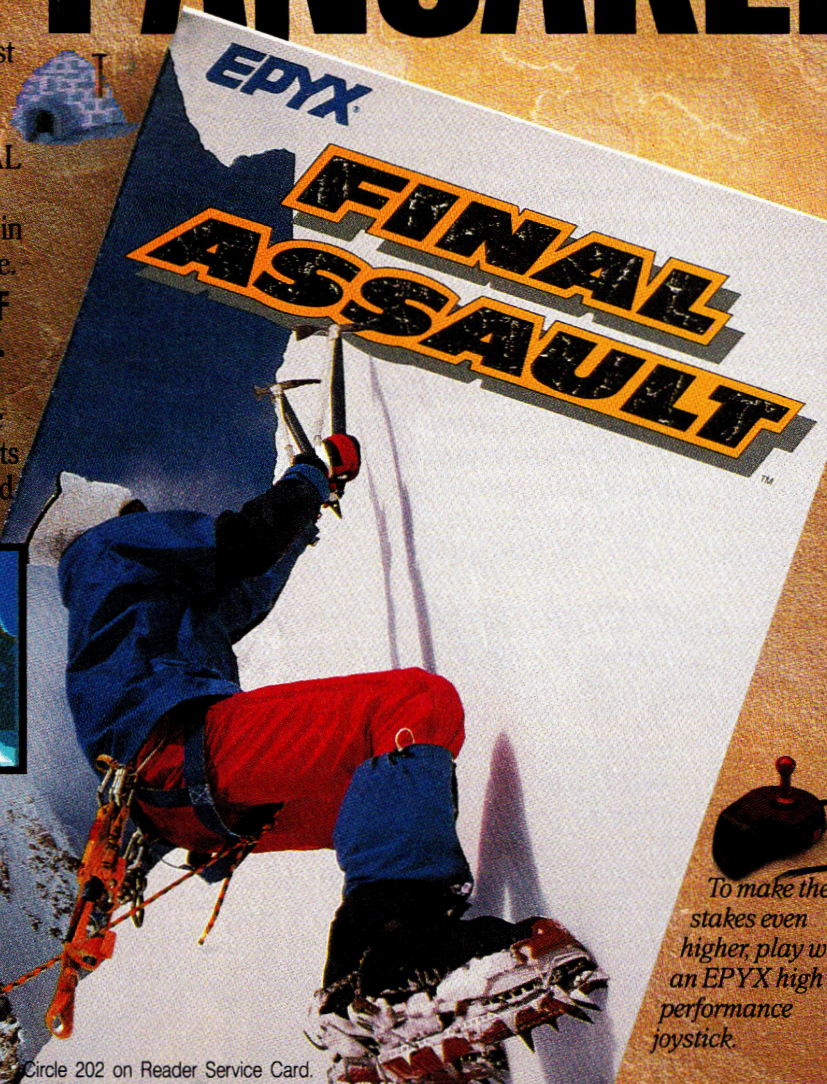
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arrow keys to select the appropriate one. The outline heading and the note will then be linked, so that if you rearrange the outline your notes will remain attached to the original subject headings. This tie helps you keep your document organized. If the subject of your note doesn't fit into your outline, you'll know you're getting away from the original topic.

Your second option will be to link your note to an entry in the reference tool, noting the source of your information. You can establish these links when you write your note, or edit them in later.

You can also indicate the subject of your note, a feature that makes searching and sorting through your list of notes quite simple. Glancing at a list of notes organized by outline topic makes very clear which topics you haven't covered.

WRITE ON

Surprisingly enough, the word processor is the weakest link in Wordbench. It includes a number of useful features, but leaves out other equally important ones. On the positive side, you'll find the instantly created rough draft, the single-word thesaurus and spelling checker, and the easy creation of footnotes and bibliographies. These are features you'll use often, and ones you won't find in many other programs.

For instance, although many programs include a thesaurus or spelling checker, Wordbench lets you use both to check a single word without interrupting the flow of your writing. Type Open apple-T with your cursor on the word in question to get a list of synonyms; type Open apple-S to check spelling. Of course, you can also check the spelling of an entire document by selecting Analyze from the word processor's main menu.

Footnote writing is simple. From the word processor's edit menu, pick the Insert Footnote option. Type in the contents of your footnote and Wordbench links it automatically to the word on which your cursor was resting when you began the footnote process.

You can write footnotes from scratch or you can copy information from the reference tool, where you've documented sources of quotes and opinions previously. If footnotes aren't required for your document, Wordbench can produce a bibliography automatically from the information you entered into the reference tool while taking notes.

Unfortunately, other Wordbench features don't offer the same quickness and ease of use. Because Wordbench makes a distinction between writing and editing, for example, the editing process is irritatingly clumsy. You have to use at least nine keystrokes to delete a line of text: Press escape to reach the edit menu, select your menu choice, move your cursor to the point in the document where you want to begin editing, hit Return, move to the end of the block you want to edit, hit Return again, escape again to reach the write menu, and hit Return again to resume writing. This is needlessly unwieldy. Combining the write and edit menus would make Wordbench's word processor much easier to use and more direct.

Text scrolling is abrupt and choppy—distracting when you're writing. Scrolling comes into play only when you reach the last line on screen; then your text moves abruptly to the middle. Cursor movement is also choppy. If you hold down an arrow key, the cursor continues to move after you release it.

If you're a veteran AppleWorks user, you'll also miss the clipboard. During the writing process, you often need to move a block of text without quite knowing where you should place it. The clipboard lets you hold it and continue writing. Unfortunately, Wordbench lacks this feature.

THE PRINTED PAGE

When it comes to the Print Manager, Wordbench shines. In addition to the list of printer drivers included on the Wordbench disk, the program also gives you tools to create your own drivers by modifying the printer codes. Wordbench lets you select the modifications you'd like to make from easy-to-understand menus. Of course, you'll need to consult your printer's manual to decide exactly what codes you'll need to enter.

At a Glance

SuperPrint (October 1988, p. 30, by James Trunzo), Scholastic Software, 730 Broadway, New York, NY 10003, (212) 505-3000, $39.95
Rating: ■■■■

Scholastic Software's SuperPrint is a useful, innovative program, with clip art, fonts, and "backgrounds" included. It offers the standard variety of options—graphics-enhanced signs, letterheads, banners, and greeting cards. It surpasses most programs, however, by printing giant posters, wall-sized calenders, and bulletin-board-sized signs.

The quality of the finished product—even at its largest—is excellent, especially if you don't print in draft mode. With horizontal and vertical scrolling, you can preview the design on screen in exactly the size the program will print it. In addition, SuperPrint lets you use as many different graphics as there's room to place.

SuperPrint uses the same menu-driven commands to create all its various formats. The program is so intuitive the average user can run it easily without ever opening the manual. Documentation is clear and easy to use, except for a few errors in the tutorials.

II Write 1.5 (October 1988, p. 34, by Cynthia Field), Random House Media, 400 Hahn Road, Westminster, MD 21157, (301) 848-1900, (800) 638-6460, (800) 492-0782 (MD), $59.95 home version, $69.95 school version, $269.95 AppleShare version
Rating: ■■■

II Write was designed principally for students aged 9 and up, but this MacWrite-like word-processing program is easy enough for early elementary or special-education students to use with minimal assistance. The program offers nine intuitive pull-down menus, including file, edit, format, and windows. II Write supports a mouse, but works almost as well with the apple and arrow keys—a nice twist if you're mouseless.

What makes II Write special is its ability to display four windows with four separate documents on screen at the same time. In addition to copying and pasting text within a document, you can also copy from one document to another.

With II Write's Copy Format feature, you can take a "snapshot" of an existing format and place it in another window. This feature can save you lots of time by copying complicated formats quickly.

II Write includes five crisp-looking fonts and type sizes from 9- to 16-point. However, you can't integrate graphics into documents, at least not without scissors and paste!

MagnaCharta (October 1988, p. 41, by Gregory Glau), Third Wave Technology, 11934 Lorain ►

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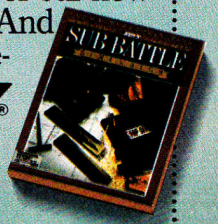
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Avenue, Cleveland, OH 44111, (216) 671-8991, (800) 223-WAVE, $59.95
Rating: ■■■■

MagnaCharta is a business graphics program that gives you two ways to handle your numbers: You can import text files from other programs, including AppleWorks, or use the program to create worksheets for the information you want to graph. It's a helpful, easy-to-use addition to your spreadsheet.

MagnaCharta lets you create nine different kinds of graphs, including a unique 3-D chart. You can print your graphs in two sizes, and rotate the images on paper to make them look better. The program has pull-down menus that are easy to understand and work with. It lets you use your keyboard, mouse, and joystick simultaneously, which gives you lots of flexibility.

MagnaCharta displays any number over 999 exponentially, which means $1000 is shown as 1e3. If you're not used to this, you'll have to work harder to interpret the figures on your worksheet.

Documentation is included with the package, and technical support is available via a toll-free telephone number.

Mathtalk Fractions (October 1988, p. 43, by Jack Emberly), First Byte, 45 Temple Avenue, Long Beach, CA 90806, (213) 595-7006, $49.95
Rating: ■■■■

Mathtalk Fractions features a friendly approach designed to interest kids in drill-and-practice problems covering fractions, decimals, and percentages. The program is motivating and effective, even though it doesn't include any tutorials. Make sure you have enough RAM, though—this one requires 768K just to get off the ground.

The first several pages of the documentation define terms such as *fraction*, *lowest terms*, and *decimal*, while the remainder explain how to convert and reduce fractions. I'd much rather see a disk tutorial. Kids who don't understand fractions aren't likely to stop playing long enough to refer to a wordy text.

You can choose one of four activities—Problem Factory, Fraction Shuffle, Fun House, and Team Challenge. Problem Factory is the least impressive of the exercises, while the other three make the most of the GS' graphics to attract students to fraction problems.

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

WordPerfect GS is high-octane word-processing software worth taking out for a test drive.

The program as it comes out of the box printed on my ImageWriter LQ—the ImageWriter is the default driver. Wordbench includes drivers for popular models from more than half a dozen manufacturers—the Apple LaserWriter, the IBM ProPrinter, Epson FX, MX, and RX-80 printers, even the Okidata Microline series, ranging from the now discontinued ML-92 to the more current 292, among others. Addison-Wesley recognizes that not every Apple owner also owns an Apple printer.

ADD-INS AND EXTRAS

The only option currently available under the Add-In menu is brainstorming. Here you'll find a choice of several excercises, including invisible writing, nutshelling, free writing, and goal setting. During invisible writing, your words are recorded but never appear on screen; free writing means you can see your words but not edit them. Nutshelling and goal setting ask you to define the point you hope to arrive at in your document.

The brainstorming function may enhance your writing far more than you'd expect. Forcing yourself to write without any editing will bring recurring thoughts and themes to the surface where you can examine their value.

According to an Addison-Wesley representative, more add-ins are planned for the future. Some of the possibilities include mail merge and a grammar checker, but the company hasn't made any final decisions.

The Viewer lets you look through everything you've written—outlines, notes, brainstorming exercises, and so on—while you're working on another document. To do so, select the viewer with Open apple-V, then choose the text you want to examine.

THE MAKING OF A MACRO

Macros are one of Wordbench's biggest assets. You can write and execute macros without ever having to compile them, a relief for those of us with no time or desire to program. Use macros to alleviate some of Wordbench's more cumbersome features: In the example above—deleting a block of text—the number of required keystrokes can be cut to four.

To create a macro, a "shortcut" in Wordbench parlance, select the folder manager from the program menu, then choose and label the key for which you want to create a macro. Wordbench then asks you to record all keystrokes you want that macro to execute. (If it's a complicated macro, jot them down so that you won't be struggling to remember them as you're recording.) That's it—making a Wordbench shortcut is very simple. Execute it by hitting the open-apple or option key and the key defined for that particular shortcut.

Wordbench includes several shortcuts already defined, including Open apple-A (go to menu), Open apple-C (go back one paragraph), and Open apple-S (create shortcut). If you need to, you can redefine any of these keys.

HELP ON THE WAY

The Wordbench manual is complete, but it's also rather dry reading. Don't go through it; instead, learn about the program by sitting down to do something and refer to the manual as you need to answer a specific question. Included are a step-by-step tutorial and an alphabetically organized reference manual, both quick and thorough sources of information.

Addison-Wesley's technical support is excellent. You can expect to speak directly to Wordbench's product manager, at least until the demand for technical support grows. Questions are answered clearly and direclty.

Wordbench *will* help you write. It helps you overcome the anxiety of staring at a blank computer screen by giving you a structure on which to base your document. The concept of the dynamic link works: It saves you the time and trouble of transcribing your notes as you prepare to write. Wordbench also helps ensure the accuracy of your final product by producing accurate footnotes and bibliographic references. Anyone who takes writing seriously needs Wordbench.■

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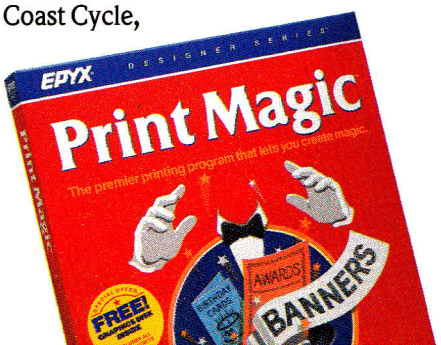
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Continued

It's designed for professional authors and businesspeople, with more than 100 features. Because of its many features and formatting options, learning to use WordPerfect can be a daunting prospect.

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

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

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

ComputerEyes for the IIGS (July 1988, p. 33, by Robert Ryan), Digital Vision, 66 Eastern Avenue, Dedham, MA 02026, (617) 329-5400, $249.95
Rating: ■■■■

ComputerEyes GS is a color video digitizer with two major components: a GS expansion card that converts analog video signals to your computer's digital data, and software to manipulate them. The result is a system that lets you capture a video picture (from a VCR, videodisc player, video camera, or camcorder) and display it as an Apple IIGS picture.

The system requires 512K of RAM. The digitizing board is a compact unit you can plug into any GS expansion slot. (The manual recommends slot 3, 4, or 7 to avoid conflicts with the machine's ports.) Note that ComputerEyes doesn't put out an RGB signal, so you can't preview the video source on the standard GS monitor.

ComputerEyes' software lets you make many changes in images you've captured or those you've loaded from disk, including setting number of colors or grey levels, separation between colors, and capture speed.

Within limits, ComputerEyes is a top-notch image-acquisition system. It lets you capture beautiful shots you can use with your GS software or modify with a paint program.

The Graphics Studio (August 1988, p. 28, by Cynthia Field), Accolade, 550 South Winchester Boulevard, San Jose, CA 95128, (408) 296-8400, $59.95
Rating: ■■■

Graphics Studio is a good program that's somewhat hampered by its deviation from the standard GS user interface. It's got enough features and tools to satisfy almost anyone, though—the resizable eraser is especially handy.

Two other advanced functions are noteworthy: Color-cycling animation lets you use as many palettes as you like—not just one—to simulate animated activity; and you can use a special file included on the program disk to create and display slide shows of your artwork.

The user's guide is disappointing, with both tutorial and reference sections loosely organized and superficially written.

Two more things you'll want to know: The Graphics Studio supports only the ImageWriter printer and it requires 768K.

TimeOut FileMaster (May 1988, p. 29, by Pat Payne), Beagle Bros Inc., 6215 Ferris Square, Suite 100, San Diego, CA 92121, (619) 296-6400, $49.95
Rating: ■■■■

With FileMaster, you can perform "housekeeping" tasks like formatting, copying, and comparing without ever leaving AppleWorks. It's easy to use and very handy.

Advanced AppleWorks users can use FileMaster to create an "expert mode," where, for example, you can make sure your AppleWorks never again asks, "Are you sure you want to do this?"

You can also use the program to select files to copy to your backup disk—saving time by not backing up untouched files. Features like this make sure you'll use FileMaster often.

TimeOut QuickSpell (May 1988, p. 29, by Pat Payne), Beagle Bros Inc., 6215 Ferris Square, Suite 100, San Diego, CA 92121, (619) 296-6400, $69.95
Rating: ■■■

QuickSpell is very flexible—so flexible it will seem cumbersome at first. Each time you use it, you'll need to pick out which words to correct and which to ignore. You'll get used to this quickly, however, and appreciate time not spent looking at possible spellings for always-unfamiliar personal and trade names.

QuickSpell does have one fault—more words than you'll ever need. A request for suggested spellings may get you 400 words or more. Still, it's a program worth having.

End

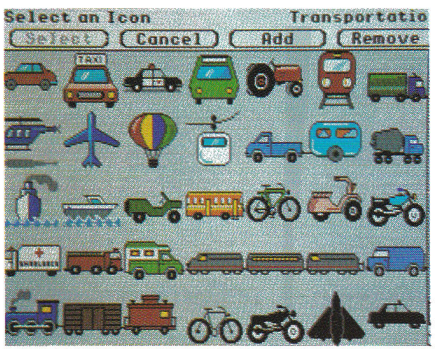
Picture Show

SHOWOFF

Broderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101, (800) 527-6263, (415) 492-3500
Desktop-presentation utility; 512K Apple IIGS, color monitor
$59.95
Rating: ■■■■

ShowOff may do for desktop *presentation* what The Print Shop did for desktop *publishing*. With ShowOff you can design a variety of visual aids to spruce up business reports, classroom handouts, lectures, and informal talks.

You can create stand-alone overhead transparencies, electronic screen shots for a computerized slide show (*slide* refers to projected screen images, not 35mm



transparencies), interactive question-and-answer sequences, bar graphs, pie charts, picture puzzles, and other illustrated diagrams. You can even use the program in conjunction with a random-access carousel projector. ShowOff adds a dash of spice to any visual production.

GET THE SHOW GOING

It's preferable to have two 3½-inch disk drives to use with ShowOff—otherwise you'll have to do a lot of disk swapping. You'll need a formatted data disk on hand, as well, for saving frames, icons, and slides. There's no room on either the ShowOff program or Slide Show disk for storing any newly created slides or sequences. The *User's Guide* includes instructions for initializing data disks.

Currently, you have to use the GS System Disk or a program like Copy II Plus to format a disk. Broderbund recommends a 3½-inch disk for data because of the larger storage capacity. In fact, you can't use a 5¼-inch disk to create a ShowOff autorun (self-contained) slide show. Technical support at Broderbund promises that an upgrade is in the works to allow for formatting a data disk from within the program. An option to delete files would also be a welcome addition. The upgrade should be out by the time you read this.

Like other ProDOS 16 programs, ShowOff takes a long time to load—almost two minutes. Once loaded, ShowOff displays the standard GS interface—complete with menu bar, pull-down menus, scroll bars, dialog boxes, alert boxes, and mouse control. Some menu items work with keyboard commands, but mouse input is essential to achieve maximum program performance.

BACKSTAGE FEATURES

Text-editing features include a drawing toolbox and a range of fonts and type styles. You can print hardcopy on an ImageWriter II, ImageWriter LQ, or LaserWriter. (If you want to print with a parallel printer, check out Orange Micro's C/Mac/GS printer cable.) ShowOff has a special menu for serial setup, which lets you configure the serial-port parameters on your GS. If your ImageWriter LQ is set to 19,200 baud, for example, you can configure ShowOff the same way. You can also send orders through that port to any serial device.

Toolbox options are displayed down the left side of the screen. They incorporate the most frequently used drawing tools and procedures for creating and editing special presentation frames. These tools let you move objects around the screen, type in text, add pictures, draw lines, cut unwanted images, flip selected items vertically or horizontally, add geometric shapes and fill them with color, specify the thickness of borders or lines you draw, place arrowheads on your lines, and select from a palette of 16 colors for your text, lines, and shapes.

While the range of tools isn't as sophisticated as those of drawing programs like Mediagenic/Activision's Draw Plus and Styleware's Top Draw (no longer available), they're adequate for creating your presentations. Press the spacebar to toggle between displaying and hiding the drawing toolbox and the menu bar while in the frame editor.

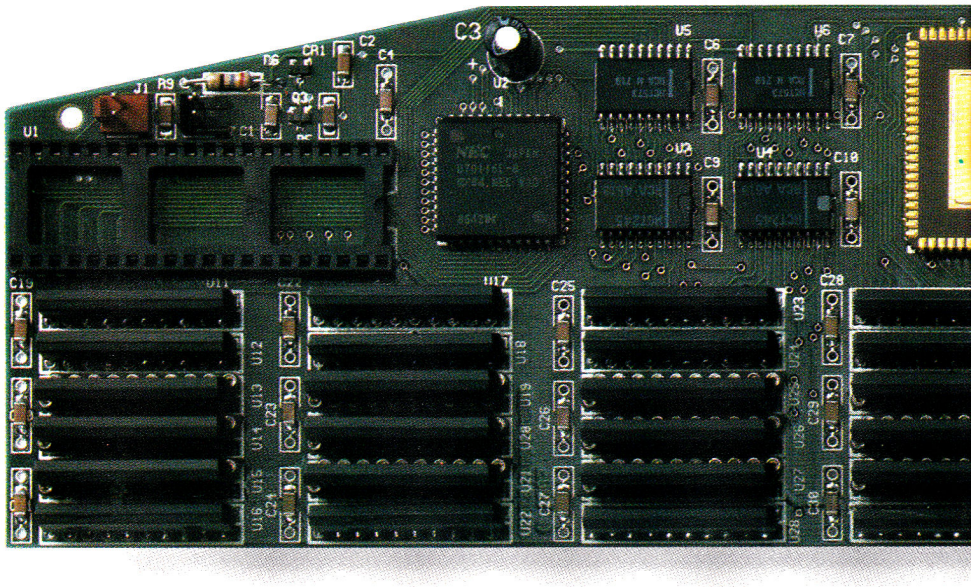
ShowOff offers a lot of potential for incorporating graphics displays into your desktop presentations. If you're the artistic sort, the drawing tools will let you create graphics from scratch. If the artist in you is all thumbs, you can compose graphics visuals from the assortment of nine clip-art stickers and 385 icons included on the program disk.

Cont. on page 108



Circle 210 on Reader Service Card.

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— InCider

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

You don't have to be a programmer.

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

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

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

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

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

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



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

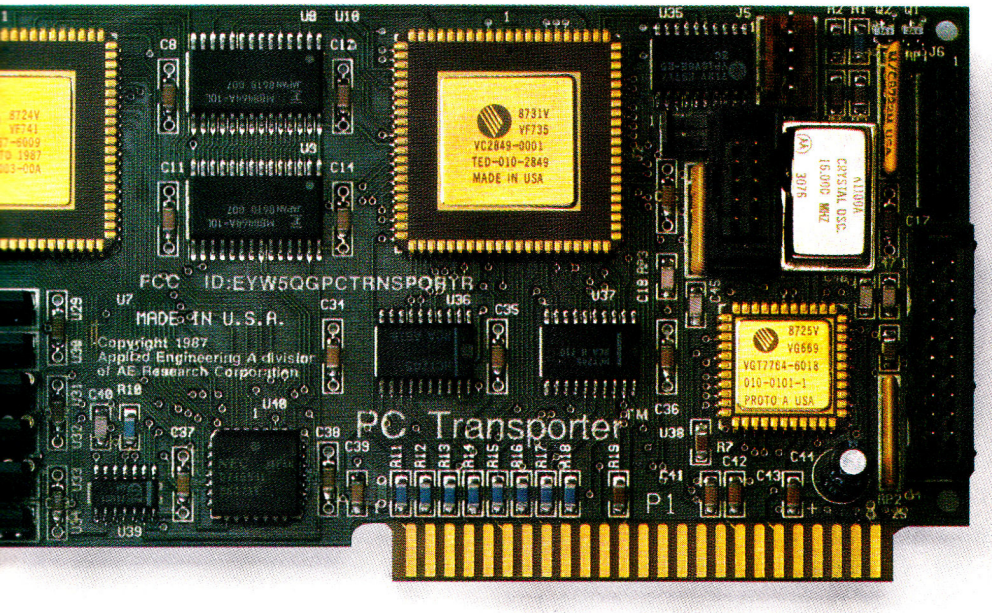
"An excellent solution for at least half a million people who enjoy Apple II computing at home and endure MS-DOS at work."
— MicroTimes

A few words about cost.

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

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Transporter™ that counts . . .



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with MS-DOS programs.

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

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

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

"When you buy a PC Transporter, you're not just giving your Apple the ability to act as a PC clone, you're upgrading your computer in a big way for all your Apple II computing."
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PC Transporter comes with our exclusive AppleWorks Expander™ program that dramatically enhances the capacity, speed and capabilities of AppleWorks.

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

PC Transporter memory choices

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

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

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

Optional 5.25 IBM Format 360K Drive Systems

Single-Drive System	**$259**
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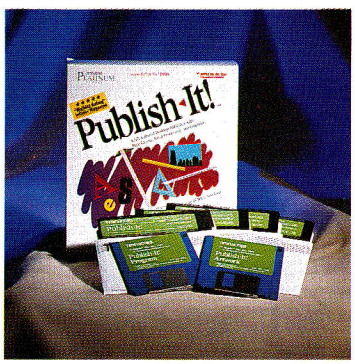
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EDITORS' CHOICE AWARDS 1988

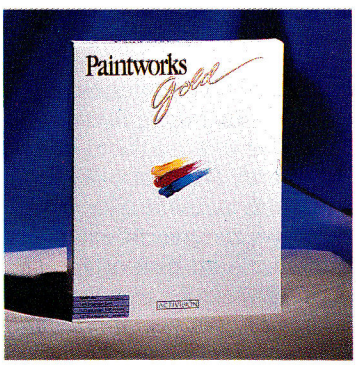
TOP TEN STARS

As another year-end issue rolls around, and inCider *digs in for another New England winter, it's time to look at the Apple II market's Class of 1988. We saw some good products, some mediocre products, a few bow-wows, and ten great products that stand out as the year's best. Our panel of editors, contributing editors, and reviewers came to a consensus (sort of) on the following Apple II Stars of 1988.*



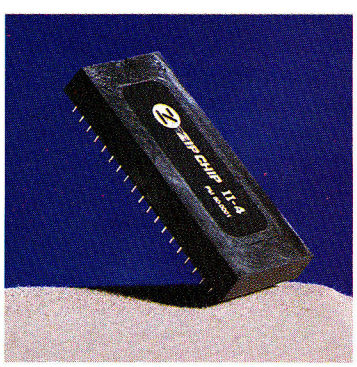
1. PUBLISH IT!

Nineteen eighty-eight was the year "true" desktop publishing came to the Apple II, so it's only right that the honors for best product of the year go to a desktop-publishing program. Timeworks' Publish It! is by far the finest page-layout program available for any Apple II. Desktop publishing in monochrome instead of color is good enough for the Macintosh, and it's good enough for the IIGS. A highly graphics-oriented interface and WYSIWYG displays make Publish It! a breeze to operate. This everything-you-need page-layout package also works just fine on 8-bit Apples.



3. PAINTWORKS GOLD

It used to be common knowledge that Activision/Mediagenic's Paintworks Plus was the easiest-to-use painting program for the Apple IIGS. It was also equally common knowledge that Electronic Arts' DeluxePaint II was the most powerful painting program. Paintworks Gold combines the best of both worlds—Paintworks Plus' ease of use and the potential of DeluxePaint II. This sophistication, however, comes at a cost. The $99.95 price tag is reasonable considering the program's power, but 1.25 megabytes of RAM is steep.



2. ZIP CHIP

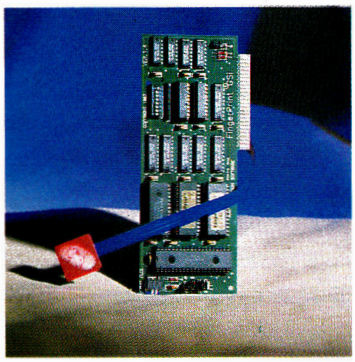
You can get a high-speed microprocessor with a special RAM cache in a $10,000 Compaq Deskpro 386, but even that doesn't combine the components you'll find in this single ultra-high-tech accelerator chip. The Zip Chip is easy to install and operate, which makes up for a hard-to-use manual. It replaces your 6502/65C02 microprocessor and runs four times faster. This chip's amazing, and would have made a stronger run at the number 1 spot if it hadn't been so slow reaching Apple II owners.



4. DB MASTER VERSION FIVE

No fancy GS graphics, no slice-and-dice integration or hypertext type, just a database manager to dazzle folks who thought no one wrote straightforward, full-powered applications for the Apple II anymore. Each record can hold 2K of data in 200 fields. DB Master isn't for everyone, but if you need multifile relational capabilities, macros, and other features you'd normally expect to find only in MS-DOS, you won't find anything more powerful than Stone Edge's DB Master Version Five.

Photography by Frank Cordelle



5. FINGERPRINT GSi

For many Apple II owners, this product is indispensable. Think of all those times you've said, "If I could only print this." Well, Thirdware's FingerPrint GSi provides screen dumps of virtually anything. Whenever something on your monitor looks as though it might be worth seeing on paper, just touch the FingerPrint button, and your screen is saved in print. You can also resize your screen or print just a portion of it. Add explanatory text to your graphics or export them to a paint program.



8. DIVERSI-TUNE

Whether you want to listen to music or compose it, you'll have fun with your IIGS and the MIDI-compatible program Diversi-Tune from Diversified Software Research. It works like a tape player and comes with prerecorded music; notes, piano keyboard, and lyrics show up on screen. Coming soon are disks of folk songs, Christmas carols, gospel music, and jazz improvisations. Because of Diversi-Tune, *inCider*'s alive with the sound of Apple music. We hear that real musicians love it, too.



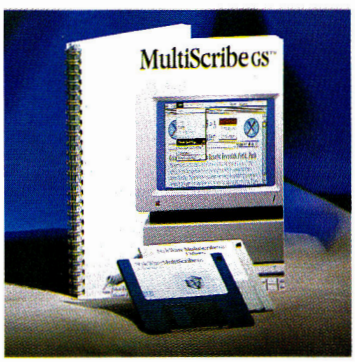
6. ULTRAMACROS

Never mind "Apple II Forever"—Beagle Bros' TimeOut series makes the slogan "AppleWorks Forever." Randy Brandt, Alan Bird, and their Beagle buddies have done more for AppleWorks than any company, including Apple and Claris. Because AppleWorks is such a natural for macros, UltraMacros stands out as the most powerful program of the TimeOut line. Beagle Bros certainly has plenty of experience in macros—and when The Software Touch joined forces with Beagle Bros, the San Diego-based company owned the market. If there were an AppleWorks Hall of Fame, Beagle Bros would earn a spot alongside Bob Lissner.



9. TETRIS

Tetris is the best thing to come out of the Soviet Union since vodka. But no matter where this game came from, it'd be a hit. No special visual effects, digitized music, or complex plot—just the basic challenge of completing a block puzzle that defies your dexterity. Nine levels of skill keep you coming back for more; a tournament game and an advanced mode are also included. Spectrum Holobyte has a hit: It's simple to learn and play, and is more addicting than anything you can buy legally. In fact, an informal study conducted at the *inCider* offices discovered that at any given time during the work day you'll find Tetris running on at least three Apple IIGSs.



7. MULTISCRIBE GS 3.0

MultiScribe just keeps getting better. Not only is MultiScribe GS 3.0 the best 16-bit word processor, it's probably the best 16-bit program available. Version 3.0 lets you import AppleWorks files directly, and its new, improved graphics capabilities make it a cross between a word processor and a desktop-publishing program. MultiScribe GS 3.0, originally a Styleware package, is now a Claris product; we hope Claris continues to offer the quality technical support that helped make Styleware so successful.



10. AC/BASIC and TML BASIC

The tenth and final spot on our list is a tie between two new programming languages: Absoft's AC/BASIC and TML Systems' TML BASIC. Each has its fans among *inCider* staffers and contributors, making it impossible (barring bloodshed) to choose one over the other. Technical Editor Bill Kennedy advocates TML BASIC because it adheres more closely to the IIGS desktop interface. Contributing Editor Bob Ryan insists that AC/BASIC is superior because it insulates the programmer from the complexities and details of the machine.

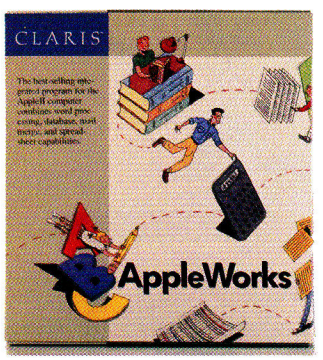
Listing in the Top 10 Stars of '88 is limited to products available to the public as we went to press in early September. Products such as AppleWorks GS, GS/OS, the Apple IIc Plus, and the Laser 128EX/2 weren't eligible for this year's roundup.

Illustration by Annie Gussman

ALL TIME BEST

TOP TEN SOFTWARE

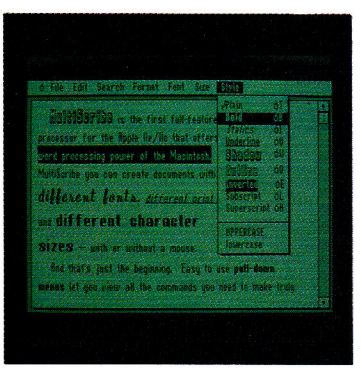
While George and the Duke were slugging it out in November, inCider*'s own electoral college—staff editors and contributing editors, plus a handful of our regular reviewers—cast the deciding ballots for their all-time favorite products in ten software categories. Our panel of experts didn't always agree on the best program in a particular area, but we heard some good arguments on all sides. Here's the tally.*



1. BEST INTEGRATED PACKAGE

APPLEWORKS

Picking the best integrated software package of all time is an easy job in the Apple II world: **AppleWorks** is the best-selling Apple II program of all time. Three modules handle word processing, database management, and spreadsheet calculation; AppleWorks' easy-to-use file-folder menu system and seamless integration have made it the standard in offices, schools, and homes.

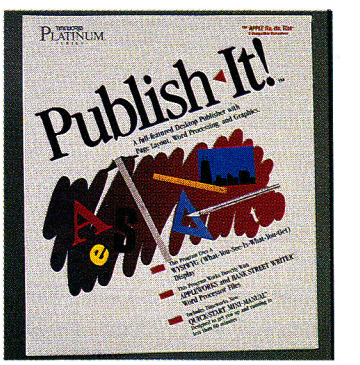


2. BEST WORD PROCESSOR

MULTISCRIBE GS 3.0

There were nearly as many different votes for a favorite word processor as there were people voting. **MultiScribe GS version 3.0** received the greatest number of ballots as the leading word processor. Says Editor in Chief Dan Muse, "MultiScribe GS does the best job of applying the Apple (read Macintosh) interface to the IIGS."

WordPerfect received as many votes as MultiScribe GS, but they were split between the Apple IIe/IIc version and the GS version. Other word processors receiving attention were the original **WordStar**, **Bank Street Writer Plus**, **AppleWorks**, **FredWriter**, **Magic Window II**, and the **Swyftware** card.



3. BEST DESKTOP-PUBLISHING PROGRAM

PUBLISH IT!

Publish It! cleaned up as our editors' favorite page-layout program. After receiving a five-star review from Contributing Editor Cynthia Field in the April 1988 *inCider*, that comes as no surprise. Publish It! is the best page-layout program we've seen so far. It offers a wide array of page-formatting options, and it's fast when you consider all the features it includes. For page layout on the Apple II, Publish It!—for now at least—is it.

Eric Grevstad cast his ballot for Broderbund's classic design program **The Print Shop**. Reviewer Jim Trunzo acclaimed **GraphicWriter 2.0**, an "unheralded" desktop-publishing program, as his favorite.



4. BEST GRAPHICS PROGRAM

PAINTWORKS GOLD

Activision/Mediagenic's mammoth painting program (it requires 1.25 megabytes to run) **Paintworks Gold** won highest praise in the painting/drawing category, winning almost unanimously. It requires a lot of memory, but Activision has packed in one of the largest sets of tools for manipulating objects and entire frames. Styleware's **TopDraw** also drew a vote, from Dan Muse.

5. BEST DATABASE MANAGER

DB MASTER VERSION FIVE

In the database-manager category, **DB Master Version Five** had almost as clean a sweep as AppleWorks did in the integrated-software polls. Nothing really compares to DB Master Five as a database manager. For sheer power of record-handling capability and processing speed, it's unequaled. In benchmark tests with IBM and Macintosh database managers (both machines having faster microprocessors than the Apple II), DB Master kept up with some and beat a few others. DB Master files can take a variety of formats: alphanumeric records of 1–150 characters, yes or no entries, dollars-and-cents amounts, any of 11 date styles, numeric entries. Each record has room for 2K of information in as many as 200 fields.

Contributing Editor (and former *inCider* review editor) Eric Grevstad upset the sweep by voting for **PFS:File**, with the comment, "Many people would never have learned what a database was if not for PFS:File." Reviewer Carol Holzberg voted for the **AppleWorks** database manager as her favorite.

6. BEST SPREADSHEET

APPLEWORKS

There was little consensus on spreadsheets among our editorial board members. Those who don't mind sacrificing extra functions for familiarity and ease of use seem to feel comfortable with the **AppleWorks** spreadsheet. Besides, when you're finished crunching numbers, you can write a letter or keep track of a database.

SuperCalc3a, **VisiCalc**, and **MouseCalc** (the latter two discontinued) also received votes. These and all other spreadsheets chosen reflect the different ways in which our contributors crunch numbers. For instance, Associate Editor Pat Payne appreciates SuperCalc3a for having more sophisticated functions than other spreadsheets.

7. BEST MUSIC PROGRAM

INSTANT MUSIC

For music programs, it was a showdown between Electronic Arts' **Instant Music** and Bill Basham's (Diversified Software Research's) **Diversi-Tune**, with Instant Music taking a one-vote victory. It was a tough call, because both programs are enjoyable and easy to use. You can't beat Instant Music for ease of use, though—that's important for us non-musical types. Just pick a tune, and you can jam along with whatever instrument you choose simply by moving your mouse around.

You can improvise on one of four instruments playing on the program's four tracks. Glide the mouse across the score in whatever pattern you choose and your Apple plays nearly faultless music. This GS program has the "artificial intelligence" to select the nearest note that will harmonize with the rest of your music. Good-sized instrument and music libraries come on the program disk; you can increase your repertoire with add-on disks from Electronic Arts. West Coast Editor Jeff Cable cast his ballot for **Music Studio 2.0** from Activision/Mediagenic.

8. BEST TELECOMMUNICATIONS PROGRAM

POINT-TO-POINT

No one here leaps at the chance to telecommunicate, but when forced we all seem to prefer **Point-to-Point**. It uses the same file-folder interface that AppleWorks users have grown up with. With a status/command line visible in terminal mode and menus to take you step by step through most operations, Point-to-Point is simple to use, even though it lacks on-line help. Some shortcuts are included. The program can read and print AppleWorks and MouseWrite word-processing files and convert them to plain text files as it transmits them. You can also send only selected sections of a document if you choose. Of all telecommunications programs, Point-to-Point seems the most intuitive. It's easy and it works, and that's what telecommunications should be like. **Apple Access II** and **MouseTalk** also received votes, from reviewer Gregory Glau and Jeff Cable, respectively.

9. BEST UTILITY

COPY II PLUS

Copy II Plus in its many versions and incarnations won hands-down as the favored utility. You'd be hard-pressed to sift through the disk libraries of serious Apple II users without finding a copy of Copy II Plus. It's the AppleWorks of utility programs—just about everybody has it and uses it. It caters to beginning and intermediate users who need to perform everyday tasks, such as copying an entire disk quickly and effortlessly—as well as more advanced users who need to copy specific blocks or sectors of a disk.

Glen Bredon's popular **ProSel** hard-drive program selector also received commendations from our editors. Last, but certainly not least, Bill Basham's **Diversi-Copy** held a spot in the utility ballot, as well.

10. BEST LANGUAGE

APPLESOFT BASIC

The computer-language picks reflected the differing levels of programming sophistication among our editors. Bill Kennedy chose the **ORCA/M** assembler—good clean fun if you're a technical editor. Cynthia Field chose the "cosmopolitan" **Applesoft BASIC**, as she praised its accessibility to the Apple II masses. Eric Grevstad agreed with her, shunning possible complaints from "serious" programmers with "*You* learned to program on it, didn't you?" Applesoft BASIC (Beginner's All-purpose Symbolic Instruction Code) was designed for novice programmers, but it's also "rich" enough to satisfy even the advanced programmer's needs, and most continue to use it extensively as their language of choice. Applesoft is built right into your Apple's ROM, ready to go when you turn on the computer—just press Control-Open apple-Reset (no program disks in the drives) and look for the distinctive bracket prompt. To save your programs, enhance Applesoft by linking it to your disks via ProDOS on your System Utilities disk or GS System Disk. Appropriately enough, when it comes to programming, Senior Editor Paul Statt and Review Editor Lafe Low preferred the simplicity of **Logo**.

GOLEM COMPUTERS

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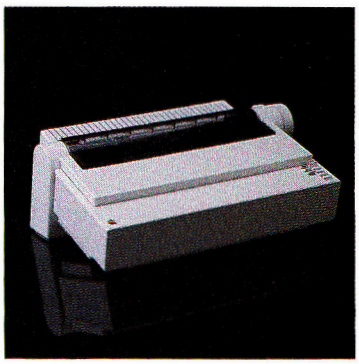
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TOP TEN HARDWARE

No list of all-time-best products would be complete without a rundown of the top peripherals and hardware items on the Apple II market. Some are essentials, some are just for fun, but all have earned a place on our roster for quality of performance. We polled our editors and contributors—here are their best picks.

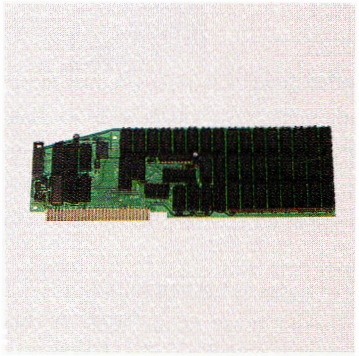


1. BEST PRINTER

IMAGEWRITER I & II

It's too bad the original **ImageWriter** is no longer available. That would certainly make one bunch of editors we know happy. The first ImageWriter may not print in color, it may not have super-duper high-test letter-quality print, and it may not be the fastest printer around, but for dependable performance, you can't beat it.

Cynthia Field did choose the **ImageWriter II** as her favorite because of its status as the only color printer in the world of Apple IIs. Jim Trunzo agrees, calling it "one of the best I've come across." Eric Grevstad issued a plea: "Help! Apple Computer is stuffing the ImageWriter II down my throat!" With that, he settled on the compatible (but discontinued) **Epson MX-80**, as did Greg Glau.



2. BEST RAM CARD

RAMFACTOR

There was some consensus in the realm of memory expansion. Applied Engineering's **RAMFactor** took top honors in this category. Applied's **GS-RAM** and the original **RAMWorks** also garnered some votes. Not everyone on the panel agreed on which memory-expansion board is best, but we all agreed on one thing: Applied Engineering's cards are the best designed in the industry.



3. BEST IMAGE PROCESSOR

THUNDERSCAN

A variety of image processors were represented on our experts' ballots. Most went with **ThunderScan**, a device that reads photos or printed images through your ImageWriter. ThunderScan is inexpensive and easy to operate. Simply snap it in place of your ImageWriter's ribbon, and roll the picture in. You don't need a video camera to use it.

Paul Statt and Bill Kennedy preferred Redshift's **ImageWorks**, a digitizer that works with the Apple IIGS. Jim Trunzo chose AST's discontinued **VisionPlus**, also a GS video digitizer. Lafe Low likes **ComputerEyes GS**.



4. BEST APPLE II COMPATIBLE

LASER SERIES

We didn't have a whole lot of choice when selecting our favorite Apple II compatible: The first **Laser** shook up the Apple II industry when it appeared. It was significantly less expensive than the Apple IIe and IIc, but compatible with nearly all Apple II software, so much so that the Laser (there are now three models from which to choose) is the only Apple II compatible manufactured. The new 128EX/2 has just about everything—souped-up CPU, plenty of ports, ProDOS clock, and MIDI compatibility. ►

5. BEST MODEM

HAYES SMARTMODEM 1200

When forced to use modems, *inCider*'s editors chose Hayes and Epic models as the favorites. Voting for the **Hayes Smartmodem 1200**, says Eric Grevstad, "is like voting for the best first president of the United States." The 1200A model includes features such as call-progress monitoring, rotary and PABX dialing commands, built-in test modes, voice/data transmission, auto-dial/auto-answer capability, two phone jacks, and redialing. Three DIP switches on top give you easy access; a custom chip set uses the latest large-scale-integration technology. Paul Statt also chose the Smartmodem line as his preferred telecommunications tool. It's another Apple II veteran peripheral: The Hayes command set has become a standard in the industry. Any other modem trying to break ground is certainly lost without including the phrase "Hayes-compatible" among its virtues.

The newer, faster, smaller, and less expensive **Epic 2400** internal modem and **Epic 2400 Mini** caught the attention of Dan Muse and Lafe Low, who like to finish with telecommunications as fast as they can. Jeff Cable, Bill Kennedy, and Carol Holzberg cast their ballots for the **Prometheus** modem, **Apple Personal Modem**, and Applied Engineering's **Datalink**, respectively.

6. BEST DISK DRIVES

APPLE FLOPPIES

Apple Computer drives old and new were *inCider*'s favorite floppies. Paul Statt and Bill Kennedy chose the **Disk II** for its groundbreaking appearance as the very first floppy-disk drive and for its unfailing reliability. The **UniDisk 3.5** won votes for "heralding the next generation," according to Eric Grevstad, who also made a bid for the old Disk II. Lafe Low chose Apple's **DuoDisk** for convenience and nostalgia.

7. BEST HARD DISK

SIDER

Like a memory-expansion card, a hard-disk drive shouldn't be hard to get at or work with. You should have ready access to whatever programs or files you've stored there; it would also be nice if you didn't have to empty your bank account to pay for it. With those reasons in mind, most of our editors chose the ever-popular **Sider**. One 10-megabyte Sider stores as much as 70 floppies. The package includes the Winchester hard disk, interface card, cables, two floppies' worth of companion utilities, and an excellent manual. It's easy to set up, and you can link mulitple Siders, too. Average access time is only 155 milliseconds. It's a boon to the home-office and small-business user; its top performance makes it the right product at the right price.

Many of our editors and contributors voted for the hard drive they use every day. Paul Statt prefers the (discontinued) **AST Microstor**, while Jeff Cable leans toward the **GCC FX/20**. Most of us, however, echoed Eric Grevstad's chant, "Hooray for the affordable, popular **Sider**."

8. BEST ACCELERATOR

TRANSWARP

Like a hard drive, an accelerator should do its work unobtrusively and quickly. Applied Engineering's time-tested **Transwarp** wrapped up this category. If any piece of computer equipment ever deserved the description "quick and easy," it's the Transwarp. It combines a faster microprocessor with 256K of RAM—it's a little "computer on a card" that runs independently of your Apple, and about 3.1 times faster. Work is divided between the two: calculations that can be done quickly, such as adding long columns of figures, shift to the 4MHz chip, while slow jobs, such as communication with peripherals and functions that require exact timing, are taken care of by the Apple CPU. It can speed up a program's use of auxiliary memory, duplicating not only your Apple's ROM and main memory, but the second 64K on extended 80-column text cards. Programs that execute code in auxiliary memory, such as Managing Your Money and VIP Professional, run particularly fast with a Transwarp. The only reason we could imagine for not wanting this accelerator card is that it makes arcade games impossible.

The trendy types in our office—Dan Muse and Paul Statt—preferred the new chip on the block, Zip Technologies' long-awaited **Zip Chip**.

9. BEST JOYSTICK

FLIGHTSTICK

With all the games we play at *inCider*, we're definitely experts on joysticks. Still, there were differences in our personal preferences. The **Flightstick**, from CH Products, emerged the winner. No other joystick simulates the "stick" of a real airplane the way this one does: It makes simulated flight a more realistic experience than ever. It's *designed* like an airplane flightstick, with fire buttons at your index finger and thumb. When you close in on an enemy fighter, alien invader, or whatever, you're never far from your firepower.

CH's **Mach III** also won a vote from Eric Grevstad. Jeff Cable blasts space aliens with a **Gravix** joystick, while Jim Trunzo prefers to fly with a **Kraft KC III** or **Premium II**.

10. BEST MUSIC PRODUCT

BOSE ROOMMATE SPEAKERS

The **Bose Roommate** speakers sounded good to us as the premier music product for the Apple II. Hook these external speakers up to your Apple IIGS and you're in for a treat. They'll give your machine true stereo if you've got a sound card or digitizer board installed. Make sure your neighbors aren't home if you plan on cranking them up to full volume, though.

The **Mockingboard**, for its original status as the first sound card (it's no longer available) designed for making music on an Apple II, also collected a share of the votes. Paul Statt, when questioned about his favorite music product, thought long and hard before responding. His choice? A tuba.

To boldly go at speeds no man has gone before.

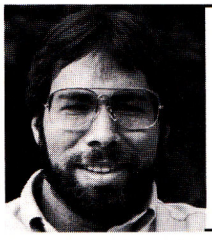


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"TransWarp is great! I have replaced all my other accelerators with it!"

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 tthe memory?

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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.

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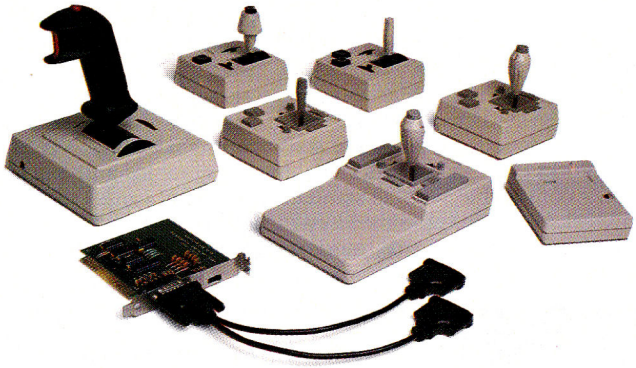
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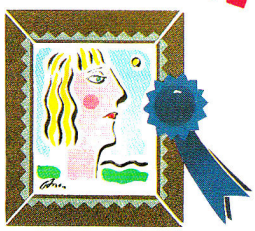
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San Marcos, CA 92069
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TOP TEN



INFLUENTIAL PEOPLE

Now hear this! The following ten people have very important opinions about the Apple II. Some are almost famous, others almost unheard of. But at inCider *we don't believe just anybody. These are the voices that make us sit up and take notice, the names we look for on panel discussions. These people make a difference. We at* inCider *talk to* them *when we need to know exactly what's going on in the Apple II world—whether that's the home, the office, or the school. (We've excluded the press, because you hear too much about us already.)*



1. MIKE BROWN

CENTRAL POINT. Developer of the Laser line, the only reasonably priced computers that run Apple II software in the world. His other achievements include writing the best-selling utility Copy II Plus, but it's his hardware that makes him important. Laser compatibles affect every Apple II user because they mark the low end for price: Apple dropped the price of the Apple IIc in 1988, probably in response to Central Point. Brown's machines were the first "Apples" to run fast, have 3½-inch drives built in, and have standard music interfaces. Look at today's Laser if you want to see tomorrow's Apple.



2. JAN DAVIDSON

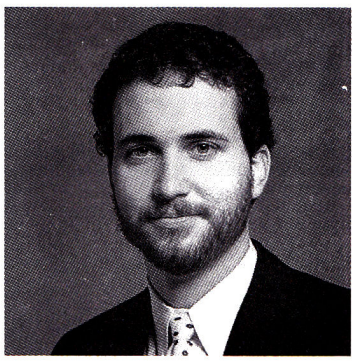
DAVIDSON & ASSOCIATES. Teacher and developer of educational software that works. Everybody else wants to make stuff this good. In October 1987 Davidson, along with Kathy Hurley from Mindscape and Cathy Carlston from Broderbund Software, founded Computer Learning Month, a unique cooperative effort among competitive companies. That's Davidson's style.

3. BILL DINSMORE



THE LEARNING CO. Another maker of quality educational software. Why is Learning Company software so good? Research. Everybody eventually takes advantage of Dinsmore's research. The trouble with doing things right, though, is that it often means doing things slowly. Focus groups, surveys, and testing take time. The Learning Company won't make the first, say, desktop-publishing program for schools, but it will surely make a high-quality one. Watch The Learning Company. Way back in the early '80s it created Rocky's Boots, which introduced the idea that computers could teach kids to think.

4. KEVIN HARVEY



CLARIS/STYLEWARE. Takes the Apple IIGS seriously. He gambled his young company, Styleware, on the GS and won when Claris bought it and GSWorks. Claris will be the most important GS software developer, and Harvey the most important Apple II fan at Claris. He listens to his customers, and that's what made Styleware's earlier products, MultiScribe and MultiScribe GS, so special. ►

Programs & Peripherals

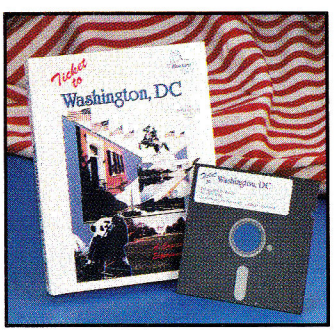
Modems

Anchor Automation	
1200E	119.
2400E	159.
Applied Engineering	
DataLink Modem 1200B *(Int II+, IIe or IIGS)*	139.
DataLink Modem 2400B *(Int II+, IIe or IIGS)*	185.
EPIC Epic 2400 Classic II Internal	155.
Epic 2400 Mini Modem Ext.	155.
Hayes Hayes 1200 Baud Smartmodem	299.
Hayes 2400 Baud Smartmodem	449.
MDIdeas Commlink 2400	179.
Practical Peripherals	
Practical Modem 1200 SA Mini	85.
Practical Modem 1200 SA	109.
Practical Modem 2400 SA	189.
Prometheus	
Pro Modem 2400 *(External)*	309.
Pro Modem 2400G *(Non Expandable)*	179.
Pro Modem 2400A *(Single Card)*	199.
Pro Modem 1200A *(Single Card)*	155.
Pro Modem 300c	82.
Supra Corporation	
Supra Modem 2400 *(Hayes Compatible)*	149.
U.S. Robotics	
U.S. Robotics Courier 1200	199.
U.S. Robotics Courier 2400	349.
U.S. Robotics Courier 2400E	379.
U.S. Robotics Courier HST 9600	689.

Printer Interface Cards

Apple	
Apple Super Serial Card	119.
Applied Engineering	
BufferPro 32K	99.
BufferPro 128K or 256K	Call
Serial Pro *(II+, IIe, IIGS)*	115.
Parallel Pro *(II+, IIe, IIGS)*	85.
Orange Micro	
Grappler C/Mac/GS	84.
ProGrappler *(Apple IIe or IIGS)*	84.
Serial Grappler Plus	62.
Hot Link	49.
SMT	
Print Tech II *(Parallel Interface)*	37.
Thirdware	
Finger Print GSi Ver 2 *(Includes Desktop Accessories-IIGS)*	79.
Finger Print Plus *(Specify Cables: Parallel, Serial or ImageWriter II-II+ & IIe)*	89.

Ticket to Washington, DC by Blue Lion Software



Ticket to Washington, DC takes you to our nation's capital in pursuit of a famous American, past or present. While you're pursuing your quarry, you'll visit up to 42 locations including the Capitol, the White House, Georgetown, the Mall and more. You'll have 2500 facts and clues available from the database, plus 7 detailed 3-D maps to help solve the mystery. *Ticket to Washington, DC* requires an Apple IIe/IIc/IIGS with 128K memory. Joystick or mouse optional.

Ticket to Washington, DC ..... **30.**

Utilities & Languages

Absoft	
AC/Basic *(16-bit BASIC Compiler for IIGS)*	84.
Beagle Brothers Beagle Compiler	46.
Funk Software	
Sideways Prodos & Dos 3.3	45.
Roger Wagner SoftSwitch *(IIGS)*	39.
Merlin 8/16 *(IIe, IIc, IIGS)*	79.
The Byte Works ORCA/Pascal *(IIGS)*	69.
ORCA/Pascal Desktop Debugger	80.
ORCA/M *(IIGS)*	39.
ORCA DeskTop	34.
TML Systems	
TML Basic *(IIGS)*	84.
TML Pascal *(IIGS)*	*Special* 84.
TML Source Code Library *(IIGS)*	35.
TML Speech Toolkit *(IIGS)*	49.
Zedcor	
ZBASIC 4.0 Interactive Compiler	*Special* 39.

Disk Drives & Hard Disk SubSystems

American Micro Research *(Micro Sci)*	
A5 D Half Height 5¼" Drive *(IIGS Daisychain)*	165.
A.5 Half Height *(II+ & IIe)*	139.
A.5C Half Height *(IIc)*	139.
Micro Sci C2 Controller	52.
Applied Engineering	
Transdrive 360K	219.
Transdrive Dual 360K	305.
Transdrive Half Height 360K	119.
CMS	
"SD Series - Stack" Platinum IIe, IIGS	
20 MB w/SCSI II card	650.
43 MB w/SCSI II card	850.
60 MB w/SCSI II card	950.
Cutting Edge	
XL 30 Plus SCSI Hard Drive *(IIe & IIGS)*	629.
XL 45 Plus SCSI Hard Drive *(IIe & IIGS)*	829.
Hi-Tech Peripherals	
Full Height 5¼" Drive for Apple IIe *(Beige)*	129.
Half Height 5¼" Drive for Apple IIe or IIc *(Beige)*	129.
Half Height 5¼" Drive for Apple IIe or IIc *(Platinum)*	149.
Half Height 5¼" Drive Platinum for IIGS	169.
Apple IIc Drive Adaptor	15.
Mitac	
AD-3C Slimline IIc	109.
Rodime Rodime 20Plus Ext HD *(IIe, IIGS)*	629.
Rodime 45Plus Ext HD *(IIe, IIGS)*	939.
Rodime 60Plus Ext HD *(IIe, IIGS)*	1019.
Rodime 100 Plus Ext HD *(IIe, IIGS)*	1169.
Rodime 140 Plus Ext HD *(IIe, IIGS)*	1319.
Video Technology Universal Disk Controller	79.
Laser 800KB Drive	185.
Universal Disk Controller/800KB Drive Bundle	259.

The Conserver for the IIGS by MDIdeas



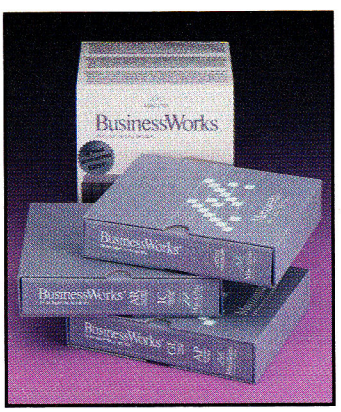
The Conserver consolidates your Apple IIGS and eliminates desktop clutter. *The Conserver* offers six switched AC outlets controlled by 3 front panel switches with LED indicators, a built-in fan to reduce heat and protect against failures, and tri-stage surge suppression including EMI/RFI filters for noise free AC power to your IIGS. *The Conserver* holds one or two Apple 3.5" drives, and comes with a special 3.5" disk holder that takes the place of a second drive. *The Conserver* organizes and protects your valuable investment!

The Conserver for the IIGS ..... **99.**

Accessories

Apple Computer Apple Mouse IIe	125.
Apple Mouse IIc	85.
Applied Engineering TimeMaster H.O.	79.
IBM Style Keyboard or Sonic Blaster *(IIGS)*	119.
Audio Animator *(IIGS)*	185.
Applied Visions	
Future Sound Digitizer *(IIGS)*	179.
Asher Engineering	
Turbo Trackball *(IIe or IIGS)*	69.
CH Products Hayes Flight Stick	52.
Hayes Mach II Joystick *(Beige or Platinum)*	29.
Hayes Mach III Joystick *(Beige or Platinum)*	36.
Hayes Mach IV Plus Quad or ADB	65.
Mirage Quad or ADB (Turns joystick into mouse)	39.
Curtis Curtis Emerald	36.
Curtis Ruby	55.
Cutting Edge EADB-105 Extended Keyboard *(IIGS)*	135.
DataDesk DataDesk ADB-101 Enhanced Keyboard *(IIGS)*	149.
Digital Vision Computer Eyes II or C	109.
Computer Eyes IIGS	209.
Ergotron Mouse Cleaner 360° *(IIGS)*	15.
Kalmar	
Teakwood Rolltop Disk Case *(Holds 50)*	18.
Kensington Mouse Pocket *(Reg. or ADB)*	8.
Mouseway *(Mousepad)*	8.
Apple IIGS Dust Cover or Imagewriter I or II Cover	9.
Mouse Cleaning Kit w/Pocket	17.
Disk Drive Cleaning Kit *(3.5" Drives Only)*	20.
Apple Security System	34.
Printer Muffler 80	43.
Printer Muffler 132	58.
Printer Muffler Stand 80 or 132	21.
AntiGlare Filter IIGS	39.
System Saver *(Platinum or Beige)*	69.
System Saver *(IIGS)*	79.
New Turbo Mouse *(Reg. or ADB)*	119.
Kraft	
Universal 3 Button Joystick *(IIe or IIc)*	34.
Koala Technologies	
Koala Pad Plus w/Graphics Exhibitor	84.
Kurta IS ADB Tablet w/stylus *(IIGS)*	339.
MDIdeas Digitizer Professional *(IIGS)*	139.
The Conserver *(IIGS Switched Surge Suppressor w/Fan)*	*Special* 99.
SuperSonic *(Stereo Card for IIGS)*	49.
SuperSonic Digitizer *(IIGS)*	49.
Mouse Systems A+ Mouse *(IIc)*	65.
A+ ADB Mouse *(IIGS)*	85.
MousTrak MousePad 7"x9" Size	8.
MousePad 9"x11" Size	9.
MousePad L/F *(Low Friction)*	9.
Street Electronics Cricket *(IIc)*	125.
Echo IIb Speech Synthesizer *(II+, IIe, IIGS)*	109.
Ribbons *Available colors: black, blue, brown, green, orange, purple, red, yellow, silver or gold*	
ImageWriter Ribbon-Color	4.
ImageWriter Ribbon-Black six pack	20.
ImageWriter II - 4 Color Ribbon	9.
ImageWriter Rainbow Pk. (6 Colors)	20.

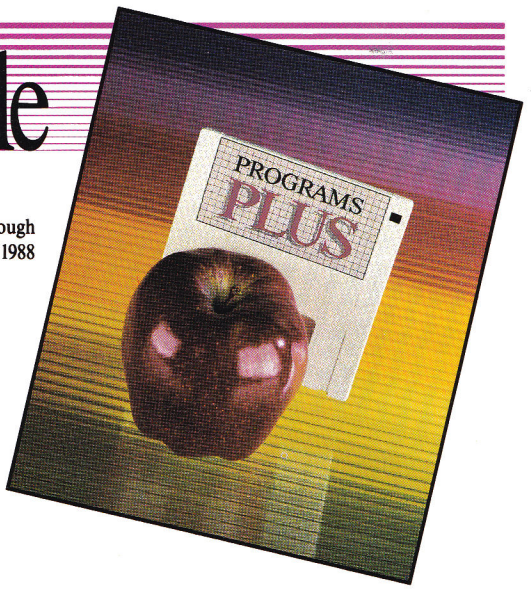
BusinessWorks by Manzanita



BusinessWorks is the accounting package for small and medium sized businesses that need G/L, A/P, A/R, inventory, and payroll 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.**

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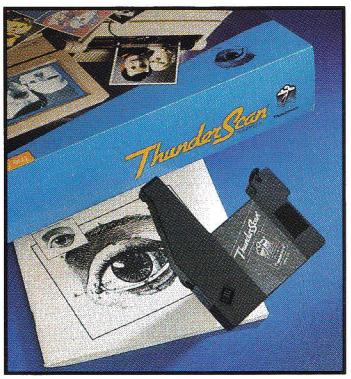


Specials good through
December 31, 1988

Communication Software

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

ThunderScan by Thunderware



ThunderScan brings high-resolution scanning technology to the Apple II at a low, affordable price! Just pop the ribbon out of your ImageWriter printer and insert the *ThunderScan* scanning cartridge and you're ready to scan. *ThunderScan* supports 16 shades of gray, allows user control of contrast and brightness, and works with all Apple II screen display modes. *ThunderScan* is fully ProDOS compatible, and you can export your scans to Dazzle Draw, Paintworks, Deluxe Paint and all other paint programs for custom editing!

ThunderScan ..... **179.**

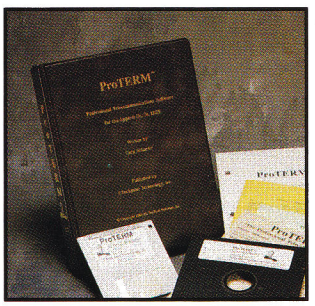
Apple Compatible Computers

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 Green or Amber Monitor	99.
Laser 128EX Computer	459.	Laser 128 2nd Disk Drive	
The Laser EX includes a Built-in RAM Expansion Board, Universal Disk Controller, Built-In Expansion Slot, and Ports for all Peripherals!		*(5¼", ½ 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 Locksmith 6.0	36.	**FWB Software**	
Central Point Software		Disk Util II *(IIGS)*	52.
Copy II Plus *(5.25" & 3.5" Bit Copy)*	23.		

ProTERM 2.0 by Checkmate Technology



ProTERM 2.0 is the professional telecommunications software for everyone who owns an Apple IIGS, IIe, IIc, or Laser 128 computer with 128K+ of RAM. Its comprehensive 170-page manual, complete Hayes compatibility, and easy-access pop-up menus make it versatile and simple. Every user will benefit from its on-screen help files, the full-feature text editor, and large assortment of error-free protocols. Professionals will value *ProTERM's* advanced features which include Procedure Files to store macros, batch and disk transfer capabilities, and its elapsed time counter (requires clock card). *ProTERM's* simple installation, password security option, and VT-100 terminal emulation make it the only choice for communicating in home, school, or business environments.

ProTERM 2.0 ..... **95.**

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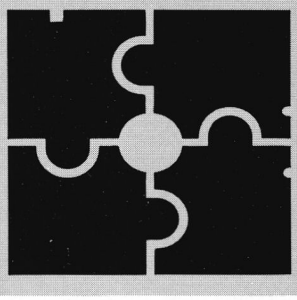
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- **Diversi-Copy** by Bill Basham
  Copy your 3.5- and 5.25-inch diskettes at lightning speed! Single or multiple drive copies. Although not required, uses memory-expansion for single pass copying . . . Any Apple II.

- **Diversi-Cache** by Bill Basham
  Boost your Apple 3.5-inch disks (not UniDisk 3.5) to RAM disk speed without the hassle of loading and saving to a RAM disk! Even doubles the write speed under ProDOS . . . 512K IIGS with at least one 3.5-inch drive.

- **Diversi-Key** by Bill Basham
  Add macros and mouse functions to all your Apple programs. A complete collection of Appleworks 2.0 macros and mouse functions provided. And add your own . . . Apple IIGS.

- **ProSel** by Glen Bredon
  Hard disk drive salvation: Program selector and utilities in one simply elegant package. Use mouse or keyboard to choose applications, or copy files and disks. ProSel also features advanced ProDOS tricks for recovering and reconstructing lost files . . . Any ProDOS-compatible Apple II.

- **Rx** by Glen Bredon
  The perfect antidote for viral infections! Detect viral infections in your ProDOS programs. Protect your system and programs . . . Apple IIGS or 65802-Apple IIe/c.

- **Squirt** by Steve Stephenson
  No more pathnames! A single key-press selects your next application from a disk catalog menu. Memory-resident for instant access; compatible with all ProDOS versions . . . Any ProDOS-compatible Apple II's.

- **PathFinder** by Randy Brandt
  You'll never have to memorize or type in a pathname for AppleWorks again! This must-have enhancement lists all subdirectories and AppleWorks files for easy selections . . . Any Apple II with AppleWorks version 2.0/2.1.

- **PatchMania** by Randy Brandt
  Skip entering a date into AppleWorks; re-order your file lists; pre-load only your favorite application; and much more! . . . AppleWorks 2.0/2.1 enhancement collection for any Apple II.

- **Late Nite Patches** by Randy Brandt
  Add MouseText to your AppleWorks menus; manage several directories at once; load ASCII and DIF files from a catalog list; and more! . . . AppleWorks 2.0/2.1 enhancement collection for any Apple II.

- **MiniPaint** by Randy Brandt
  This low-priced paint system for the IIGS rivals the big guys! Full-screen, 320- and 640-mode color with high-speed brushes, auto-shadowing, special pen modes, fat-bits, lasso, and much more . . . 512K Apple IIGS.

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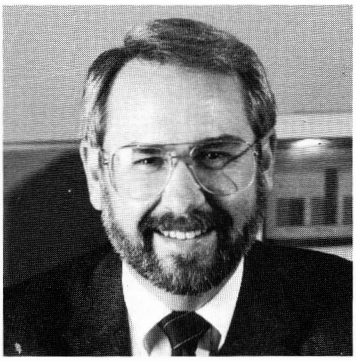
Specify disk size:		No. Copies	$Total
◣ ◘	Diversi-Copy	____ × $30 ea.	_____
◣ ◘	Diversi-Cache	____ × $35 ea.	_____
◣ ◘	Diversi-Key	____ × $45 ea.	_____
◣ ◘	ProSel	____ × $40 ea.	_____
◘	Rx	____ × $25 ea.	_____

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◘	Pathfinder	____ × $20 ea.	_____
◘	Patch Mania	____ × $20 ea.	_____
◘	Latenight Patches	____ × $20 ea.	_____
◣	Mini-Paint GS	____ × $25 ea.	_____

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5. DEL YOCAM

APPLE COMPUTER. Likes the Apple II. He proved it to us when he stepped down from his position as chief operating officer to become president of the Pacific and Education operating groups at Apple. Yocam's first love was not the Orient; it was the Apple II. Apple finally has an Apple II champion running the Apple II show. It's a compromise not everybody likes—it meant giving up the Apple II in business—but we think Yocam will keep the Apple II going strong into the next century.

"We know that plenty of Apple IIs are being used in business. . . [but] the Apple II is marketed to the educational consumer primarily; the Mac to business. . . . For many people in the world, the Apple II has all the power they need."



6. TOM SNYDER

TOM SNYDER PROD. Has strong opinions about computers in education. His opinion differs from Apple's, because Snyder doesn't think every student needs his or her own computer. He won't help sell hardware, or get rich selling software, but he may just be right. Tom's a teacher himself, and knows that all the software in the world—drill-and-practice *or* thinking skills—can't correct papers or help students cooperate. Tom's worth listening to; you'll be entertained, at any rate.

"It's time we stopped figuring out ways for the parents to get away from the kids—like TV. Just as [Tom Snyder Productions] has tried to put the teacher in the central role at school, we have to include the parent in the home."

7. DAN POTE

APPLIED ENGINEERING. Sets prices and standards for the Apple II community. RamWorks, Transwarp, Timemaster, PC Transporter—every product from Applied becomes the standard for the industry. Applied is very hard to compete with. We've often wished that Apple IIs came out of Carrollton, not Cupertino. Pote doesn't talk much, but his actions speak volumes. He pioneered memory expansion and acceleration for the Apple II—and Apple followed Applied's lead. Today Applied's betting on graphics and high-fidelity audio; we hope Apple's still listening.

8. BARNEY STONE



STONE EDGE TECH. Stone thinks the Apple II is a fine business computer. He's right, and he won't be denied. Lots of folks realize how powerful the Apple II is; Stone proves it. DB Master Version Five and DB Master Professional are the most powerful database managers you'll find on any personal computer. Has Stone convinced Apple, or the business community? Not yet. But he keeps trying.

"Since larger, more powerful systems [than the Apple II] are available, people assume they need them. In reality, a lot of the power in other systems is used up by massive operating systems and graphics displays that make them 'friendlier,' but not necessarily more useful."

9. DAVE SZETELA



APPLE COMPUTER. Sets the direction for Apple II software evangelism. He's a journalist and a programmer—we couldn't ask for better qualifications in the guy who tells software publishers what to publish. As a journalist, he knows how to pull trends out of details; as a programmer he knows what's possible with the Apple IIGS and what's not. Absolutely nobody knows more than Szetela about Apple II software. It's not a job we envy him, but we're glad a knowledgeable navigator's doing it.

10. ROB MOORE

APPLE COMPUTER. If you spend any time at all on AppleLink or any other on-line service with Apple II users, you've seen the name. Rob's an engineer who spends a great deal of time listening to you, and he's really close to the people who are building the next II. What sets Rob apart from the average Apple employee is that he listens to your gripes and problems with his baby, the Apple IIGS. What sets him apart from the magazine editors and user-group presidents who are happy to hear your complaints is that he's in a position to do something about them.

Product Information

AC/BASIC, $125
ABSoft
2781 Bond Street
Auburn Hills, MI 48057
(313) 853-0050
Reader Service No. 311

AppleWorks, $249

MultiScribe GS 3.0, $99.95

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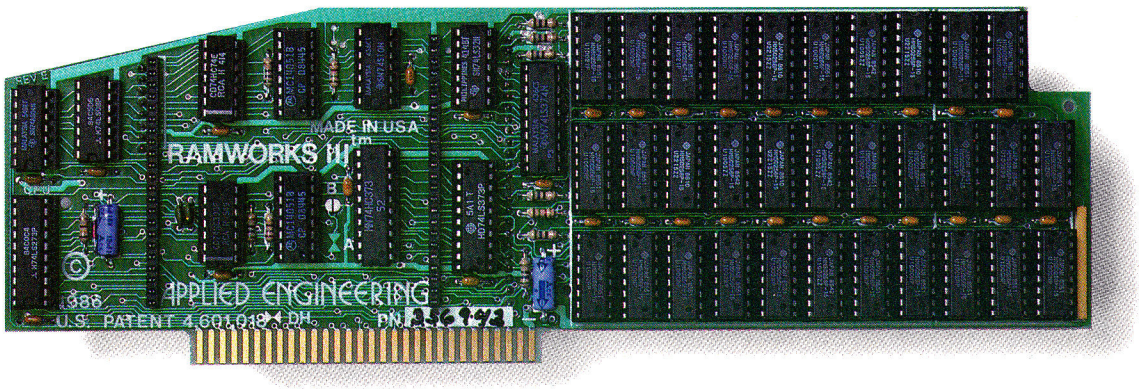
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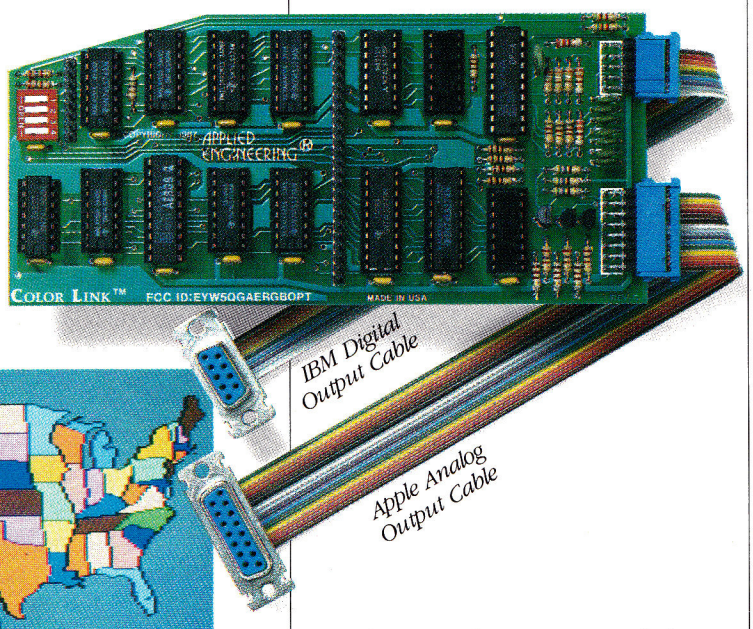
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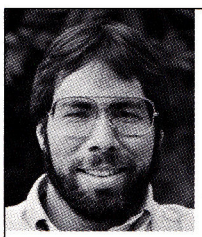
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Steve Wozniak, the creator of Apple Computer

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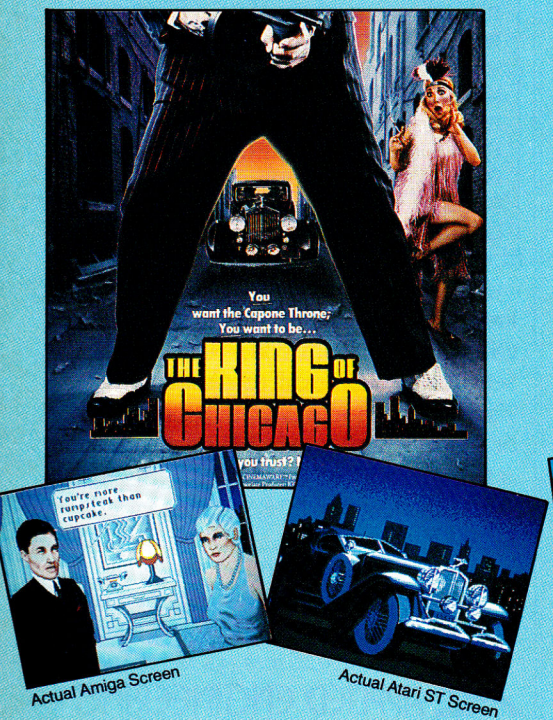
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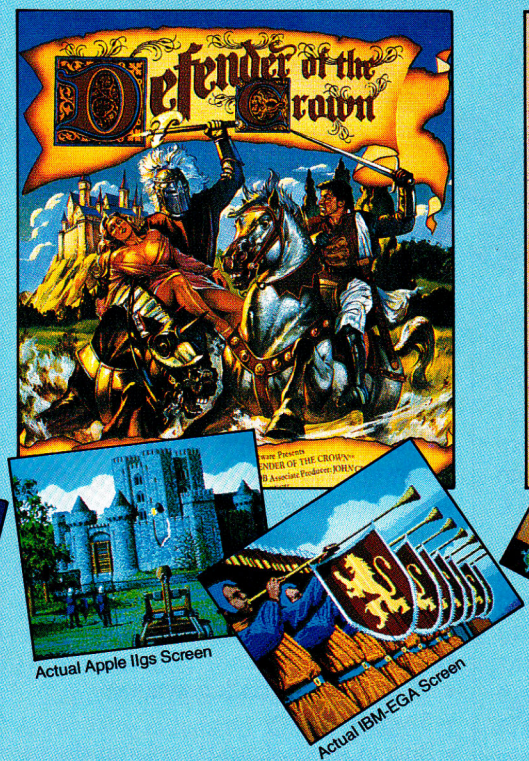
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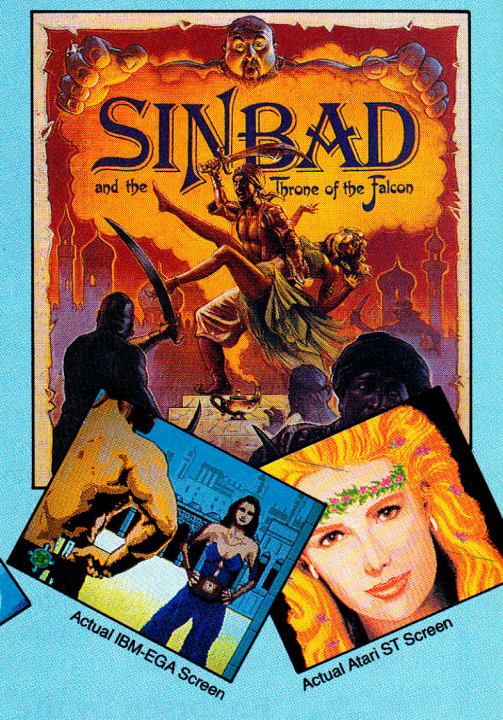












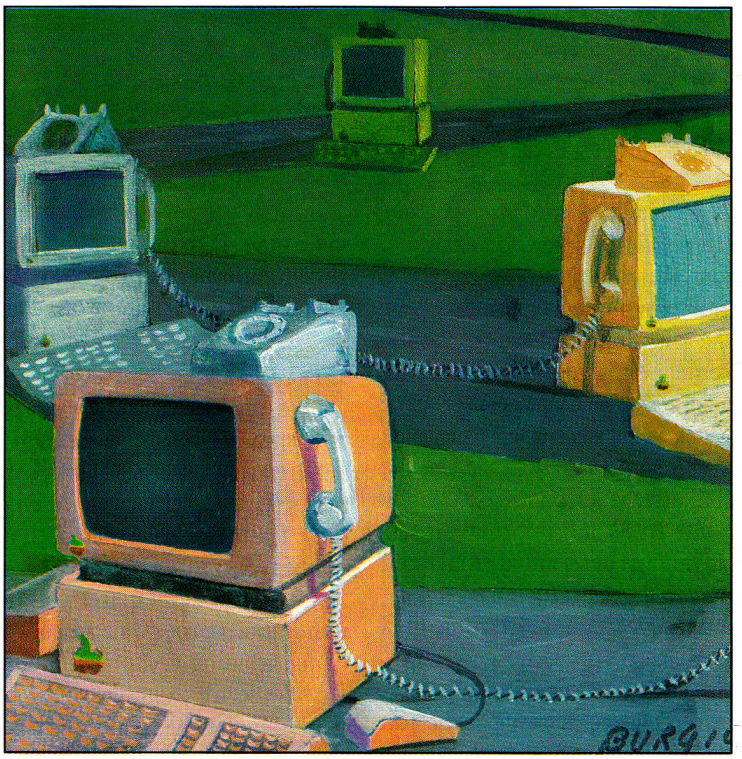
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POWER ON LINE



For Apple II telecommunicators, all roads lead to the world of on-line services. Here's a look at the powerful programs that can get you started.

by Tom Sherman, Contributing Editor

Remember those television commercials that used to show a snazzy car perched atop a tall butte overlooking a vast empty space? Of course you could gun the motor and listen to the radio, but wouldn't that machine be more exciting on the highway?

For hundreds of thousands of computer users on line, that image of isolated power might also represent all those Apple IIs that aren't yet connected to the electronic highways of entertainment and information. A map of today's on-line world reveals that the number of places to visit is growing; in this country alone, for example, there are more than 5000 electronic bulletin-board systems (BBSs). (See the accompanying sidebar for a description of a new on-line problem that has cropped up as BBSs proliferate.) What's more, the cost of a modem—the equipment that lets your Apple communicate with other computers over telephone lines—is falling fast. (Look for *inCider*'s rundown of 2400-baud modems in an upcoming issue.)

Apple II owners can also choose from a number of communications programs in new versions that simplify connections for on-line beginners and permit sophisticated operations for experts. To help you decide which of these programs best suits your particular needs, we'll look first at what they have in common and then at their distinctive features.

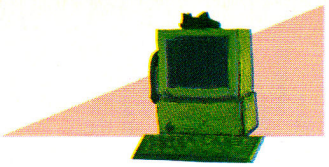
Today's communications software requires little more technical knowledge than do other powerful programs. Read your program's manual carefully, though, to ensure maximum ease of use and efficiency of operation. Program features fall into three general categories: off line, on line, and utilities.

GETTING STARTED

Like your word processor, which needs information about your printer, your communications program needs to "know" something about the hardware and peripherals with which it will work. Most current programs provide easy-to-use menu selections to identify your equipment—the type of modem and (optional) printer you're using, for instance, and the slots, cards, or ports to which they're connected.

Before you buy software, make certain it'll work with your system. Flexibility is one of the Apple II's strengths, but it's no easy task to develop communications programs compatible with the variety of hardware and software setups your Apple can use. All programs reviewed here can "talk" to external Hayes-compatible modems and Apple Super Serial Cards, but not ►

Illustration by Trish Burgio



necessarily to other brands. Not all programs run on the Apple II Plus or unenhanced IIe or from a RAM disk. Most of today's communications programs are ProDOS-based (now essential to download files from major information services), but if you're not using ProDOS yet, you can still find DOS 3.3 programs.

Once your program is installed, you can send your modem commands that prepare it to "speak the language" of the remote computer you want to call and to speak at its speed. All communications programs let you set the *parameters* of "word" length (7 or 8 bits), error checking (*parity*), and speed (*baud rate* or number of bits per second transmitted). With the telecommunications program in *command mode*, you can also address other modem functions—dialing a telephone number, for example, turning off the modem's speaker, hanging up.

If you want others to call your unattended computer, your software must able to answer the telephone and to manage the caller's activity—sending a welcome message perhaps, requiring a password, even giving the caller access to data files. If you're going to be doing specialized work while connected to remote computers, you may need software with *terminal emulation*, the ability to make your Apple II imitate the keyboards and video displays of other equipment. Some BBSs and information services, such as **Portal**, also take advantage of terminal emulation.

After only a few times on line you'll get pretty bored dialing phone numbers, sending passwords, looking for electronic-mail messages, and saving them to disk. Fortunately, good communications programs automate such functions and other repetitive tasks. Look for dialing directories (which permit you to select frequently called BBSs and information services) and for log-on scripts, *macros* (series of shorthand keystrokes substituting for longer strings of characters and commands), and command files to navigate on line quickly and accurately.

EXCHANGING INFORMATION ON LINE

So now you're connected to a remote computer (*terminal mode*). The information you'll exchange with others on line is of two kinds—plain *text messages* (such as electronic mail) and *files* (such as BASIC programs or AppleWorks templates).

You may be content simply to read text as it comes, stopping the flow when it scrolls by faster than you can read. Because the most interesting information always seems to scroll away before you can stop it, many of today's programs feature a *review buffer*, a section of random-access memory that lets you scroll back through the most recently received text. Sometimes you'll want a more permanent record; you can always save incoming text to disk or send it to your printer.

You'll be sending messages, too, so communications programs control the flow of outgoing text to suit different remote systems—sending a character or a line at a time, for example, or waiting for prompts.

Transferring files is a more delicate business than transferring plain ASCII text. All good communications programs offer at least one *protocol* to ensure accurate transmission even over noisy telephone lines; the most useful is *XModem*, or *Christensen*, which has several variations. The best of the current programs also support *Binary II* file format, which transfers ProDOS files together with their names, types, and lengths—information stored separately from the file itself on disk. If you use the network **PC Pursuit** or information services, such as **CompuServe**, that suffer network delays, you may need a program that can extend the waiting period in XModem transfer.

Many people enjoy *chatting* on line—typing messages back and forth with others connected to a remote computer at the same time. Like packet-radio users, they prefer those few Apple II communications programs offering a split screen, separating incoming from outgoing messages.

UTILITIES

Like other kinds of software, communications programs have different personalities, defined in part by certain utilitarian features that, although not essential to communication, make the process easier and more enjoyable. The most important of these features—accessible both on line and off—are the editor, utilities, and support.

A built-in editor spares you from having to leave your communications program and boot up a word processor to manipulate incoming text or write outgoing messages.

Suppose, for example, you've been on line accumulating stock-market information and are holding it temporarily in memory. Use your communications program's editor to delete unnecessary details, and you can save only useful facts to disk, eliminating several time-consuming steps. Similarly, you can save time—which, on line, often means money—by writing messages in the editor off line, then connecting and sending them quickly. If you expect to print much of the text you send or receive, look for programs that let you format printed copy, too.

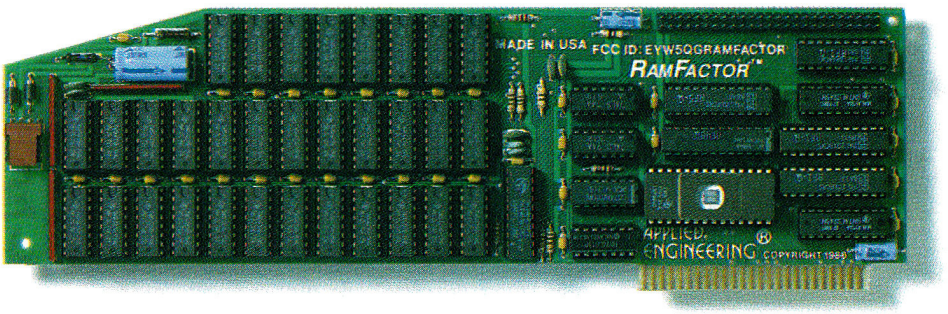
Once you begin exchanging ideas and programs, you'll be glad to have a communications program that helps manage information by letting you format and catalog disks; create subdirectories; copy, rename, and delete files; and cope with different file types. Many programs also let you choose from a list of available volumes and files and print text files to the screen.

Like other powerful software, communications programs have many different commands. Although using them will eventually become second nature, it's good to know that most of these programs offer on-line help to remind you of the choices. Most programs let you select options from menus or windows, and some display the most important options in a line at the top of the screen.

Telephone support is available, of course, for the commercial programs; more and more developers now provide support on ►

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The Ultimate Slot 1-7 Memory Card



RamFactor is automatically recognized as additional workspace memory by AppleWorks 1.3, 2.0 and 2.1. In addition, RamFactor's memory can be used for creating the ultimate in program speed—a lightning-fast RAMdisk for the Apple IIGS, IIe, II+, Franklin and Laser 128. A RAMdisk does not depend on the slow moving parts of a conventional floppy drive. RAMdisks eliminate wear and tear on your disk drive plus your programs run up to 20 times faster! When a program is in RAM, your computer won't have to search for it in the mechanical disk drive during program operation. With RamFactor, you can have up to 9 seperate simultaneous RAMdisks—even in different operating systems! Now you can instantly switch from one program to another or even switch from AppleWorks to DOS 3.3 to CP/AM to Apple Pascal 1.3 to ProDOS.

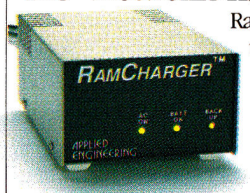
Apple Memory Expansion Card Compatible

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

2.0 AppleWorks Power

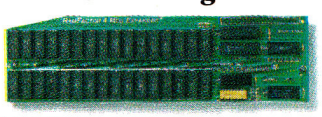
Other slot 1-7 cards can give AppleWorks a larger desktop, but that's the end of their story. RamFactor provides many more powerful functions. It's the only slot 1-7 card that increases AppleWorks 2.0 internal limits by increasing the maximum number of records in the database to 22,600, increasing the maximum number of lines permitted in the word processor to 22,600, and expanding the clipboard size to 2,250 lines maximum. RamFactor is the only standard slot card that will automatically load all of AppleWorks into RAM, dramatically increasing speed and eliminating the time required to access the program disk. It will even display the time and date on the AppleWorks screen with a ProDOS clock. RamFactor will automatically segment large files so they can be saved on multiple 5¼" and 3½" floppies or a hard disk. All this performance is available for the Apple IIe, Laser 128, Franklin or 64K Apple II Plus when used with an 80 column card. No other standard slot card comes dose to enhancing AppleWorks so much.

The "Electronic Hard Disk"



RamCharger is an optional battery back-up device, (about the size of a disk drive), that can plug into a connector on RamFactor. With RamCharger added to RamFactor, your program will appear almost instantaneously when you turn on your computer. RamCharger contains LED's that let you know RamFactor's reserve power status. Since RamCharger has its own built-in power supply, it can retain RamFactor's memory indefinitely. Plus, RamCharger's battery will continue backing up RamFactor's memory for up to 10 hours during power failures. An optional "Y" cable is also available that allows one RamCharger to power two fully expanded RamFactors.

If 1 MEG Isn't Enough



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

Features

- Compatible with Apple IIGS, IIe, II+, Franklin and Laser 128
- 256K to 1 MEG on main board with 256K memory chips; expansion port supports up to 5 MEG with Expander option
- 100% Apple Memory Expansion Card compatible
- RamCharger battery back-up option available for permanent storage
- Reduces power strain to internal power supply with RamCharger option
- Fully socketed and user upgradeable
- Expands internal limits of AppleWorks 2.0
- Automatically recognized by ProDOS, DOS 3.3, Apple Pascal 1.3 and CP/AM
- Built-in RAMDrive software (true RAMdisk not disk caching)
- Graphic memory test included
- Allows Apple II+ to run AppleWorks 2.0 without buying additional software
- Automatically recognized by AppleWorks 1.3 and 2.0
- Fits in any I/O slot except slot 3
- 5 year warranty — parts and labor
- Proudly made in the U.S.A.

RamFactor with 256K	**$299**
RamFactor with 512K	**$449**
RamFactor with 1 MEG	**$749**
RamFactor Expander with 1-4 MEG	**CALL**
RamCharger backup option	**$179**
"Y" cable	**$24**

(Allows one RamCharger to power two RamFactors.)

Order RamFactor today . . . with 15 day money back guarantee and our five year warranty. *See* your dealer or *call* (214) 241-6060, 9 a.m. to 11 p.m., 7 days, or *send* check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 if outside U.S.A.

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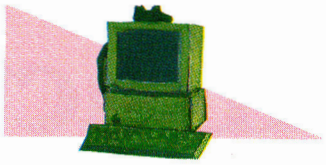
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P.O. Box 5100, Carrollton, TX 75011

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Product Information

Apple Conference Terminal (A.C.T.) 2.0.2
available on GEnie
(Protree RoundTable)
shareware $20

AppleLink—Personal Edition
Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014
(408) 996-1010
$35 annual subscription fee
$6 per hour
nonprime time
$15 per hour prime time

Reader Service No. 375

ASCII Express Professional (ProDOS 4.31P, DOS 3.3 4.2, rev 1), $129.95
MouseTalk 1.5, $119.95
United Software Industries
8399 Topanga Canyon Blvd.
Canoga Park, CA 91304
(818) 887-5800

Reader Service No. 376

COMMAND.COM, $69
Pinpoint Desk Accessories, $89
Point-to-Point 2.2.1, $129
Pinpoint Publishing
5865 Doyle Street
Suite 112
Emeryville, CA 94608
(415) 654-3050
(415) 654-8084 (BBS)

Reader Service No. 377

CommWorks 1.4
PBI Software
1163 Triton Drive
Foster City, CA 94404
(415) 349-8765
$95

Reader Service No. 378

DataLink
Applied Engineering
P.O. Box 5100
Carrollton, TX 75011
(214) 241-6060
$179 1200-baud
$239 2400-baud

Reader Service No. 379

Epic Technology, Inc.
5680 Stewart Avenue
Fremont, CA 94538
(415) 683-0932
(800) 634-9992 (outside CA)

Reader Service No. 380

Freeterm GS
public-domain program
available on line

GEnie
GE Information Service
401 North Washington St.
Rockville, MD 20850
(301) 340-4494
$29.95 sign-up fee

Reader Service No. 381

Kermit-65 3.80
public-domain program
available on line

Modem MGR 1.5
MGR Software
305 S. State College Blvd.
Suite 101
Anaheim, CA 92806
(714) 993-0294
$49.50 plus $3 shipping

Reader Service No. 382

ModemWorks 2.0
Living Legends Software
P.O. Box 4313
La Mesa, CA 92044
(714) 676-1940
(619) 281-7222 (BBS)
$59.95

Reader Service No. 383

MouseWrite
Roger Wagner Publishing
1050 Pioneer Way
Suite P
El Cajon, CA 92020
(619) 442-0524
$149.95

Reader Service No. 384

PC Pursuit
Telenet Communications Corporation
12490 Sunrise Valley Drive
Reston, VA 22096
(703) 689-5700
(800) TELENET
$25 sign-up fee
$25 per month
unlimited calling

Reader Service No. 385

Portal
Portal Communications Co.
19720 Auburn Drive
Cupertino, CA 95014
(408) 973-9111 (voice)
(408) 725-0561 (modem)

Reader Service No. 386

ProTerm 2.01
Checkmate Technology, Inc.
509 South Rockford Drive
Tempe, AZ 85281
(602) 966-5802
$129

Reader Service No. 387

Softerm 2 2.53
Softronics, Inc.
7899 Lexington Drive
Suite 210
Colorado Springs,
CO 80920
(719) 593-9540
(800) 225-8590

Reader Service No. 388

The Source
Source Telecomputing
1616 Anderson Road
McLean, VA 22102
(703) 734-7500
$29.95 sign-up fee

Reader Service No. 389

Talk Back 1.3
Russ Systems
1344 Pacific Avenue
Suite 103
Santa Cruz, CA 95060
(408) 458-5080
(408) 425-INFO (BBS)
$79

Reader Service No. 390

Talk Is Cheap 2.03
Don Elton
3207 Berkeley Forest Drive
Columbia, SC 29209-4111
(803) 776-3936 (BBS)
shareware $30
available on line

Reader Service No. 391

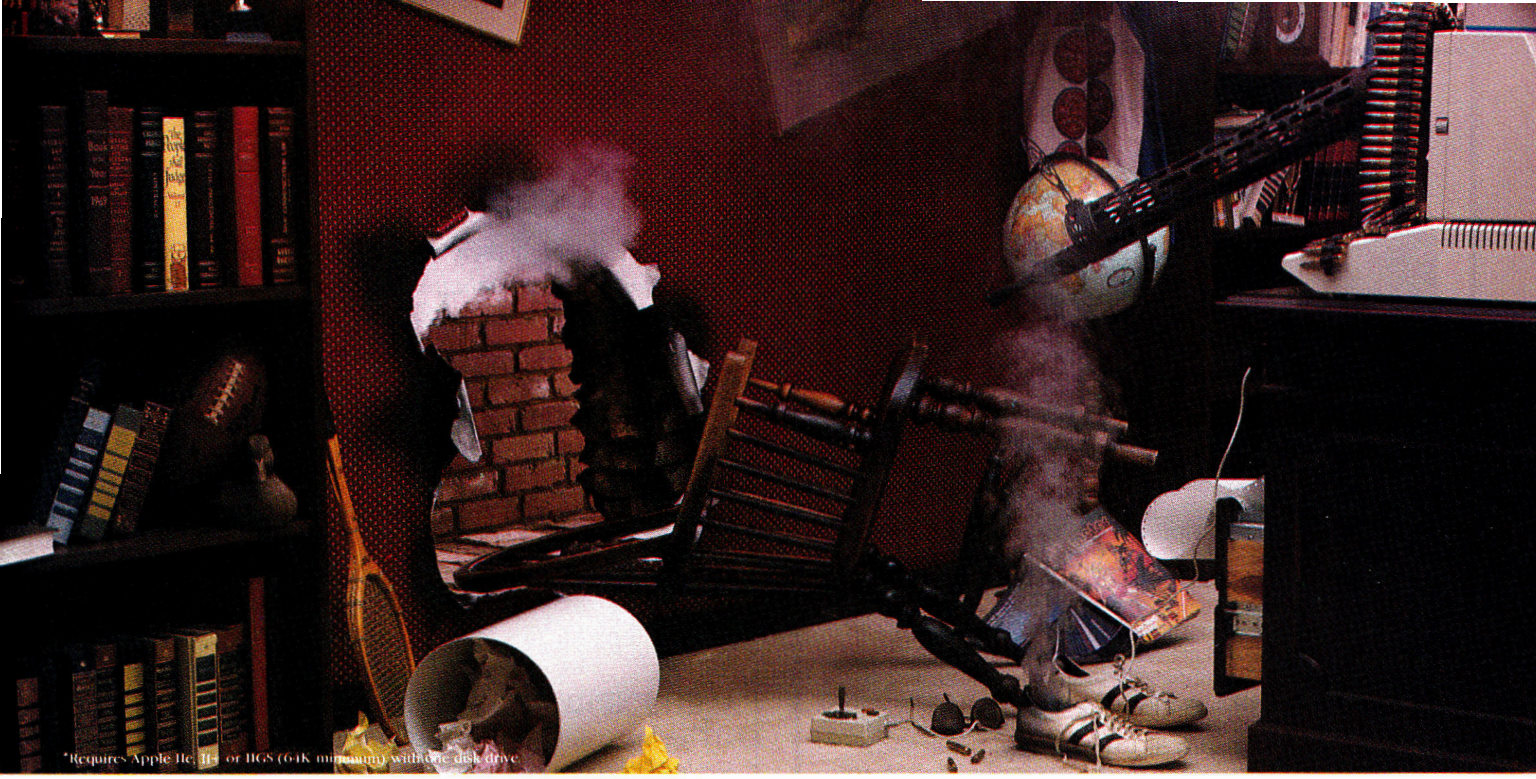
Vidtex 4.1
CompuServe Information Service
P.O. Box 20212
5000 Arlington Center Boulevard
Columbus, OH 43220
(614) 457-0802
$39.95

Reader Service No. 392

XTERM
Hyperdyne Software
P.O. Box 641156
Chicago, IL 60664-1156
(312) 973-3357
shareware $25
plus $5 shipping
$8 shipping overseas
requires COMMAND.COM

Reader Service No. 393

Z-Link
Dave Whitney
450 Memorial Drive
Cambridge, MA 02139
shareware $25
available on GEnie
and CompuServe

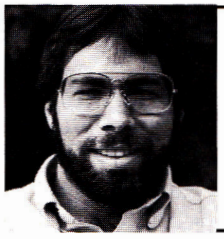


Prepare to be blown away by your Apple.™

Phasor produces sound effects, music, and speech so striking, Applied Engineering feels you should be warned.

Have a weak heart? Don't read any further. And by all means, *don't go near* an Apple IIe, II+ or IIGS equipped with the new Phasor sound synthesizer from Applied Engineering.

But those of you with the right stuff ... prepare yourself. Because the Phasor is like nothing you've heard before. It's a sound effects synthesizer that makes games explode into life. A music synthesizer that will stun you with 4 watts of stereophonic sound. And a speech synthesizer so realistic, it will send shivers up your spine.



"I recommend Applied Engineering products wholeheartedly!"

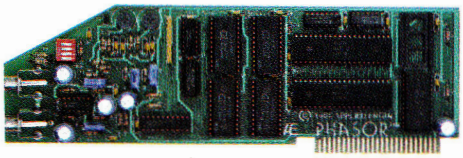
Steve Wozniak, the creator of Apple Computer

What's best, the Phasor works with more off-the-shelf software than any other sound card you can buy. So now all your favorite games — like Skyfox™, Under Fire™, Willy Byte™, Tactical Armor Command™, Maze Craze™, Zaxxon™ and Ultima IV™ — can have shattering sound effects. Educational packages like Music Construction Set™, Guitar Master™ and Music Star™ are also dramatically enhanced.

The Phasor has *four times* the output power and *twice* the accuracy of any other sound card — but of course, you can easily turn down the volume if you need a rest. The Phasor is equipped with 12 simultaneous sound channels, 4 white noise generators, and a voice channel expandable to 2 voices. Programs written for other sound cards, including Mockingboard™, ALF music card™, Synphonix™ and the Super Music Synthesizer™, sound even better with the Phasor. And you can control speech, pitch, volume and more with simple commands.

The Phasor comes with its own easy-to-use software (ProDOS based), including 30 ready-to-run, non-copy protected songs and sound effects along with a Music Editor, Sound Effects Editor and Text to Speech program. And of course, it carries our 15 day money back guarantee and five-year warranty.

Order a Phasor for your Apple today — and prepare to be blown away! Call (214) 241-6060 to order (9 a.m. to 11 p.m. 7 days). Or send check or money order for $169 to:

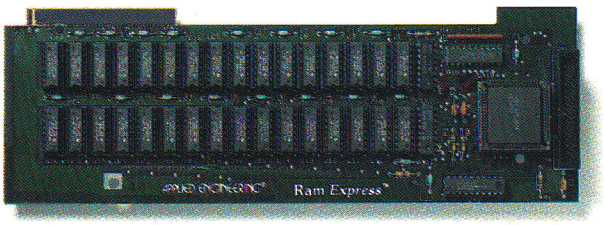


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Ram Express™ for the IIc and IIc Plus



More than a memory card.

The IIc is a fine computer and Apple is rightfully proud of their new IIc Plus. With two operating speeds, a 65C02 processor and an internal 3.5 drive, the 128K computer has almost everything going for it. Almost.

We say 'almost' because for many software titles, 128K just won't cut it. That's why AE makes Ram Express™, the fully compatible memory card for the IIc Plus and original IIc's with memory expansion connectors. Available in user-upgradeable 256K, 512K and 1 MEG sizes, Ram Express adds the memory you need, and a whole lot more.

AppleWorks Enhancement

With Ram Express, AppleWorks word processor lines rocket from 7,250 to more than 22,500 and the maximum number of records zooms from 6,350 to more than 22,500! Ram Express even expands the clipboard and automatically segments large files so they can be saved on two or more disks. And with Ram Express you'll run AppleWorks 10 times faster with one disk drive than an ordinary IIc could with two disk drives.

Ram Express is also a high speed, solid-state disk drive, loading and saving your programs more than 20 times faster. Copy a disk in one pass by simply inserting and removing the original, and inserting a blank disk.

And installation in the IIc Plus is easier than ever. Remove six screws from the cover, lift the keyboard, plug Ram Express into the connector and start enjoying a world of software titles you couldn't touch with 128K.

Optional Clock

Ram Express's optional clock displays the time and date on screens and automatically time and date stamps AppleWorks files. The clock option is even compatible with Apple's memory card for the IIc.

Ram Express w/256K	**$249**
Ram Express w/512K	**$399**
Ram Express w/1 MEG	**$699**
Clock Option	**$59**

Order today!

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

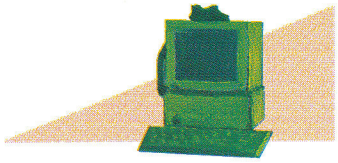
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line, either through their own BBSs or through information services such as CompuServe and **GEnie**.

All general programs described here can handle fundamental telecommunications tasks. Each has its own personality and distinctive features. You'll be happiest if you choose a program whose personality suits your own and whose features meet your particular needs.

For instance, if you like to enter commands on a blank screen, you'll be annoyed by programs that display command options continuously and make heavy use of menus. If you don't need comprehensive terminal emulation or other specialized features, you may be disappointed by the complexity of the programs offering them.

ASCII EXPRESS "THE PROFESSIONAL"

The first comprehensive communications program for the Apple II, **AE Pro** (as it's popularly called) is very flexible, letting you customize features to suit your on-line activities. Its versatility makes it more complicated to use than other programs, intimidating for beginners. Although it lacks a status line, its on-line help is quite complete.

Technically demanding, AE Pro emulates a dozen different terminals and can, with some difficulty, create powerful macros. Although AE Pro was the first to offer a variation of XModem protocol that includes file-header information, it doesn't support more recent innovations.

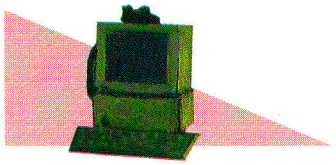
Available in both DOS 3.3 and ProDOS versions, AE Pro runs on the Apple II and II Plus, as well as current models. To accommodate earlier computers, AE Pro uses the control key rather than open- and solid-apple keys for commands; like Modem MGR (see below), AE Pro uses many WordStar control-key commands in its editor.

An Ounce of Prevention

What's a *computer* virus? It's surprisingly like its biological counterpart: It's a few lines of code inserted into a larger program via host or carrier software. Whenever you run an "infected" program, those few lines of virus code take control of your computer for a second or two—long enough to scan your disks and insert themselves into as many programs as they can.

The virus lies dormant in your infected disks until your system meets a particular condition that was set by the programmer who wrote the virus code; then it damages or destroys your data. A certain period of time may have to elapse before the virus wakes up; you may have to use the infected program a certain number of times; or a particular date may trigger the virus, for instance.

Viruses don't stop with the disks in your drives; they can spread to other users' software, too. How? The most common mode of transmission is through public-domain and freeware programs that



COMMWORKS

Using the AppleWorks file-card metaphor, **CommWorks** is easy to operate, but, although it offers a few special attractions, the program hasn't been revised to include complete file-transfer and macro features. CommWorks conveniently lets you write and save text in partitioned 35K capture buffers—up to 16 of them in extended RAM cards. It also lets you save text to disk in AppleWorks word-processor files.

Although it does provide some on-line help, CommWorks' manual is confusing. Some features are destructive; for example, *loading* instead of *appending* a file in the editor will overwrite its contents without warning.

MODEM MGR

The most complete communications program for its price, **Modem MGR** is one of the few to offer a split screen. The current version has a special feature that can flag message numbers in the review buffer, letting you send them one at a time to a remote computer. You can scan a list of new messages on line, go to the review buffer and flag those you want to read, then retrieve them. You can automate this process, like others, with a macro.

Lacking a status line, Modem MGR displays its commands with a simple keypress, but navigating its commands is often quite awkward. For example, sending a group of files in Binary II format requires that you first list them in a text file.

Modem MGR emulates nine terminals and, like AE Pro, permits knowledgeable users to assign emulation codes. Modem MGR runs on all Apple IIs, including the II Plus, and includes both DOS 3.3 and ProDOS versions in the same package. ►

are easy to upload and download to and from on-line services and bulletin-board systems.

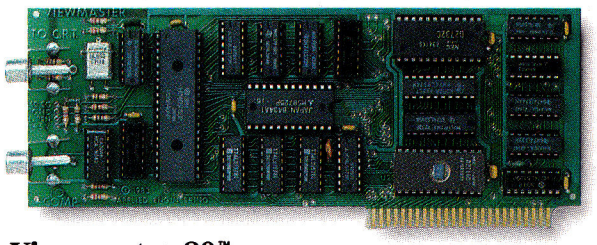
To cut the chances of infection, keep the following points in mind:

- Resist the temptation to download directly to your hard drive.
- Remove all unnecessary disks from your floppy drives.
- Use fresh data disks whenever possible.
- If you use your computer for both business and entertainment, keep your work files on a separate hard drive and use them only with proven programs.
- If your software is questionable, turn off your computer after using it. A virus can embed itself into your machine's memory and recirculate to disks you use later.
- Make frequent backup disks and keep the old ones—don't use the same disks over and over.
- Create separate volumes for programs and data on your hard drive.□

—Andrew D. Borts and Martin J. Zatz, D.D.S.

FOR THE II+

There used to be a dozen 80 column cards . . . only the best survived

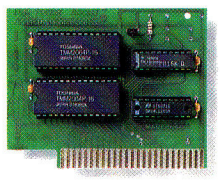


Viewmaster 80™

There's a good reason why Viewmaster 80™ has left the competition in the dust . . . total compatibility. From our free AppleWorks enhancement software to our famous warranty and complete technical support, Viewmaster 80 stands head and shoulders above any other 80 column card.

The powerful software we include allows your II+ to run AppleWorks with as little as 64K (or more) of memory. (We recommend the RamFactor memory card, but any compatible Apple memory card will work). AppleWorks runs with expanded records and word processor lines, and added features like multi-disk savings, time and date display with any ProDOS clock and many, many more.

16K Pocket Rocket™



Also for II+ owners, our Pocket Rocket expands your internal memory 16K to 64K and allows your II or II+ to run ProDOS. It's fully compatible with Applesoft, CP/M and Pascal and the low chip count reduces power requirements.



Lowercase ROM Chip™

Add lowercase capability to your II or II+ with AE's Lowercase ROM Chip. Fully supported by AppleWriter and other word processing programs, the chip makes communicating easier. Also supported by AE's On Line 64 communications software, included with our DataLink™ modem.

Viewmaster 80 . . . . . $159
16K Pocket Rocket $99
Lowercase ROM Chip $24

Applied Engineering also makes a complete line of II and II+ compatible memory cards, accelerator cards and other peripherals.

Order today!

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

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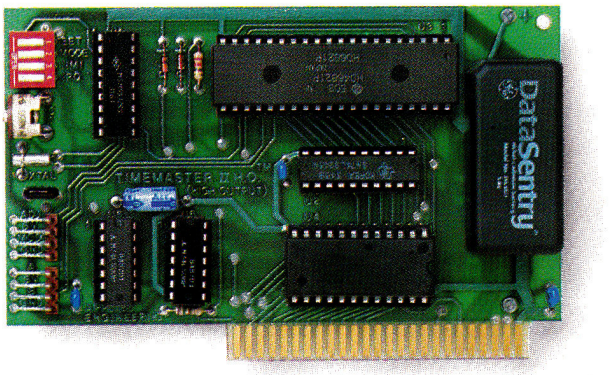
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The first clock card to add time and date to AppleWorks' screens and files.



Timemaster H.O. So many features it's become the world's best selling clock card.

It's the smart way to put the time and date on your Apple IIe or II+. Because only the Timemaster H.O. packs *ALL* the important features of all the competition *combined,* including leap year, year (not just in ProDOS), month, date, day of week, hours, minutes, seconds and milliseconds. It's totally ProDOS, DOS 3.3, PASCAL and CP/M compatible. And, of course, it works better than any other clock with AppleWorks.

With the Timemaster H.O. you're assured of reliable, trouble-free operation along with simple, built-in, one-command time setting, accuracy through leap years, and a firmware maintained interrupt setting.

If you're using or writing software for other clock cards, you're still covered. Because the H.O. will *automatically* emulate them. And only the Timemaster H.O. adds 15 new commands to BASIC. The H.O. even comes complete with two disks full of sample programs, including a computerized appointment book, a DOS dating program, interrupt programs, and over 30 programs that others charge you extra for — or don't even offer. As a low-cost option, you can add true BSR remote control to the H.O., giving you remote control of up to 16 lights and appliances in your home or office.

• Time in hours, minutes, seconds and milliseconds; date with year, month, day of week and leap year • 24-hour military format or 12-hour AM/PM format • Eight software controlled interrupts so you can run two programs at the same time (many examples included) • Can be set precisely to the exact second • Digital I/O port for advanced applications • Allows AppleWorks to time and date stamp all data automatically • Displays time and date on AppleWorks screens and files • Five-year warranty.

Timemaster H.O.	$99.00
BSR option (may be added later)	$29.00

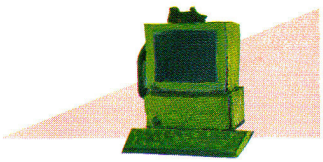
Order Timemaster today ... with 15-day money back guarantee and our five-year parts and labor warranty. See your dealer or call (214) 241-6060, 9 a.m. to 11 p.m. 7 days, or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 if outside U.S.A. Prices subject to change without notice.

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MOUSETALK

Offering pull-down menus, scrolling windows, and dialog boxes à la the Macintosh-style interface, **MouseTalk** is exceptionally easy to use—if you have a mouse. Produced by the developers of ASCII Express, it greatly simplifies many of that program's features. For instance, you can set up a password, welcoming message, and directory access for remote callers just by clicking on a few boxes and typing in appropriate filenames and ProDOS prefixes. The MouseTalk editor is similarly complete and easy. Dragging the mouse selects text you can then cut, move, copy, print, or save to disk.

Version 1.5 improved the program in several important ways—including the addition of Binary II format and XModem file transfer, with cyclic redundancy check (CRC, a form of error checking), using 128-byte, 1K, and 4K blocks. Unfortunately, this version had a number of bugs, most of which had already been corrected by press time. Because the current version is slower owing to considerable disk access, run it from a RAM disk.

POINT-TO-POINT

AppleWorks users especially will feel right at home with **Point-to-Point**, which employs that popular program's file-card metaphor and, in the editor, many of its commands. With a status/command line visible in terminal mode and with menus to step you through most operations, Point-to-Point is easy to use, even though it lacks on-line help. Some shortcuts are available, but, once you know the program well, you may find that the menus slow you down.

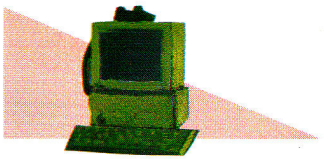
Point-to-Point can read and print AppleWorks and MouseWrite word-processing files and—a special convenience—convert them to plain text files "on the fly" as it transmits them on line, eliminating the need to save those files as text in advance. Because many people find it useful to send parts of a document, Point-to-Point, like ProTerm (see below), makes it possible to send selected text from its editor, a handy feature. Although it can't format a disk and offers only VT-52 emulation, Point-to-Point happily combines power with ease of use.

PROTERM

Currently **ProTerm** is the most complete of the Apple II communications programs, offering a few special features not yet available elsewhere. ProTerm is the only program that can automatically record the steps you take connecting to a remote computer and save them for use as a log-on macro. Even without on-line help or status line, the program is easy to learn and use, displaying commands and menus in pop-up windows.

In addition to taking advantage of extended-memory cards for its review buffer, ProTerm offers some emulation for nine terminals and the widest variety of file-transfer protocols. Its editor, with commands familiar to Apple Writer users, is especially good at formatting text for printing.

ProTerm is not without its faults, however. Like Talk Is Cheap (see below), but unlike Point-to-Point and MouseTalk, it doesn't



store text-file transfer preferences for different systems, requiring you to repeat those selections with every log-on. It's also less satisfactory on GEnie, because it doesn't properly display text-file and macro transmission in the *half-duplex mode* GEnie prefers (signals traveling each way, but in only one direction at a time). Look for improvements in version 2.1, which features both YModem and ZModem protocols, split-screen chat mode, and strengthened macro capability.

SOFTERM 2

Although you can use it for general telecommunication, **Softerm**'s strength is its reliable emulation of 25 different terminals. That emulation is made possible by a small three-key expander that plugs into the game port. Use it like the shift key by pressing it together with other keys. These additional keys enable the Apple II to imitate terminals with special function keys.

A complex program, made even more so by the difficult manual, Softerm is hard to master, but worth the effort for those who require accurate and complete terminal emulation. Its limited ProDOS capability, however, makes it an awkward choice for other tasks.

TALK BACK

Sacrificing bells and whistles for simplicity, **Talk Back** is both the most limited and the easiest to use of the programs in this group. With status and command lines displayed on screen, Talk Back features all basic communications components, including XModem, record buffer, simple macros, utilities, and an editor. Because the editor and utilities are modules separate from terminal mode, you can't, for example, send text from the editor or change prefixes while on line.

Talk Back makes it possible to write your own on-line help files for each service you use. That feature, together with its concise, straightforward manual and menu choices, make this program a good (if somewhat expensive) choice for beginners. A version of Talk Back, without the editor, comes with **Epic** modems.

TALK IS CHEAP

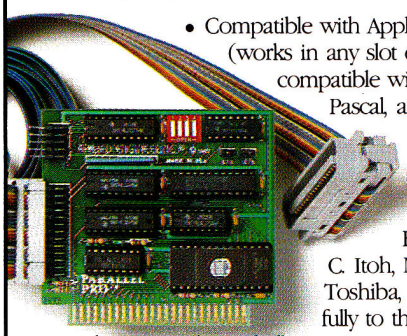
The most popular of Apple II communications shareware programs, **Talk Is Cheap (TIC)** is distinguished by powerful command files and macros that can automate the entire on-line process. Available on line, you can download TIC and distribute it freely for evaluation with the understanding that users will send payment to its author. A clear, complete 50-page manual is included on disk for registered users, who are notified of program revisions. (Version 3.0 will probably be available by the time you read this.)

An inexpensive way to get started, TIC provides on-line help for its complete range of features. Not quite as easy to use as more costly programs—you must remember the names of files to send, for example, rather than selecting them from a displayed list—TIC provides a simple script language enabling

Parallel Pro™

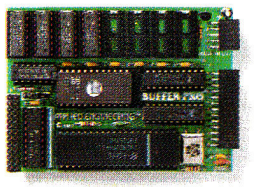
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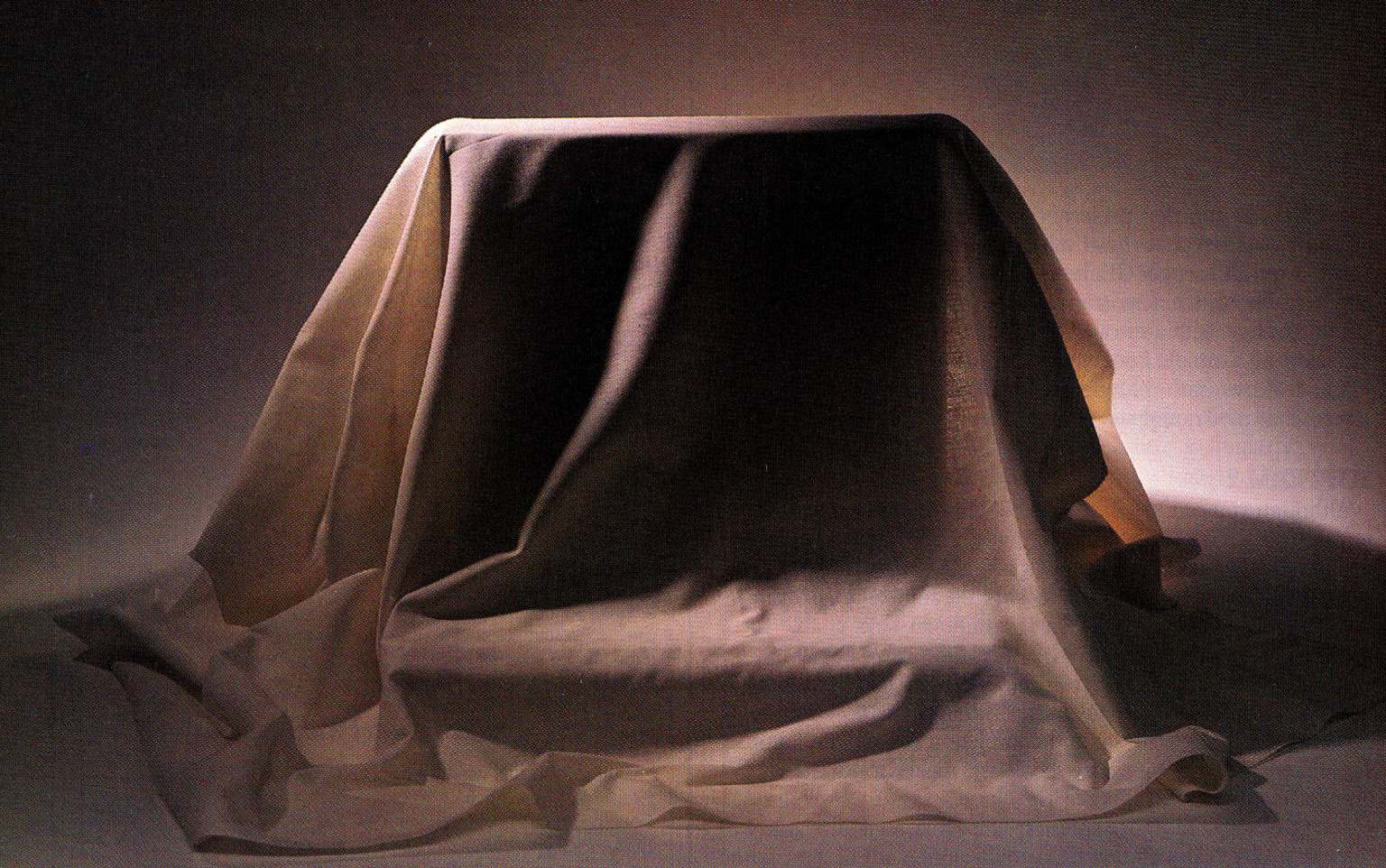
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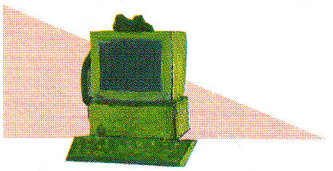
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anyone with modest programming skills to automate its commands. You can write scripts that will even draw windows on screen and prompt users for their choices.

TIC doesn't have a text editor—its only major omission—so you must use another program to write command scripts or messages for transmission. TIC emulates 14 terminals and offers several file-transfer protocols, including single-file YModem and "Turbo XModem," which speeds transfer over clean telephone lines. A version of TIC called **DataTerm** is included with Applied Engineering's **DataLink** modem.

ALTERNATIVES

In addition to these programs, there are many other ways to get on line. **Freeterm GS**, for example, is a public-domain program exclusively for the Apple IIGS. Another public-domain program, **Kermit-65**, provides VT-100 emulation and file transfer to computers requiring 7-bit data format. The early version of **Z-Link**, a new shareware program posted on information services, features YModem capability. (Some on-line copies before July 31 were infected with the CyberAIDS virus; see "A Black Plague" in this month's Letters, as well as the accompanying sidebar.)

DCOM 3.3 is another shareware program, available on **The Source**, that emulates the VT-100 for Apple IIs running DOS 3.3. **Apple Conference Terminal** offers a useful split screen and the ability to upload ASCII graphics; ACT is inexpensive software available for download on GEnie, where you can use it to play games in the "conference rooms."

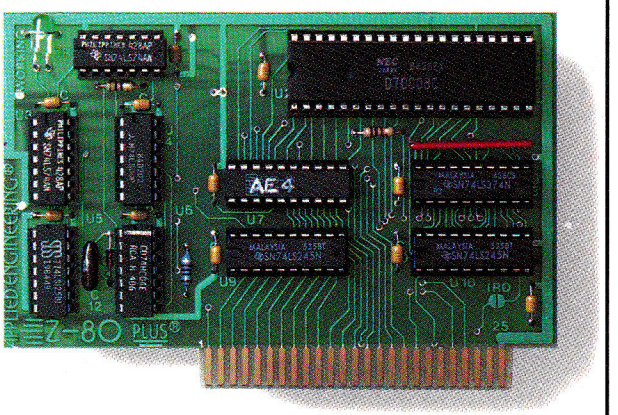
XTERM, still under development as shareware, is an excellent communications module for users of **COMMAND.COM**, the MS-DOS work-alike command language. **Vidtex** offers special compatibility with features on CompuServe; **AppleLink—Personal Edition** software is required for that service.

What's more, some programs, such as **MouseWrite**, have communications capability, which can also be added to other programs with **Pinpoint Desk Accessories**. **ModemWorks** (soon to be available in version 3.0) is an exciting "communications construction set" that enables a BASIC programmer to build a communications program or other modem-related applications. The list of possibilities is growing.

Once upon a time, when there were only a few complex terminal programs available, most Apple IIs were parked at home. Today's software makes it a pleasure to travel the scenic electronic highways that are opening up for Apple II telecommunicators everywhere.■

Tom Sherman is a communications consultant specializing in computer-related activities. Write to him at 224 South Chester Road, Swarthmore, PA 19081.

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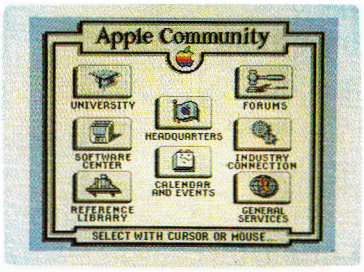
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Looking to expand your GS software options? You may have to boost your machine's memory first. Before you buy, check inCider's *guide to low-cost GS RAM cards.*

by Lou Wallace

Dazzling graphics and symphonic sound don't come cheap—the more sophisticated the software, the more memory it costs your Apple IIGS. And, as you've probably discovered by now, the GS' standard 512K isn't even enough to run some of those top-of-the-line packages you've had your eye on.

It's time to add a RAM card. If you've never shopped for RAM (random-access memory) before, we'll ask some questions to help you decide what kind of card to look for. Extra memory doesn't have to carry an outrageous price tag, either—we'll take a look at four low-cost options that won't put you into the red.

HOW HARD IS IT TO ADD MEMORY?

This one's easy to answer. Apple was looking out for the GS owner when it designed the machine's memory-expansion features. Adding memory couldn't be simpler. Just turn off the GS; pop the top off the computer; locate the memory slot on the far right side near the front; and slide in your RAM card. Replace the cover and reboot. Total installation time is about a minute. Now, after you reboot, open the Control Panel (Open apple-Control-Escape) and select the RAM-disk option. Your GS will tell you how much RAM it's using currently and how much remains, to be configured as a RAM disk or left as extra memory for RAM-intensive software.

HOW MUCH RAM DO YOU NEED?

This one's harder—the answer depends on the type of work you do and the requirements of the programs you use.

Do you stick to a couple of programs that require more than 512K? Your RAM needs are whatever those programs require for effective operation.

Do you just want to be able to run most memory-intensive GS programs? Get a 1-megabyte board to boost your total memory to 1280K—enough for most consumer packages.

Are you developing applications, or are you a "power user" who likes to casually mention your 8 megs of RAM at cocktail parties? Look for a RAM board with a built-in upgrade path. Compare the two configurations for adding chips to RAM cards:

1) *Empty sockets*—just buy more memory and plug it in as needed. Chip packages come in chunks of 256K; some boards may require you to expand in units of a megabyte.

2) *Piggyback boards* plug into a connector on the main card and give you extra sockets for more RAM. Some boards offer ROM-chip options, too.

WHAT'S IT GOING TO COST?

Now for the bottom line—price. Before you decide how much you're willing to pay and whether you want to buy a particular board, take a look at how much memory it has, how expandable it is, what extra options are available, and how well built it is.

If you're sure you're going to need only an additional megabyte, don't waste your money on piggyback options or empty sockets. If you're not sure, or you know you're going to need more than a megabyte sometime in the future, buy those features now—you'll ►

	GS Juice Plus	TopRAM	PlusRAM PR-1	PlusRAM GS8
standard memory	1M	1M	1M	1M
type of chip	150ns 256kbit	150ns 256kbit	120ns 256kbit	150ns 1mbit
# of chips	32	32	32	8
expansion space	none	piggyback port	none	sockets, up to 7M additional
supplied software	none	none	$5\frac{1}{4}$" RAM-Disk Manager for up to 6 partitions	$3\frac{1}{2}$" support disk for older program versions
dimensions	9×3"	$6\frac{1}{2}$×$2\frac{3}{4}$"	9×$2\frac{3}{4}$"	$10\frac{1}{2}$×$3\frac{3}{4}$"
documentation	single sheet, adequate	single sheet, adequate	2 manuals: board installation and operation; installation and use of RAM-Disk Manager	1 booklet: board installation, support-disk use
comments	quick, easy installation (memory slot); RAM immediately available; Control Panel RAM-drive option available	quick, easy installation (memory slot); simple, smooth operation; RAM recognized immediately	simple installation into any peripheral slot (not memory slot); RAM not recognized automatically, must specify slot via Control Panel; RAM not recognized by Control Panel RAM-disk option; better for 8-bit Apple IIs	quick, easy installation (memory slot); recognized by Control Panel and memory-intensive programs; very well designed; can expand GS to its limits

Table. Comparison chart detailing four low-cost memory-expansion options for the GS.

kbit = kilobit
mbit = megabit
M = megabyte
ns = nanosecond

Product Information

GS Juice Plus
Applied Ingenuity
14922 Ramona Blvd.
Unit M
Baldwin Park, CA 91706
(800) 346-0811
(818) 960-1485
$59 (0K), $149 (256K), $399 (1M)
Reader Service No. 340

PlusRAM PR-1, $399 (1M), $219 (256K)
PlusRAM GS8, $499 (1M)
CirTech Ltd.
Open-Apple
(American distributor)
P.O. Box 11250
Overland Park, KS 66211
(913) 469-6502
Reader Service No. 341

TopRAM
Parallax Inc.
5249 Locust Avenue
Carmichael, CA 95608
(916) 481-6331
$29.95 (0K)
(stock remaining)
Reader Service No. 342

save money in the long run. Remember, if you add a single, non-expandable, 1-megabyte board now and decide later you need more RAM, you'll have to remove the 1-megabyte board and replace it with an entirely new RAM card. You might be able to sell your old board or "cannibalize" it for chips, but no matter how you look at it, you'll end up spending more.

Consider the type of RAM chip already on the board, too. Availability's important—if a RAM chip goes bad, you'll need to replace it. For upgrades or repairs, you can count on finding 256-kilobit chips pretty easily. Most memory-expansion cards in older Apple IIs use 256-kilobit chips (32K bytes each), as well; you might be able to install them on a suitable GS expansion board. With the high cost of RAM chips today, keep that option in mind.

One-megabit (1024-kilobit) chips are also becoming popular for large-memory personal computers. But they're not cheap—they usually cost more per megabyte than the smaller 256-kilobit chips. The advantage, though, is that larger chips let you put together multimegabyte boards that would be nearly impossible to construct with 256-kilobit chips, because of the smaller chips' enormous space and power requirements at that level of memory expansion.

See the accompanying **Table** and Product Information box for a summary of four low-cost memory boards for the GS. (For a look at higher-priced RAM cards, see "More Memory, More Power," September 1987, p. 44.) They differ in size, type of chip, and price, but each is a good choice in terms of functionality. Don't give up on the software you want—buying memory for your GS doesn't have to be difficult or costly. What's your best choice? The least expensive board that does what you need—it's that simple.■

Lou Wallace is a technical editor at RUN *magazine (IDG Communications/Peterborough). Write to him c/o* inCider, *80 Elm Street, Peterborough, NH 03458.*

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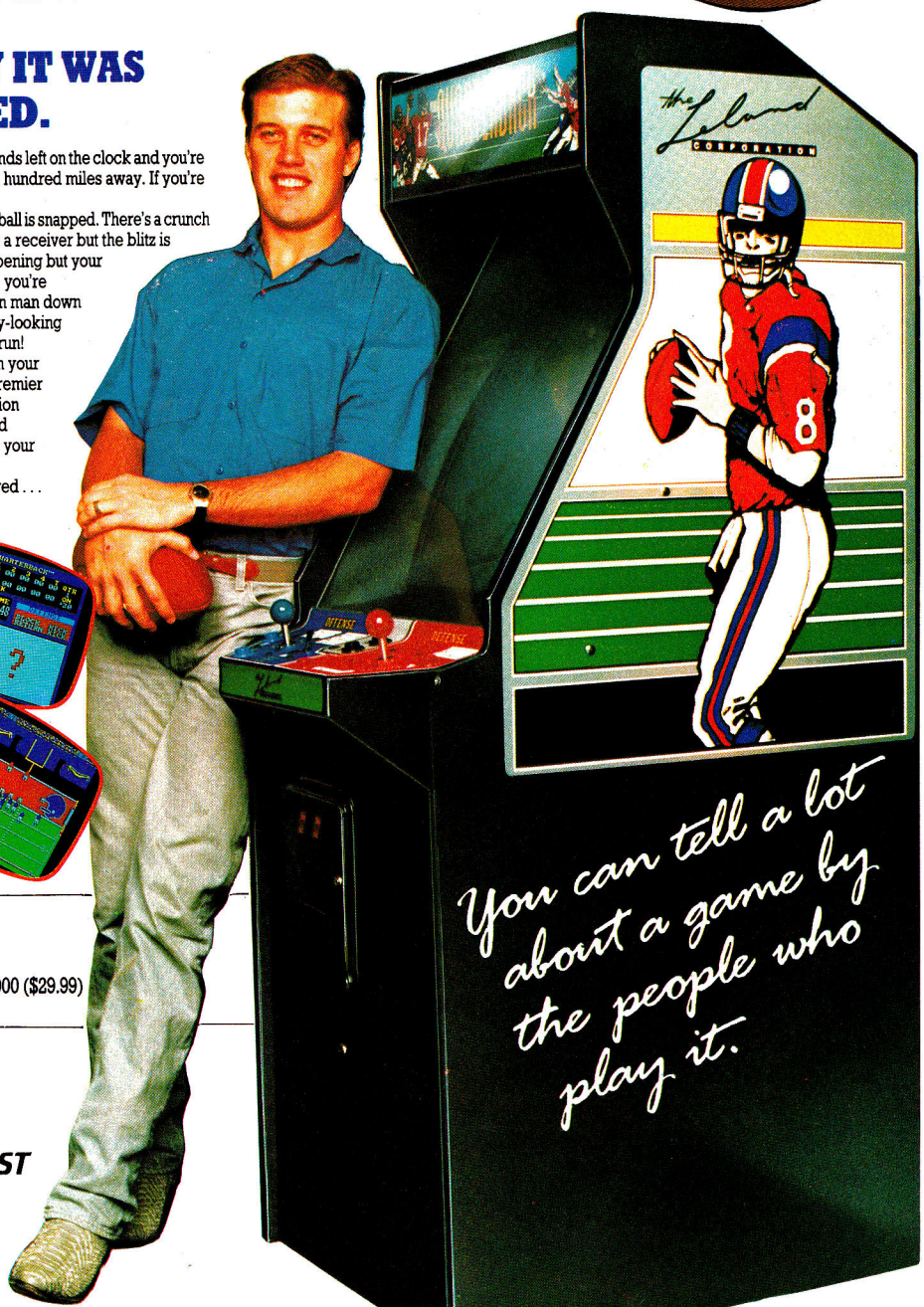
"Yellow-nineteen! Yellow-nineteen! Hut! Hut!! HUT!!!" The ball is snapped. There's a crunch of armor on the front line and you drop back. You look for a receiver but the blitz is on. Roll to the right – you keep dancing, you look for an opening but your blockers are starting to crumble. Keep pedalling back . . . you're in trouble now, you're too deep. But wait! You spot an open man down field! You cock back, ready to fire, when suddenly an ugly-looking tackle is all over you. Do you try and throw? Or duck and run!

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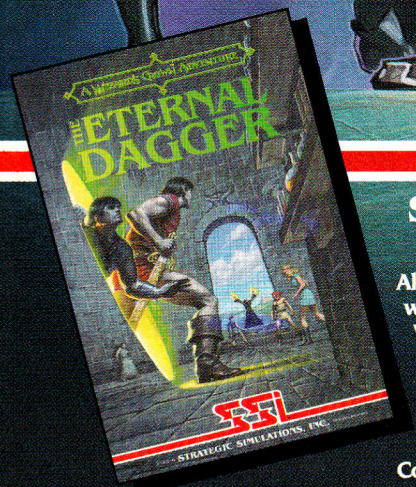
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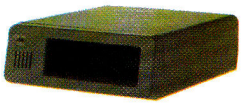
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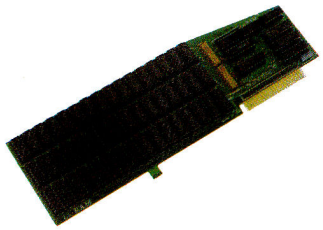
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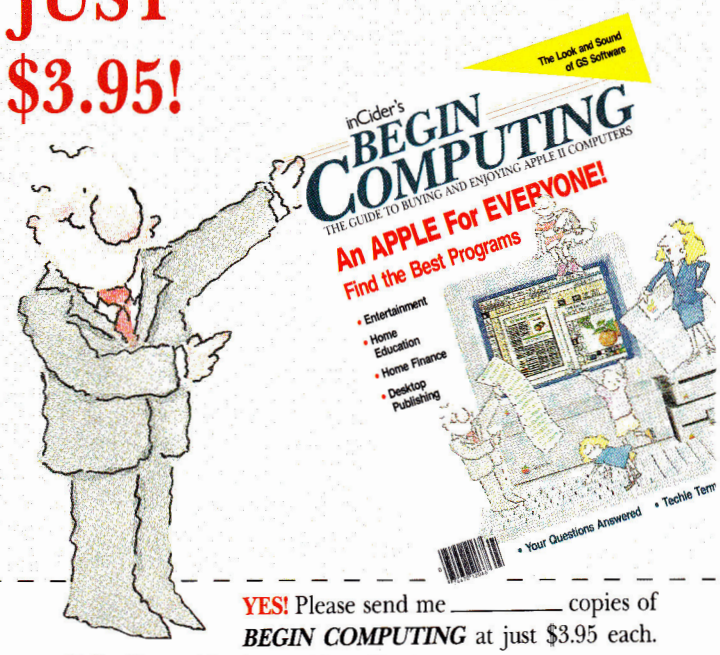
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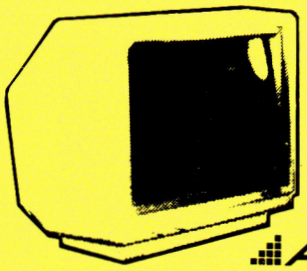
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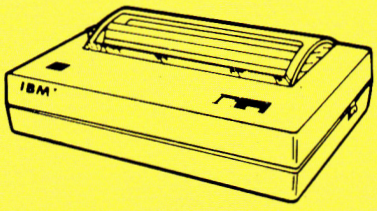
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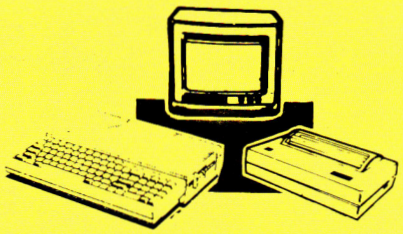
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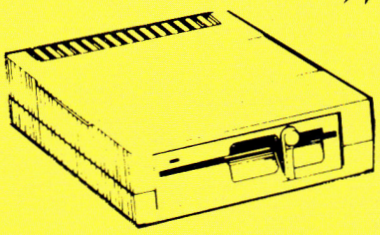
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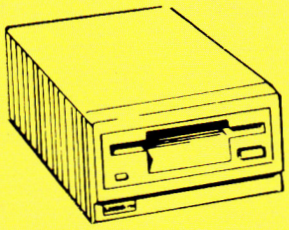
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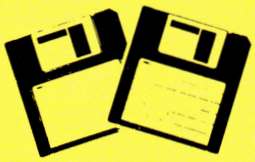
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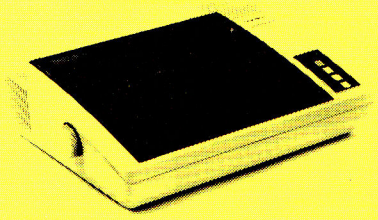
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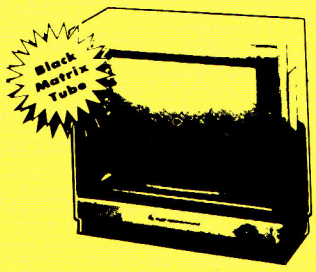
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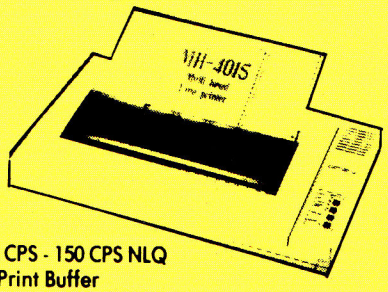
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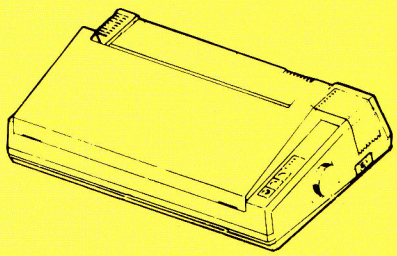
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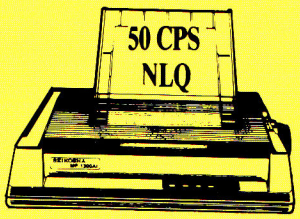
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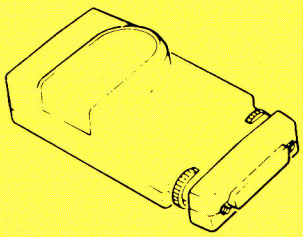
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Holiday Spirits

by Ruth K. Witkin

Raise a glass to the New Year and enjoy your celebration with an attractive AppleWorks wine list.

This time of year, with people gathering for festive occasions, is a grand time for giving wine-and-cheese parties. You don't have to be a professional wine taster to enjoy these cozy get-togethers, but it's always nice to know what you're sampling with your brie or boursin.

In this session, you'll create the wine list shown in the accompanying **Figure**, which gets its attractive layout from the formatting. Once you get these techniques under your belt, all you'll need to produce your own wine list is a knowledge of wine types and terminology and a flair for creating lighthearted descriptions.

A DOCUMENT FROM SCRATCH

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

Press OA-Z to keep the places where you press Return (shown as blots on screen) and your printer options visible as you work. Now enter the asterisks and vertical lines above the main title: Type an asterisk followed by a vertical line (shifted backslash on your Apple keyboard) ten times, then type one more asterisk. Press Return twice to move the cursor to line 3.

Type **WINE LIST** and press Return. The row of asterisks and vertical lines below *WINE LIST* is the same as the one above. When you have identical entries like this, it's easier to copy than create from scratch: Press OA-1 to jump the cursor to line 1; now press OA-C and hit Return to confirm *Within document*. Press OA-Right Arrow to highlight the asterisks ►

```
*|*|*|*|*|*|*|*|*|*

WINE LIST

*|*|*|*|*|*|*|*|*|*

These superb examples of the vintner's art
are available for sampling at this year's
Celebration of the Grape.

DOMESTIC

Vue de Plaine Cerise (Sec et Doux)
A refreshing light cherry wine specific to eastern Abner County.

Zinfandel
A fruity red wine produced by the California grape originally grown in Europe. It gains
little by aging and is best drunk young.

Melange A Trois
A loving blend of three domestic grapes: light-bodied Niagara, virile Concord, and
warm-regioned Agawam.

Pomme Sauvage Blanc
A crisp white wine resulting from a serendipitous discovery in the woods of Redford.

Jacinthe des Pres
A foxy and assertive wine produced from the New York labrusca grape. This is a dry,
unfortified version of the typical sweet, heavy-bodied wines.

IMPORTED

Emerald Riesling
A stunningly clear white wine with a bouquet of considerable distinction. It is produced
from grapes grown in the Rhine Valley of Germany.

Chianti Rosso
A sprightly and appetizing red table wine served from the characteristic straw-covered
bottle, called a fiasco. The grapes were grown in the Tuscany region of Italy.

Vouvray
A dry white wine made from the Chenin Blanc grape grown in the Loire Valley southwest of
Paris. This wine was blended with a liqueur of rose hip shells.

Sherry Reina
A cream sherry aperitif aged with oak chips. It is made from the Pedro Ximinez grape grown
in the Jerez de la Frontera region of Spain.

Pinot Chardonnay Saint-Louis
The finest of dry white wines, it is made from the Chardonnay grape grown in the Burgundy
area of France. Classic and elegant, its sparkling version produces unexcelled Champagne.
```

Figure. *Wine list created on the AppleWorks word processor.*

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and vertical lines, and hit Return. Press the down-arrow key four times and hit Return again. Press Return, then Down Arrow to move the cursor to line 7.

The next paragraph is split into three lines, which affords good centering. In line 7, type **These superb examples of the vintner's art** and press Return. In line 8, type **are available for sampling at this year's** and hit Return again. In line 9, type **Celebration of the Grape**. Hit Return three times to move your cursor to line 12.

Type **DOMESTIC** and press Return three times. Your cursor should now be in line 15 column 1.

FORMATTING WITH THE CLIPBOARD

Much of the remaining text alternates between two printer options: ten characters to the inch for wine names and Proportional-1 for descriptions. (Check your printer's documentation to be sure

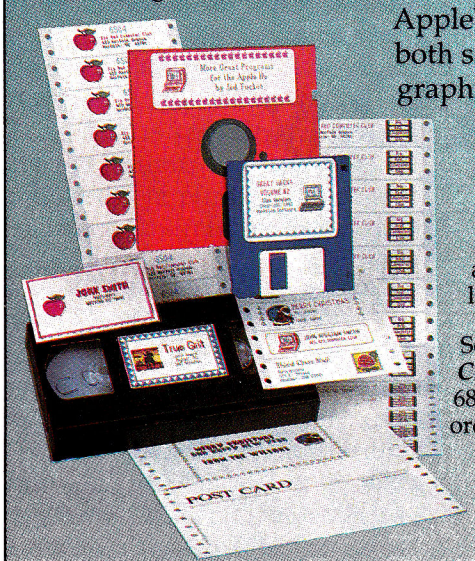
Table. Names and descriptions in wine list.

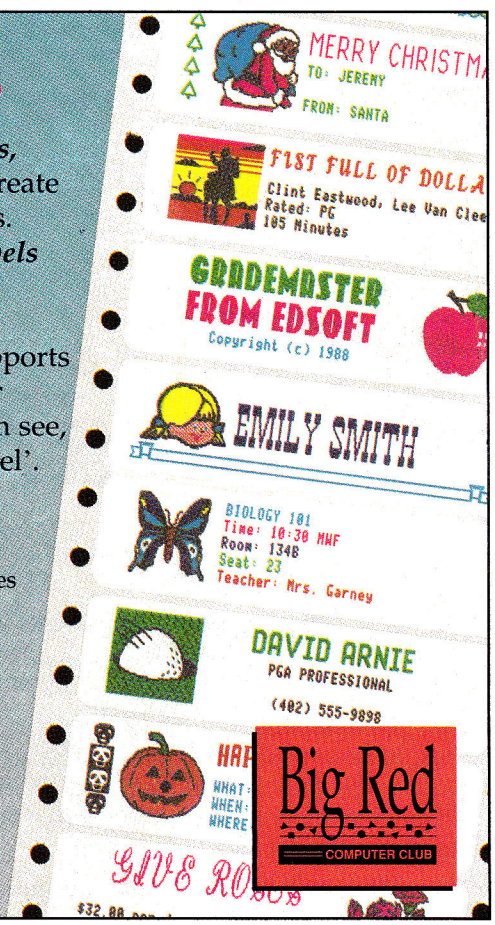
Line	Action
16	Type **Vue de Plaine Cerise (Sec et Doux)** and press the down-arrow key twice. The cursor moves to line 18. Hit OA-Left Arrow.
18	Type **A refreshing light cherry wine specific to eastern Abner county.** and press the down-arrow key three times. The cursor moves to line 21. Hit OA-Left Arrow.
21	Type **Zinfandel** and press the down-arrow key twice. The cursor moves to line 23. Hit OA-Left Arrow.
23	Type **A fruity red wine produced by the California grape originally grown in Europe. It gains little by aging and is best drunk young.** and press the down-arrow key three times. The cursor moves to line 27. Hit OA-Left Arrow.
27	Type **Melange a Trois** and press the down-arrow key twice. The cursor moves to line 29. Hit OA-Left Arrow.
29	Type **A loving blend of three domestic grapes: light-bodied Niagara, virile Concord, and warm-regioned Agawam.** and press the down-arrow key three times. The cursor moves to line 33. Hit OA-Left Arrow.
33	Type **Pomme Sauvage Blanc** and press the down-arrow key twice. The cursor moves to line 35. Hit OA-Left Arrow.
35	Type **A crisp white wine resulting from a serendipitous discovery in the woods of Redford.** and press the down-arrow key three times. The cursor moves to line 39. Hit OA-Left Arrow.

Continued ►

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Continued

39 Type **Jacinthe de Pres** and press the down-arrow key twice. The cursor moves to line 41. Hit OA-Left Arrow.

41 Type **A foxy and assertive wine produced from the New York lambrusca grape. This is a dry, unfortified version of the typical sweet, heavy-bodied wine.** Here's where another heading (**IMPORTED**), which has a different formatting, comes in. Press Return three times to make room for it. The cursor moves to line 45.

45 Type **IMPORTED** and press the down-arrow key four times. The cursor moves to line 49. Hit OA-Left Arrow.

49 Type **Emerald Riesling** and press the down-arrow key twice. The cursor moves to line 51. Hit OA-Left Arrow.

51 Type **A stunningly clear white wine with a bouquet of considerable distinction. It is produced from grapes grown in the Rhine Valley of Germany.** and press the down-arrow key three times. The cursor moves to line 55. Hit OA-Left Arrow.

55 Type **Chianti Rosso** and press the down-arrow key twice. The cursor moves to line 57. Hit OA-Left Arrow.

57 Type **A sprightly and appetizing red table wine served from the characteristic straw-covered bottle, called a fiasco. The grapes were grown in the Tuscany region of Italy.** and press the down-arrow key three times. The cursor moves to line 62. Hit OA-Left Arrow.

62 Type **Vouvray** and press the down-arrow key twice. The cursor moves to line 64. Hit OA-Left Arrow.

64 Type **A dry white wine made from the Chenin Blanc grape grown in the Loire Valley southwest of Paris. This wine was blended with**

Continued

your printer supports proportional spacing.) You'll serve ten wines at this party, which means alternating the options ten times, surely a redundant task. The quick and easy way to enter the same format combinations repeatedly in a document is via the clipboard. All you do is create them once, copy as a group to the clipboard, then copy from the clipboard as many times as you want. You'll see what I mean in a moment.

Before you enter more text, create the format options. Leave the cursor in line 15 and press OA-O to bring up the Printer Options screen. Type **CI** (for *Chars per Inch*) and press Return. Type **10** and hit Return again. Now type **P1** (for *Proportional-1*) and hit Return again. Press Escape to return to the wine list. Move the cursor up one line (to line 16) and hit Return again. You now have a format group consisting of the following:

Line 14: ■ (blot)
Line 15: --------Chars per Inch: 10 chars ►

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Line 16: ■ (blot)
Line 17: --------Proportional-1
Line 18: ■ (blot)

Place the cursor on line 14 column 1. Copy lines 14 through 18 to the clipboard: Press OA-C and type **T**; press OA-9 and hit Return. Now copy the group from the clipboard: Leave the cursor on line 15, press OA-C, and type **F**. Continue copying from the clipboard eight more times. Don't be concerned that you can see only three format groups on screen. AppleWorks is hard at work entering the others.

Continued

a liqueur of rose-hip shells. and press the down-arrow key three times. The cursor moves to line 68. Hit OA-Left Arrow.

68 Type **Sherry Reina** and press the down-arrow key twice. The cursor moves to line 70. Hit OA-Left Arrow.

70 Type **A cream sherry aperitif aged with oak chips. It is made from the Pedro Ximinez grape grown in the Jerez de la Frontera region of Spain.** and press the down-arrow key three times. The cursor moves to line 74. Hit OA-Left Arrow.

74 Type **Pinot Chardonnay Saint-Louis** and press the down-arrow key twice. The cursor moves to line 76. Hit OA-Left Arrow.

76 Type **The finest of dry white wines, it is made from the Chardonnay grape grown in the Burgundy area of France. Classic and elegant, its sparkling version produces unexcelled Champagne.** Leave the cursor where it is, which should be in line 78 column 31. Press OA-S to store your work on disk.

End

ENTERING THE REST OF THE TEXT

Referring to the accompanying **Table**, enter the rest of the text. As you'll see, the second blot in each format group receives the name of the wine, and the third blot, the description. The first blot separates one format group from the next. Press the spacebar only once between sentences. If you make a typo, press the delete key to back up the cursor and erase.

You've entered all the text and most of the formatting. You still need to address a few elements—namely, margins, centering, boldface type, and character sizes—to get your wine list looking like the one in the **Figure**.

Let's start with the margins, which print the entries in the wine list one-half inch from the top edge of the page and allow room at the bottom: Press OA-1 to jump the cursor to line 1 column 1. Now press OA-O to bring up the Printer Options screen. Type **TM** (for *Top Margin*) and press Return. Type **.5** and hit Return again. Now type **BM** (for *Bottom Margin*) ►

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and hit Return. Type **.0** and hit Return.

You're still in the Printer Options screen, so have AppleWorks center every line, which lends variety and interest to the page layout. Type **CN** and hit Return. You can now see the text shift to the center. Printing the title and its decorative frame at four characters to the inch adds a dramatic touch: Type **CI** and hit Return. Type **4** and hit Return again. The text now shifts to the left. Press Escape to return to the wine list.

Move the cursor to line 11, so that you can format the introductory paragraph to standard size. Press OA-O. Type **CI** and press Return. Type **10** and hit Return again. Press Escape to return to the wine list.

The group titles **DOMESTIC** and **IMPORTED** are more interesting if you make them a bit larger than the standard text. Place the cursor on line 17 and press OA-O. Type **CI** and press Return, then type **8** and hit Return again. Press Escape to return to the wine list. Now move the cursor to line 51 and press OA-O. Type **CI** and hit Return. Type **8** and hit Return again. Press Escape to return to the wine list.

BOLDFACING

Boldface type makes the main elements of this piece (titles, asterisks, and wine names) really stand out. Place the cursor on line 5 column 1 and press Control-B. AppleWorks now enters a caret before the first asterisk. With your cursor on the caret, you can see *Boldface Begin* on the status line at the bottom of the screen. There's no need to end boldface because it cancels itself at the end of the line.

In the same way, boldface the other entries that need it. On the following lines, place the cursor on the first character of text or anywhere before it and press Control-B: 7, 9, 12, 13, 14, 18, 22, 27, 33, 39, 45, 52, 56, 62, 69, 75, and 81. Now press OA-S to store your work on disk.

It's time to enjoy the fruits of your labor, so turn on your printer. Press OA-P to start the Print command, hit Return once to confirm *Beginning*, again to select your printer (or type the printer number, then press Return), and once more to confirm one copy.

Press OA-9 and you can see the *End of Page 1* indicator in line 86. AppleWorks calculates page breaks based on the top and bottom margins and inserts these indicators before printing. If you change anything at all in the document, the indicator disappears, only to reappear the next time you print.

When you're working on a long document, it often helps to see page breaks before printing. All you do is press OA-K and tell AppleWorks the printer's name, and the page breaks will appear on screen.■

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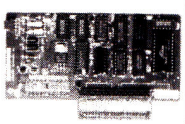
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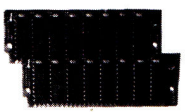
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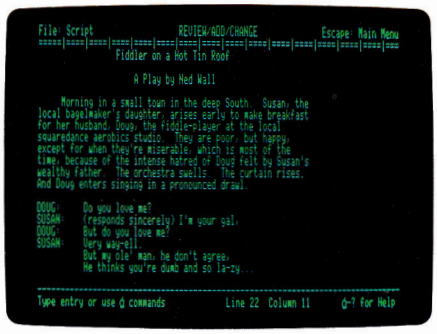
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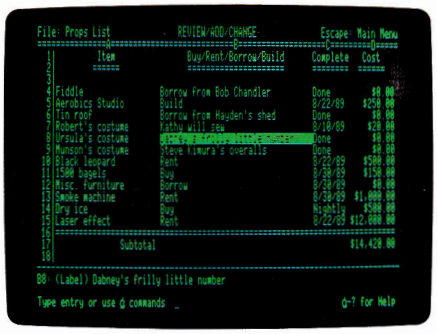
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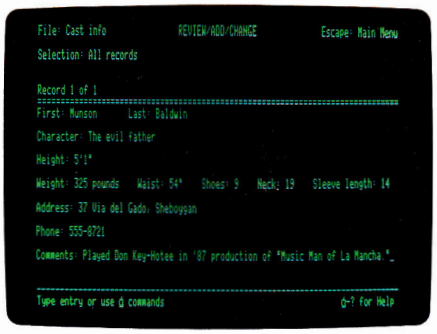
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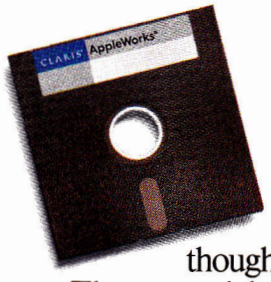
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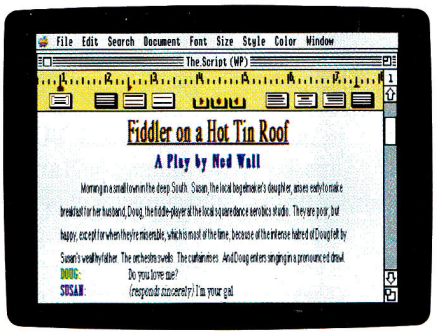
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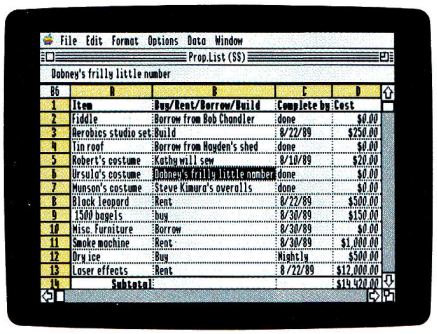
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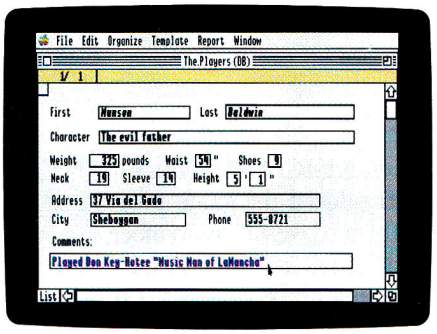
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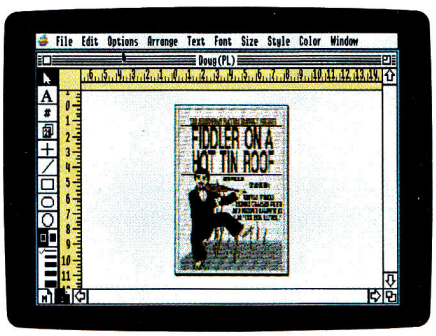
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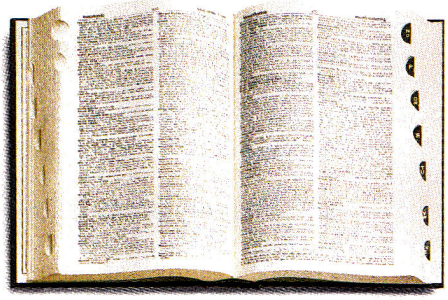
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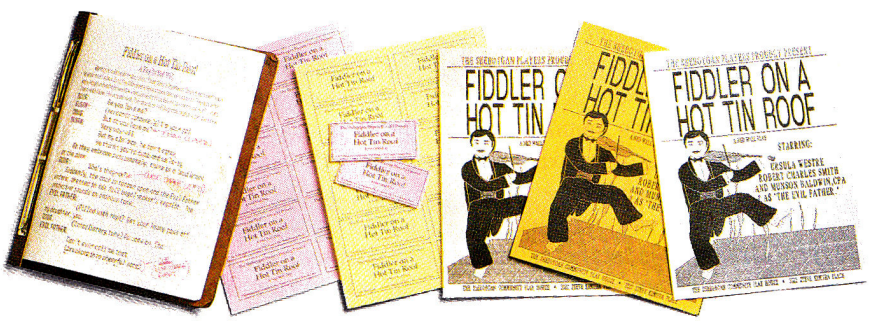
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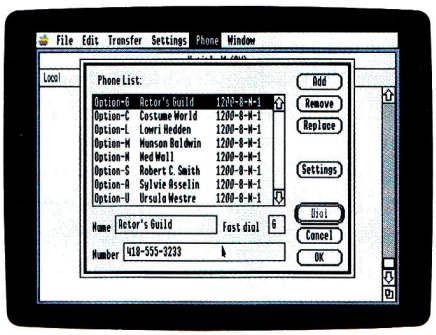
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Labyrinthian Caverns

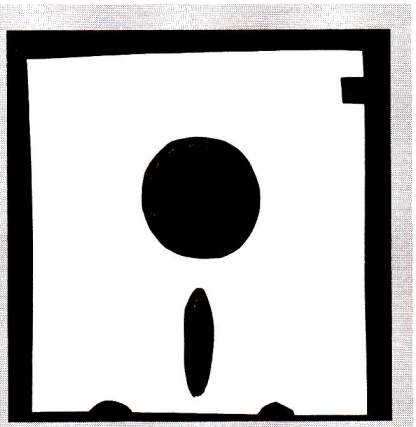
by Dan Bishop

Lions, spiders, and bats, oh my! But in BASIC? Last month's column introduced the game program Labyrinthian Caverns (November, p. 96), which shows you how to use a two-dimensional array to create a maze. The game's challenge is to travel through the maze in a given number of moves, while faced with threatening obstacles at preset locations. Land on a danger square and you'll see a fatal message such as, "You just fell over a 5000-meter cliff." After playing repeatedly, you should be able to learn the layout of the maze and work your way through it without encountering catastrophe.

This month's **Program listing**, Labyrinthian Caverns 2, contains a more exciting game version. It introduces roving lions, hordes of vampire bats, a giant spider, a narrow chasm you have to cross to reach the exit, and a locked door barring escape. To deal with these obstacles and threats to life and limb, you'll place several objects in the cavern tunnels—a wooden club, a high-frequency horn, a can of bug spray, a ladder, and a key, among other things. Pick up these objects whenever you encounter them, put them down wherever you like, and use them whenever you see fit. Your only restriction is that you can carry just two objects at a time.

You can play the game at three levels. At the first, your starting location (but not direction) within the cavern remains the same. Similarly, all objects and animals keep the same starting positions, and during play the lion and bats remain stationary. If you choose the second level, the program randomly selects your starting location, so you must determine where you are before you can effectively work your way out of the cave.

The third level of play locates each animal and object at randomly selected starting positions and lets the lion and bats move freely throughout the caverns. In all three cases, you have up to 1000 moves to find your way out of the maze. Also, when encountering animals in the cave, you have a chance of surviving (with injuries) even if you don't have the appropriate defensive weapon. Be alert, though: Carrying objects and suffering injuries reduce your number of remaining moves.



Arm yourself with BASIC weaponry—but watch out for monsters lurking in those nested loops.

Jan Muller

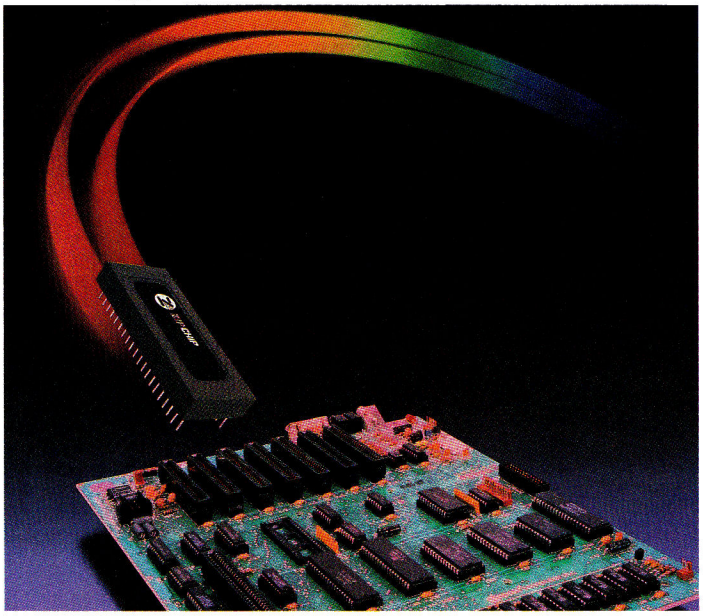
Although the **Program listing** contains the entire game, this month I'll describe only the object-handling routines. In February's column I'll conclude this series with animal-handling routines and details on customizing the program with additional objects. The program requires very little modification to allow two more animals and two more tools or weapons.

Last month's column described setting up and loading the maze into your Apple's memory (through READ/DATA statements and a two-dimensional array), the menu display, and conversion of your move selections to a location change in the maze. Although the code dealing with these issues in Labyrinthian Caverns 2 differs slightly and the maze is subtly altered, the basics are the same. I encourage you to review that column if these concepts aren't clear to you.

This program's first command, in line 10, calls up the initialization subroutine (lines 100–145). This subroutine in turn calls several subroutines that, except for one additional step, are virtually identical to those used last month. Lines 8100–8162 set up three arrays to handle information about the program's objects and animals. The A1$ and A2$ arrays together contain the object's name (for example, "wooden" and "club"). The A(12,3) array has 13 rows (don't forget row zero) and four columns (zero through 3). Each row in this array contains the row and column location for one animal or object and a status indicator telling whether that animal or object is simply lying about or is currently involved in the game play.

A(0,1), A(0,2), and A(0,3) contain information about the player. The first two elements are the row and column values for your current maze location, and the third is the direction (1–4) you're currently facing. These variables take the place of PR, PC, and DR, which you used in last month's listing. The next DATA set after "gallant, player, 4, 7" is "hungry, lion, 9, 11." A1$(1) becomes "hungry"; A2$(1) becomes "lion"; and A(1,1) and A(1,2) become 9 and 11, the lion's starting row-and-column maze position. Because the lion doesn't attack you immediately, Labyrinthian Caverns 2 assigns A(1,0) a ►

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Program listing. Labyrinthian Caverns 2.

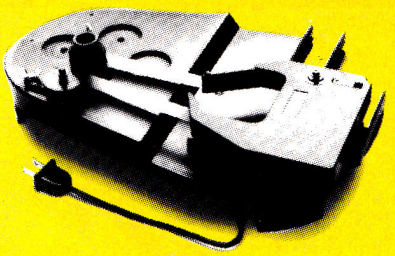
```
1  REM  LABYRINTHIAN CAVERNS 2  [1756]
2  REM  BY DAN BISHOP  [1895]
3  REM      APPLESOFT ADVISOR  [1563]
4  REM      INCIDER MAGAZINE  [1440]
5  REM  ************************  [1139]
6  REM  [184]
10  GOSUB 100: REM  INITIALIZE PROGRAM  [1921]
15  GOSUB 300: REM  GET MENU CHOICE  [1630]
20  IF M = M1 THEN  GOTO 90: REM  CHOSE TO QUIT  [2264]
25  IF MV > NM THEN  GOSUB 780: GOTO 90: REM  OUT OF M
    OVES  [2711]
30  IF M <  = 4 THEN  GOSUB 500: REM  MOVE PLAYER  [2342]
31  REM  ******************  [955]
32  REM  REMOVE THE REMS ON LINES 34 AND 176 TO ACTIVA
    TE THE DEBUGGER ROUTINE  [4744]
33  REM  ******************  [957]
34  REM  GOSUB 9000  [861]
35  IF XX = 1 THEN  GOTO 90: REM  PLAYER HIT DISASTER
    SQUARE  [3239]
40  IF M > 4 THEN  GOSUB 1000: REM  OBJECT HANDLER ROU
    TINE  [2945]
45  IF OM = 0 THEN  GOSUB 2000: REM  ANIMAL HANDLER RO
    UTINE  [3022]
50  IF XX = 1 THEN  GOTO 90  [1128]
55 WM = 0: GOTO 15  [806]
90  GOSUB 190: REM  PAUSE  [1070]
91  GOSUB 400: REM  CLEAR BOX  [1307]
92  VTAB 4: HTAB 10  [611]
93  PRINT "THANKS FOR PLAYING!"  [1664]
94  PRINT  TAB( 10);"COME AGAIN, ANY TIME."  [2102]
95  VTAB 24: HTAB 1: END  [802]
96  REM  [274]
97  REM  ******************  [1105]
98  REM  INITIALIZE PROGRAM  [1630]
99  REM  ******************  [1107]
100  GOSUB 7800: REM  READ MENU DATA  [1690]
105  GOSUB 7900: REM  READ MAZE DATA  [1688]
110 LN$ = "========================================": REM
    39 EQUAL SIGNS  [4159]
115  GOSUB 7000: REM  DISPLAY INSTRUCTIONS  [2273]
120  GOSUB 8100: REM  INITIALIZE OBJECTS  [2073]
125  GOSUB 6000: REM  DISPLAY MENU  [1642]
130 MV = 0:NO = 0:IJ = 0  [1481]
135 AM = 0:OM = 0:WM = 0  [1481]
140 XX = 0:CX = 0:DX = 0  [1511]
145  RETURN  [322]
146  REM  [324]
147  REM  ********************  [1197]
148  REM  MOVE ANIMALS  [1218]
149  REM  ********************  [1199]
150  IF LV <  > 3 THEN 177: REM  MOVE ONLY IF LEVEL 3
    PLAY  [3248]
155  FOR I = 1 TO 2:A(I,0) = 0  [1482]
160 A(1,1) =  INT ( RND (1) * (RW - 2) + 2)  [2274]
165 A(1,2) =  INT ( RND (1) * (CL - 1) + 2)  [2253]
170  IF MZ(A(1,1),A(1,2)) <  > 0 THEN  GOTO 160  [2242]
175  NEXT I  [378]
176  REM  GOSUB 9000  [1003]
177  RETURN  [354]
178  REM  ********************  [1312]
179  REM  DISPLAY # MOVES LEFT  [1747]
180  VTAB 10: HTAB 1: PRINT "YOU HAVE ";: INVERSE  [1892]
181  PRINT NM - MV;: NORMAL  [1160]
182  PRINT " MOVES LEFT.";: RETURN  [1533]
187  REM  [365]
188  REM  ********************  [1322]
189  REM  PAUSE ROUTINE  [1363]
190  VTAB 23: HTAB 4  [713]
195  INPUT "PRESS <RETURN> TO CONTINUE...";X$: RETURN
    [2822]
247  REM  [425]
248  REM  ********************  [1340]
249  REM  CURSOR HIGHLIGHTING  [1887]
250  VTAB 12 + M: HTAB 1: INVERSE  [1261]
255  PRINT "->";M1$(M,0);  [1146]
260  NORMAL : RETURN  [397]
275  VTAB 12 + M: HTAB 1: NORMAL  [1030]
280  PRINT "  ";M1$(M,0);  [873]
285  RETURN  [207]
296  REM  [219]
297  REM  ********************  [1134]
298  REM  MENU SELECTION EVALUATOR  [1995]
299  REM  ********************  [1136]
300  GET Z$  [361]
305  IF M > 0 AND  ASC (Z$) = 13 THEN 390  [1857]
310 Z = 0: FOR I = 1 TO M1  [1237]
315  IF Z$ = M1$(I,0) THEN Z = I: GOSUB 275:M = I: GOSUB
    250  [2711]
320  NEXT I  [268]
325  IF Z = 1 THEN 390  [942]
330  IF  ASC (Z$) <  > 10 THEN 350  [1546]
335  GOSUB 275:M = M + 1  [1083]
340  IF M > M1 THEN M = 1  [1198]
345  GOSUB 250: GOTO 300  [793]
350  IF  ASC (Z$) <  > 11 THEN 370  [1569]
355  GOSUB 275:M = M - 1  [1104]
360  IF M < 1 THEN M = M1  [1220]
365  GOSUB 250: GOTO 300  [813]
370  GOTO 300  [433]
390  RETURN  [312]
396  REM  [319]
397  REM  ********************  [1234]
398  REM  WINDOW ERASE ROUTINES  [1922]
399  REM  ********************  [1236]
400  VTAB 3: HTAB 1  [615]
405  FOR I = 1 TO 6: PRINT  SPC( 40)  [1436]
410  NEXT I  [358]
415  VTAB 9: PRINT LN$;  [872]
420  VTAB 3: HTAB 1: RETURN  [870]
450  FOR I = 1 TO 6  [901]
455  VTAB 11 + I: HTAB 33  [1043]
460  PRINT  SPC( 7);  [741]
465  NEXT I  [413]
470  RETURN  [392]
496  REM  [419]
497  REM  ********************  [1376]
498  REM  MOVE AVALUATOR ROUTINE  [2065]
499  REM  ********************  [1378]
500 WM = 0:TR = A(0,1):TC = A(0,2): IF DX <  > 0 AND M
    <  > 2 THEN  GOSUB 790: GOTO 585  [4611]
502  IF CX <  > 0 AND M <  > 2 THEN  GOSUB 785: GOTO 5
    85  [2714]
505 CX = 0:DX = 0:PR = TR:PC = TC  [2289]
510  IF A(0,3) = 1 THEN  ON M GOSUB 590,591,592,593: GOTO
    530  [2754]
515  IF A(0,3) = 2 THEN  ON M GOSUB 592,593,591,590: GOTO
    530  [2585]
520  IF A(0,3) = 3 THEN  ON M GOSUB 591,590,593,592: GOTO
    530  [2511]
525  ON M GOSUB 593,592,590,591  [1218]
530  IF M = 2 THEN A(0,3) = A(0,3) + 2  [1760]
535  IF M = 3 THEN A(0,3) = A(0,3) + 1  [1765]
540  IF M = 4 THEN A(0,3) = A(0,3) + 3  [1773]
545  IF A(0,3) > 4 THEN A(0,3) = A(0,3) - 4  [1991]
550 MV = MV + 1 + IJ + NO: GOSUB 180  [1914]
555  IF MZ(TR,TC) = 9 THEN WM = 1: GOSUB 775: GOTO 585
    [2497]
560  IF AM = 0 THEN  GOSUB 700  [1144]
565  IF XX <  > 1 THEN A(0,1) = TR:A(0,2) = TC: GOSUB
    600  [2815]
570  IF IJ > 0 THEN IJ = IJ - 1  [1503]
585  RETURN  [252]
590 TR = A(0,1) - 1: RETURN  [1226]
591 TR = A(0,1) + 1: RETURN  [1226]
592 TC = A(0,2) + 1: RETURN  [1213]
593 TC = A(0,2) - 1: RETURN  [1215]
596  REM  [264]
```


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```
597  REM  ********************** [1263]
598  REM  OBJECT NOTIFICATION  [1672]
599  REM  ********************** [1265]
600  REM   [268]
605 OM = 0:PF = 0: FOR I = 6 TO 12  [1785]
610  IF A(I,1) = A(0,1) AND A(I,2) = A(0,2) THEN OM =
     1:PF = PF + 1:A(I,0) = 1: GOTO 620  [4549]
615  IF A(I,0) <  > 2 THEN A(I,0) = 0  [1818]
620  NEXT I: IF OM = 0 THEN  RETURN   [1329]
625  GOSUB 850  [448]
630  RETURN   [297]
696  REM    [396]
697  REM  ********************** [1405]
698  REM  MESSAGES BASED ON MOVE  [1913]
699  REM   [367]
700  GOSUB 480  [514]
705  ON M2(TR,TC) + 1 GOSUB 730,735,740,745,750,755,76
     0,765,770  [3183]
710  IF XX <  > 1 THEN  PRINT "WHAT ARE YOU GOING TO D
     O?"  [3146]
715  RETURN   [382]
730  PRINT "YOU ARE STILL ALIVE, GROPING AROUND"  [2899]
731  PRINT "IN THE DARKNESS. YOU ARE "  [2129]
732  IF IJ > 0 THEN  PRINT "RECOVERING FROM YOUR INJUR
     IES.": GOTO 734  [3792]
733  PRINT "WELL AND HEALTHY."  [1633]
734  RETURN   [401]
735  RETURN   [402]
740  PRINT "THE TUNNEL YOU WERE IN JUST CAVED IN."  [2992]
741  PRINT "YOU HAVE BEEN SQUASHED BY A MAMMOTH"  [2861]
742  PRINT "BOULDER. BETTER LUCK NEXT TIME!"  [2597]
743 XX = 1: RETURN   [901]
745  PRINT "YOU NEARLY FELL INTO A CHASM"  [2395]
746  PRINT "BLOCKING YOUR WAY. YOU CANT JUMP OVER."  [3114]
748 CX = 1: RETURN   [885]
750  PRINT "THAT FOUL SMELL YOU JUST DETECTED CAME"  [3117]
751  PRINT "FROM THE PIRANHA POOL YOU JUST FELL"  [2919]
752  PRINT "INTO. YOU HAVE GIVEN NEW MEANING TO THE"  [3135]
753  PRINT "TERM FISH BAIT."  [1505]
754 XX = 1: RETURN   [912]
755  PRINT "YOU NEARLY FELL INTO A NARROW CHASM"  [2910]
756  PRINT "BLOCKING YOUR WAY. YOU CANT JUMP OVER."  [3124]
758 CX = 2: RETURN   [896]
760  PRINT "THAT RUMBLING NOISE YOU JUST HEARD WAS"  [3161]
761  PRINT "AN EXTINCT VOLCANO JUST COMING TO LIFE."  [3181]
762  PRINT "LAVA HAS JUST FILLED THE CAVERNS. THEY"  [3083]
763  PRINT "WILL FIND YOUR PETRIFIED BODY IN 2832."  [3009]
764 XX = 1: RETURN   [922]
765  PRINT "YOUR PROGRESS IS BLOCKED BY A TIGHTLY"  [3090]
766  PRINT "SEALED WOODEN DOOR. IT HAS AN OLD,"  [2477]
767  PRINT "RUSTY LOCK HOLDING IT CLOSED."  [2521]
768 DX = 1: RETURN   [651]
770  PRINT "SO VERY SORRY!"  [1259]
771  PRINT "YOU JUST STEPPED OVER A 5000 METER"  [2523]
772  PRINT "CLIFF AND ARE NO LONGER TO BE FOUND."  [2604]
773  PRINT "AT LEAST YOUR WORRIES ARE OVER!"  [2403]
774 XX = 1: RETURN   [677]
775  GOSUB 400: PRINT "YOU JUST BASHED INTO A WALL AND
     LOST"  [3088]
776  IF IJ = 0 THEN  PRINT "ONE MOVE.": GOTO 778  [2047]
777  PRINT 1 + IJ;" MOVES."  [1193]
778  PRINT "YOU ARE STILL FACING THE WALL."  [2287]
779  PRINT "WHAT ARE YOU GOING TO DO?": RETURN   [2185]
780  GOSUB 400  [339]
781  PRINT "YOU HAVE JUST EXPIRED OF STARVATION AND"  [3001]
782  PRINT "EXHAUSTION. REST UP AND COME BACK AGAIN"  [2896]
783  PRINT "IN ANOTHER LIFE."  [1350]
784 XX = 1: RETURN   [687]
785  GOSUB 400  [344]
786  PRINT "YOU SHOULD HAVE PAYED ATTENTION TO YOUR"  [3038]
787  PRINT "INSTINCTS. YOU JUST FELL INTO THE CHASM"  [2990]
788  PRINT "AND WILL NEVER BE HEARD FROM AGAIN!"  [2560]
789 XX = 1: RETURN   [692]
790  GOSUB 400: PRINT "YOU BUMPED INTO HARD ROCK. YOU
     TURN"  [3083]
791  PRINT "TO FACE THE WOODEN DOOR AGAIN."  [2265]
792  PRINT "WHAT ARE YOU GOING TO DO?": RETURN   [2198]
800  GOSUB 400  [359]
805  ON EM GOSUB 815,820,825,830,835  [1504]
810  PRINT "MAKE ANOTHER SELECTION.": RETURN   [2137]
815  PRINT "YOU ARE NOT CARRYING ANY OBJECTS TO USE.":
     RETURN   [3280]
820  PRINT "THERE ARE NO OBJECTS TO BE PICKED UP.": RETURN
     [2980]
825  PRINT "THERE IS NOTHING AROUND ON WHICH TO USE"  [2990]
826  PRINT "THE OBJECTS YOU ARE CARRYING.": RETURN   [2547]
827  PRINT "WHAT DO YOU WANT TO DO?": RETURN   [2106]
830  PRINT "SORRY, YOU ARE ALREADY CARRYING TWO"  [2778]
831  PRINT "OBJECTS. THAT IS YOUR LOAD LIMIT.": RETURN
     [2796]
835  PRINT "YOU HAVE NO OBJECTS TO PUT DOWN!": RETURN
     [2732]
850  GOSUB 400: IF OM = 8 OR OM = 9 THEN  GOSUB 730: GOTO
     856  [2605]
855  ON OM - 5 GOSUB 860,865,870,875,880,885,890  [2250]
856  PRINT "WHAT ARE YOU GOING TO DO?"  [2027]
858  RETURN   [270]
860  PRINT "YOU HAVE TRIPPED ON A WOODEN CLUB.": RETURN
     [2879]
865  PRINT "YOU HAVE STEPPED ON A RUSTY HORN."  [2626]
866  PRINT "IT STILL MAKES A HIGH PITCHED, BARELY"  [2822]
867  PRINT "AUDIBLE SOUND WHEN YOU BLOW INTO IT.": RETURN
     [3062]
870  RETURN   [282]
875  RETURN   [287]
880  PRINT "YOU JUST KICKED A CAN OF BUG SPRAY."  [2690]
881  PRINT "IT SEEMS TO BE FULL.": RETURN   [1922]
885  PRINT "YOU JUST BUMPED INTO A RICKETY LADDER."  [2982]
886  PRINT "BUT THE CAVERNS ARE ALL ON ONE LEVEL."  [2827]
887  PRINT "HOW CAN A LADDER BE OF ANY USE?": RETURN   [2592]
890  PRINT "YOUR HAND BRUSHED AGAINST AN ANCIENT"  [2858]
891  PRINT "KEY RESTING ON A LEDGE IN THE WALL.": RETURN
     [2913]
996  REM    [441]
997  REM  ********************** [1408]
998  REM  OBJECT HANDLING ROUTINES  [2160]
999  REM  ********************** [1410]
1000  IF M <  > 5 THEN 1100  [1344]
1005  IF OM = 0 THEN EM = 2: GOSUB 800: RETURN   [2046]
1010  IF NO = 2 THEN EM = 4: GOSUB 800: RETURN   [2056]
1015  IF PF <  = 1 THEN OV = OM: GOTO 1025  [2193]
1020  IF PF > 1 THEN OV$ = "PICK UP":OW = 1: GOSUB 115
     0  [2913]
1025  IF OV = 0 THEN  GOSUB 400: GOTO 1045  [1550]
1030 NO = NO + 1: GOSUB 400: PRINT "YOU JUST FICKED UP
     A "A1$(OV)" "A2$(OV)"."  [3883]
1035 A(OV,0) = 2:A(OV,1) = 0:A(OV,2) = 0  [2113]
1040  PRINT "WHAT DO YOU WANT TO DO NOW?": IF PF = 0 THEN
     OM = 0  [3350]
1045  GOSUB 600: GOSUB 1050: RETURN   [1018]
1050  GOSUB 450:FG = 0  [814]
1060  INVERSE : FOR I = 6 TO 12  [1012]
1065  IF A(I,0) = 2 THEN  VTAB 13 + FG: HTAB 33: PRINT
     A2$(I);:FG = 1   [2960]
1070  NEXT I  [253]
1075  IF FG = 0 THEN  VTAB 13: HTAB 33: PRINT "NOTHING
     ";  [2299]
1080  NORMAL : RETURN   [452]
1100  IF M <  > 6 THEN 1200  [1191]
1105  IF NO = 0 THEN EM = 5: GOSUB 800: RETURN   [1895]
1110 OV$ = "DROP":OW = 2: GOSUB 1150  [1791]
1120  IF OV = 0 THEN  GOSUB 400: GOTO 1145  [1646]
1125  IF A(OV,0) = 2 THEN NO = NO - 1  [1907]
1130 A(OV,1) = A(0,1):A(OV,2) = A(0,2):A(OV,0) = 1  [2686]
1135 OM = OV:PF = PF + 1: GOSUB 1050  [1891]
1140  GOSUB 400: PRINT "YOU JUST DROPPED YOUR "A1$(OV)
     " "A2$(OV)"."  [3331]
1145  PRINT "WHAT IS YOUR NEXT MOVE?": RETURN   [2234]
```

Continued

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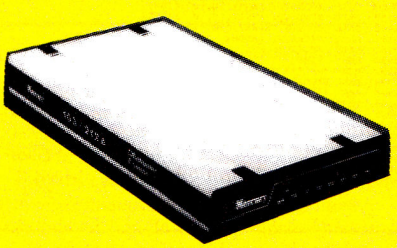
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Continued

```
1150  GOSUB 400  [454]
1155  PRINT "WHICH OBJECT DO YOU WISH TO "OV$"?"  [2681]
1160  FOR I = 6 TO 12: IF A(I,0) = OW THEN  PRINT A2$(
      I)"  ";  [2698]
1165  NEXT I: PRINT "NONE"  [964]
1170  INPUT OT$: IF OT$ = "NONE" THEN OV = 0: RETURN   [2343]
1175 J = 0: FOR I = 6 TO 12  [1299]
1180  IF A2$(I) = OT$ AND A(I,0) = OW THEN J = I:I = 1
      2  [2924]
1185  NEXT I: IF J = 0 THEN 1150  [1324]
1190 OV = J: RETURN   [852]
1200  IF M <  > 7 THEN  RETURN   [1274]
1205  IF NO = 0 THEN EM = 1: GOSUB 800: RETURN   [1991]
1206  IF DX = 1 AND A(12,0) = 2 THEN 1215  [1969]
1207  IF CX = 2 AND A(11,0) = 2 THEN 1215  [1969]
1210  IF AM = 0 THEN EM = 3: GOSUB 800: RETURN   [1983]
1215 OV$ = "USE":OW = 2: GOSUB 1150  [1824]
1220  IF OV = 0 THEN  GOSUB 400: GOTO 1245  [1747]
1221  IF DX = 1 AND OV = 12 THEN  GOSUB 1270: RETURN   [2273]
1222  IF DX = 1 THEN  GOSUB 1350: RETURN   [1596]
1223  IF CX = 2 AND OV = 11 THEN  GOSUB 1250: RETURN   [2272]
1224  IF CX = 1 AND OV = 11 THEN  GOSUB 1265: RETURN   [2278]
1225  GOSUB 1350  [582]
1230 AM = 0  [608]
1245  PRINT "WHAT NEXT?": RETURN   [1436]
1250 CX = 0: IF A(0,3) = 2 THEN A(0,2) = 21  [2210]
1255  IF A(0,3) = 4 THEN A(0,2) = 19  [1755]
1260  GOSUB 400: PRINT "YOU SUCCESSFULLY CROSSED THE C
      HASM BY"  [2497]
1261  PRINT "LAYING THE LADDER ACROSS IT AND "  [2619]
1262  PRINT "CRAWLING ALONG TO THE OTHER SIDE."  [2737]
1264  PRINT "GOOD WORK! WHAT IS YOUR NEXT MOVE?":CX =
      0: RETURN   [3539]
1265  GOSUB 400: PRINT "THE LADDER DIDN'T REACH ACROSS.
      "  [2893]
1266  GOSUB 771: RETURN   [816]
1270  GOSUB 400: PRINT "CONGRATULATIONS!"  [2068]
1271  PRINT "YOU MANAGED TO MAKE IT OUT OF THE "  [2735]
1272  PRINT TI$;"!":XX = 1: RETURN   [1517]
1350  GOSUB 400: PRINT "THE OBJECT YOU ARE USING IS NO
      T"  [2823]
1351  PRINT "HELPFUL IN THIS SITUATION!": RETURN   [2389]
1995  REM   [388]
1996  REM  ************************  [1471]
1997  REM  ANIMAL ATTACK ROUTINES  [1993]
1998  REM  ************************  [1473]
1999  REM   [392]
2000 AM = 0: GOSUB 150: REM  MOVE ANIMALS  [2125]
2005  FOR I = 1 TO 5  [925]
2010  IF A(I,1) = A(0,1) AND A(I,2) = A(0,2) THEN AM =
      1:A(I,0) = 1:I = 5  [3856]
2015  NEXT I: IF AM = 0 THEN  RETURN   [1435]
2018  IF AM = 3 OR AM = 4 THEN AM = 0: RETURN   [2244]
2020  GOSUB 400  [559]
2025  ON AM GOSUB 2050,2060,2070,2080,2090  [1919]
2030  PRINT "WHAT ARE YOU GOING TO DO NOW?": GOTO 2100
      [2881]
2050  PRINT "QUIET! YOU CAN JUST MAKE OUT THE"  [2429]
2051  PRINT "RASPY BREATHING OF AN ANIMAL..."  [2316]
2052  PRINT "IT SNARLS MENACINGLY. IT ATTACKS!"  [2520]
2053  RETURN   [190]
2060  PRINT "THE HORRENDOUS NOISE OF THOUSANDS OF"  [2813]
2061  PRINT "BAT WINGS FILLS THE AIR AND SURROUNDS"  [2833]
2062  PRINT "YOU. BLOOD SUCKING VAMPIRE BATS ENGULF"  [2914]
2063  PRINT "YOU.": RETURN   [811]
2070  RETURN   [207]
2080  RETURN   [217]
2090  PRINT "YOU HAVE BECOME ENTANGLED IN A MAMMOTH"  [2873]
2091  PRINT "SPIDER WEB. TWO LARGE RED SPIDER EYES"  [2817]
2092  PRINT "ARE WATCHING YOUR HUNGRILY."  [2222]
2093  PRINT "THE SPIDER IS INCHING CLOSER, CLOSER...":
      RETURN   [3144]
2100  GOSUB 300: IF M = M1 THEN XX = 1: RETURN   [1889]
2105  IF MV > NM THEN  GOSUB 700:XX = 1: RETURN   [2020]
2110  IF M > 4 THEN  GOTO 2300  [1143]
2115  GOSUB 500  [400]
2120  IF WM = 1 THEN  GOSUB 2165: RETURN   [1487]
2125  IF XX = 1 THEN  RETURN   [1064]
2140  GOSUB 400  [424]
2145 A(AM,0) =  INT ( RND (1) * 4): IF A(AM,0) > 1 THEN
      2165  [2857]
2150  PRINT "BY STEALTH AND CUNNING, YOU MANAGED"  [2743]
2155  PRINT "TO ESCAPE THE "A2$(AM)" THIS TIME."  [2453]
2160 A(AM,0) = 0:AM = 0: RETURN   [1447]
2165  GOSUB 400  [449]
2166  PRINT "UNFORTUNATELY, THE "A1$(AM)" "A2$(AM)  [2584]
2167  PRINT "WON THIS TIME. A "A2$(AM + 5)" MIGHT"  [2583]
2168  PRINT "HAVE HELPED. BETTER LUCK NEXT TIME."  [2739]
2169 XX = 1: RETURN   [797]
2170  GOSUB 400  [454]
2171  PRINT "SORRY, A "A1$(OV)" "A2$(OV)" IS"  [2122]
2172  PRINT "NOT VERY EFFECTIVE AGAINST A "A1$(AM)  [2727]
2173  PRINT A2$(AM)"."  [807]
2174  PRINT "WHAT IS YOUR NEXT MOVE?": RETURN   [2243]
2300  IF M = 7 THEN  GOTO 2320  [1339]
2305  GOSUB 400: PRINT "WHILE YOU WERE FIDDLING AROUND
      "  [2745]
2310  PRINT "THE "A2$(AM)" GOT THE BETTER OF YOU."  [2489]
2315  PRINT "BETTER LUCK NEXT TIME.":XX = 1: RETURN   [2521]
2320  IF NO = 0 THEN EM = 1: GOSUB 800: GOTO 2100  [2020]
2325 OV$ = "USE":OW = 2: GOSUB 1150  [1659]
2330  IF OV = 0 THEN  GOSUB 400: PRINT "WHAT NEXT?": GOTO
      2100  [2607]
2335  IF OV <  > AM + 5 THEN  GOSUB 2170: GOTO 2145  [2196]
2340  GOSUB 400: PRINT "GOOD WORK. YOU FOUGHT OFF THE
      "A2$(AM)  [3071]
2345  PRINT "WITH YOUR "A1$(OV)" "A2$(OV)  [1912]
2350  PRINT "AND ARE FREE TO CONTINUE ON YOUR WAY."  [2805]
2355  PRINT "WHAT IS YOUR NEXT MOVE?":A(AM,0) = 0:AM =
      0: RETURN   [3319]
5996  REM   [389]
5997  REM  ************************  [1308]
5998  REM  DISPLAY MENU  [1218]
5999  REM  ************************  [1310]
6000  HOME : VTAB 1: HTAB 10  [860]
6005  PRINT TI$  [519]
6010  PRINT LN$  [521]
6015  VTAB 9: HTAB 1: PRINT LN$  [1060]
6020  GOSUB 180  [484]
6025  VTAB 12: HTAB 5: PRINT "MASTER MENU"  [1795]
6030  FOR I = 1 TO M1  [943]
6035  VTAB 12 + I: HTAB 3  [963]
6040  PRINT M1$(I,0);"-"M1$(I,1);  [1409]
6045  NEXT I  [383]
6050 M = 1: GOSUB 250  [904]
6055  VTAB 10: HTAB 32  [758]
6060  INVERSE : PRINT "YOU ARE ";  [1257]
6065  VTAB 11: HTAB 32  [769]
6070  PRINT "CARRYING";  [1125]
6075  VTAB 13: HTAB 33  [782]
6080  PRINT "NOTHING";  [1063]
6085  NORMAL : RETURN   [612]
6996  REM   [289]
6997  REM  ************************  [1288]
6998  REM  DISPLAY INSTRUCTIONS  [1838]
6999  REM  ************************  [1290]
7000  HOME   [266]
7005  PRINT TI$  [499]
7010  PRINT LN$  [501]
7015  PRINT "YOU HAVE BECOME IMPRISONED IN THE": PRINT
      TI$"."  [3205]
7020  PRINT "YOU MUST FIND YOUR WAY OUT BEFORE YOU"  [2996]
7025  PRINT "MEET WITH DISASTER. YOU HAVE ONLY "NM  [2876]
7030  PRINT "MOVES IN WHICH TO SUCCEED.  GOOD LUCK!"  [2889]
7035  PRINT LN$  [526]
7045  PRINT "DURING YOUR STAY, YOU MAY ENCOUNTER "  [2938]
7050  PRINT "CERTAIN DISASTERS THAT ARE INESCAPABLE."  [3113]
7055  PRINT "YOU MAY ALSO ENCOUNTER LIFE THREATENING"  [3175]
7060  PRINT "SITUATIONS THAT YOU CAN DEFEND YOURSELF"  [3199]
7065  PRINT "FROM IF YOU ARE CARRYING THE RIGHT TOOL"  [3110]
7070  PRINT "OR WEAPON. THESE YOU WILL ENCOUNTER BY"  [3004]
7075  PRINT "CHANCE AS YOU WANDER THROUGH THE CAVE."  [3007]
7080  PRINT "UNFORTUNATELY, YOU CAN ONLY CARRY TWO"  [3097]
7085  PRINT "OF THESE OBJECTS AT A TIME. "  [2257]
7090  PRINT : PRINT "WHAT LEVEL OF PLAY DO YOU WANT PL
      AY AT?"  [3338]
7091  PRINT "PRESS 1, 2, OR 3...";  [1581]
7092  GET LV$  [595]
7093 LV =  VAL (LV$): IF LV < 1 OR LV > 3 THEN 7000  [2758]
7094  PRINT LV;: GOSUB 190: RETURN   [1239]
7095  GOSUB 190: RETURN   [775]
7796  REM   [324]
7797  REM  ************************  [1407]
7798  REM  READ MASTER MENU DATA  [1789]
7799  REM  ************************  [1409]
7800  READ M1,NM: REM  NUMBER OF MENU ITEMS  [2275]
7805  DATA  8, 1000: REM  AND ALLOWED MOVES  [2100]
7810  DIM M1$(M1,1)  [756]
7815  FOR I = 1 TO M1  [943]
7820  READ M1$(I,0),M1$(I,1)  [1166]
7825  NEXT I  [378]
7830  RETURN   [357]
7850  DATA  F, MOVE FORWARD  [1385]
7855  DATA  T, TURN AROUND & MOVE FORWARD  [2324]
7860  DATA  R, TURN RIGHT & MOVE FORWARD  [2252]
7865  DATA  L, TURN LEFT & MOVE FORWARD  [2168]
7870  DATA  P, PICK OBJECT UP  [1502]
7875  DATA  D, DROP OBJECT  [1312]
7880  DATA  U, USE OBJECT  [1262]
7885  DATA  Q, QUIT THE MAZE  [1468]
7890  RETURN   [417]
7896  REM   [424]
7897  REM  ************************  [1423]
7898  REM  READ TITLE AND MAZE DATA  [2050]
7899  REM  ************************  [1425]
7900  READ TI$  [578]
7905  READ RW,CL  [746]
7910  DATA  LABYRINTHIAN CAVERNS  [1886]
7915  DATA  11, 23  [703]
7920  DIM MZ(RW,CL)  [1008]
7925  HOME : PRINT "LOADING DATA."  [1608]
7930  PRINT "PLEASE WAIT..."  [1455]
7935  FOR I = 1 TO RW  [1106]
7940  FOR J = 1 TO CL  [831]
7945  READ MZ(I,J)  [614]
7950  NEXT J,I  [366]
7955  RETURN   [227]
8000  DATA  9,9,9,9,9,9,9,9,8,9,9,9,9,9,9,9,9,9,9,9,9,
      9,9  [2536]
8001  DATA  9,0,0,9,0,0,0,0,0,0,0,0,0,9,0,9,0,9,0,0,0,
      0,9  [2394]
8002  DATA  9,0,9,9,0,9,9,9,9,9,9,0,9,0,0,0,0,9,9,0,9,
      0,7  [2456]
8003  DATA  9,0,0,9,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,9,0,9,
      9,9  [2405]
8004  DATA  9,9,0,0,0,0,9,0,9,9,9,9,9,0,9,0,9,9,9,0,9,0,
      2,9  [2462]
8005  DATA  9,9,0,9,0,9,0,9,0,0,0,0,0,9,0,9,0,9,9,0,0,0,
      0,9  [2434]
8006  DATA  9,0,0,9,0,9,0,0,0,0,9,0,9,0,9,0,0,0,9,9,9,
      0,9  [2435]
8007  DATA  9,0,9,9,4,9,0,0,9,9,0,0,0,9,0,9,9,9,0,0,3,0,
      0,9  [2434]
8008  DATA  9,0,0,9,9,9,0,9,0,0,0,0,9,9,0,0,0,0,9,0,5,0,
      9,9  [2442]
8009  DATA  9,9,0,0,0,0,0,0,0,9,9,0,0,0,9,0,0,0,9,9,9,9,
      9,9  [2447]
8010  DATA  9,9,9,9,9,6,9,9,9,9,9,9,9,9,9,9,9,9,9,9,9,
      9,9  [2544]
8096  REM   [369]
8097  REM  ************************  [1452]
8098  REM  READ OBJECT & PLAYER DATA  [2035]
8099  REM  ************************  [1454]
8100  DIM A(12,3),A1$(12),A2$(12)  [1418]
8105  FOR I = 0 TO 12  [950]
8110 A(I,0) = 0  [772]
8115  READ A1$(I),A2$(I),A(I,1),A(I,2)  [1711]
8120  IF LV = 1 THEN 8145  [1213]
8125  IF LV = 2 AND I <  > 0 THEN 8160  [1958]
8130 A(I,1) =  INT ( RND (1) * (RW - 2) + 2)  [2339]
8135 A(I,2) =  INT ( RND (1) * (CL - 5) + 2)  [2322]
8140  IF MZ(A(I,1),A(I,2)) <  > 0 THEN 8130  [2189]
8145  NEXT I  [443]
8146 A(0,3) =  INT ( RND (1) * 4 + 1)  [1882]
8147  RETURN   [419]
8150  DATA  GALLANT, PLAYER, 4, 7  [1719]
8151  DATA  HUNGRY, LION, 9, 11  [1575]
8152  DATA  VAMPIRE, BATS, 4,3  [1539]
8153  DATA  NOTUSED, EMPTY, 0, 0  [1680]
8154  DATA  NOTUSED, EMPTY, 0, 0  [1681]
8155  DATA  GIANT, SPIDER, 4, 16  [1622]
8156  DATA  WOODEN, CLUB, 10, 8  [1549]
8157  DATA  RUSTY, HORN, 2, 12  [1527]
8158  DATA  NOTUSED, EMPTY, 0, 0  [1685]
8159  DATA  NOTUSED, EMPTY, 0, 0  [1686]
8160  DATA  SMELLY, SPRAY, 10, 17  [1716]
8161  DATA  RICKETY, LADDER, 10, 12  [1554]
8162  DATA  ANCIENT, KEY, 2, 3  [1496]
8996  REM   [249]
8997  REM  ************************  [1206]
8998  REM  DEBUGGING ROUTINE  [1517]
8999  REM  ************************  [1208]
9000  INVERSE : VTAB 15: HTAB 19  [869]
9001  PRINT A2$(0)"="A(0,1)","A(0,2)" @ "A(0,3)"  ";  [2034]
9002 J = 0: FOR I = 1 TO 12 STEP 2  [1465]
9003 J = J + 1: VTAB 16 + J: HTAB 19  [1594]
9004  PRINT A2$(I)"="A(I,1)","A(I,2)" ";  [1595]
9005  PRINT A2$(I + 1)"="A(I + 1,1)","A(I + 1,2)" ";  [2343]
9006  NEXT I  [284]
9007  NORMAL : RETURN   [474]
```

End

value of zero in line 8110. The program uses the loop beginning in line 8105 to read all 13 DATA lines into the appropriate rows in the array.

Before the program carries out this routine, however, it asks you to enter the desired level of play, 1–3, which it stores in LV. If LV is 1, line 8120 makes the program skip over lines 8130–8140, which randomize both the objects' and your starting positions. If LV is 2, Labyrinthian Caverns skips lines 8130–8140 for all objects except the player. If LV is 3, the program randomizes all objects' initial positions. Finally, line 8147 randomizes your direction.

THE OBSTACLES

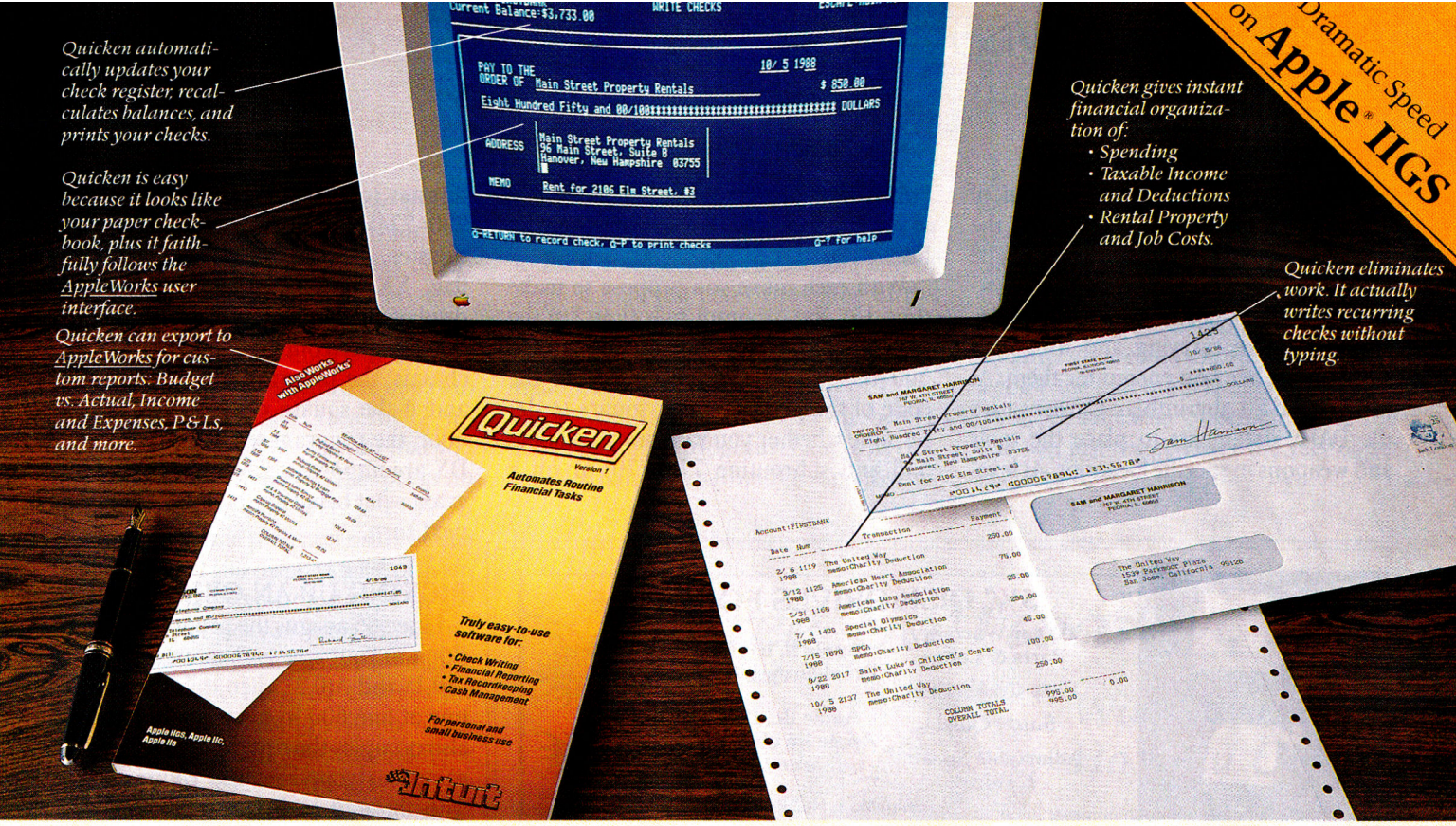
I've changed this month's maze slightly to provide a variety of examples of obstacles you can build into a program.

First, there are stationary obstacles, which you code directly into the maze with numbers other than zero (an open passage) or 9 (a wall). One type of stationary obstacle results in catastrophe and ends the game. Examples include the 5000-meter cliff (8), a volcanic eruption (6), a deadly cave-in (2), and a pool of piranha (4).

Another type of obstacle requires you to behave in a certain way to survive. For example, at the square coded 3, the program informs you that you're facing a chasm. You only action is to turn around and move forward (that is, retreat). To do otherwise ends the game.

The narrow chasm, coded 5, represents a third type of obstacle, which you can overcome by using the correct tool or weapon. In this case, you can cross the chasm only by using the ladder as a bridge. If you don't have the ladder with you, you must either turn around and go back the way you came or meet with a dreadful demise. Finally, there's the locked door (7) blocking your successful exit from the cave. Without a key, the door represents the same threat as a cavern wall. You must head back to find the key.

The spider also represents a stationary obstacle, although at level 3, its location changes with each game. The lion and bats at this level represent obstacles that change positions with each of your moves. You can never be sure just when or where you might encounter one of these terrors. Having the right weapon will always save you. Without it, the program still gives you a fighting chance, although if you escape, your injury factor, IJ, increases, costing you extra moves within each round of play. Fortunately, you heal slightly with each move until IJ is zero again. For more details on the animals catch my next column. ►



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CODE IC1288

There's no escape from the pool of piranha, the volcano, the cave-in, or the cliff. Avoidance is the only solution. The narrow chasm and the locked door, however, represent obstacles you can overcome if you're carrying and using the right tools when you encounter them. At levels 1 and 2 Labyrinthian Caverns uses the DATA statements to place the tools and weapons in specific locations. At level 3 their locations vary from game to game as the program selects them randomly at lines 8130 and 8135.

With each move you propose to make (line 15), the program calls (line 30) the move-evaluations subroutine (lines 500–593). This subroutine checks the code of the proposed new square to determine whether you ran into a wall (line 555 and subroutine 775–779) or hit a disaster square (line 560 and subroutine 700–774). If the square is a full-fledged disaster, the program sets the game-end flag, XX, to 1, ending the game after displaying the appropriate message. If the square contains one of the two chasms, the program sets CX to 1 or 2, and if the square contains the wooden door, the program sets DX to 1. CX and DX are important flags that tell the program what behavior to expect from your next turn.

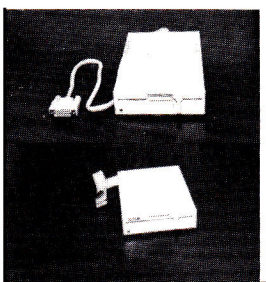
PICKING UP AN OBJECT

Line 565 assigns the proposed new position to your row and column variables, A(0,1) and A(0,2), then calls the subroutine at line 600 to see whether an object also occupies the square. The subroutine compares your row and column values with those of each of the objects, A(6,1) and A(6,2) through A(12,10) and A(12,2), in a loop. It sets the object-mode flag, OM, to a value between 6 and 12 if it finds an object in your new square.

Another flag, PF, counts the number of objects found, in case the subroutine locates more than one object in the same square. This lets the program know which object(s) it found and display the appropriate message on screen (line 850–891). The subroutine sets the object's status flag, A(OM,0) to 1, indicating to the program that it's available for you to pick up.

Program control now returns to the main program and cycles back through the menu-selecton routine called from line 15. If you land on a square containing an object, you can choose to pick it up (M=5). If you're holding an object, you can choose to drop it (M=6) or use it (M=7). In all three cases, the program activates line 40 and calls the object-handler subroutine (lines 1000–1351). If you move away from the square instead, the program resets all flags to zero.

Choosing to pick up an object involves lines 1005–1080. If OM is zero, there's no object to pick up; the program tells you, then returns to the main program at line 45. If you're already carrying two objects, then NO=2, and the program won't let you pick up the third. Line 1010



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displays the appropriate message and returns control to the main program.

At line 1015, the program has determined that at least one object occupies the same square you do and that you've chosen to pick up an object. If PF isn't greater than 1, there's only one object to pick up. Labyrinthian Caverns 2 increases NO by one and tells you that you just picked up an object the program calculates as A$(1)−A$(2). If PF is greater than 1, the program's subroutine in lines 1150–1190 displays a list of available objects, and you must type in the name of the object you want to pick up (or "none" if you've changed your mind). In any case, the program changes the selected object's row and column values to zero (the program now assumes these values are the same as the player's row and column), and sets the object's status flag, A(OM,0), to 2, indicating a carried object. The program sets all other status flags, including PF, to zero and calls the subroutine at 600 again to see if there's yet another object to pick up.

The subroutine at line 1050–1080 displays each of the objects you're carrying. Labyrinthian Caverns updates this list, located to the right of the menu, each time you choose to pick up an object or set one down.

The program lets you carry items through the tunnel and stockpile them at strategic locations along the way. This, at least, gives you a fighting chance against animal attack, since you can carry only two items at a time. Furthermore, once you've located a stationary threat (the spider or the chasm), you can leave the appropriate object next to that menace. Not only does this make the object available where you need it, but stumbling across the object helps mark your position in the maze and warns you of danger in the neighboring square!

DROPPING OR USING AN OBJECT

Lines 1100–1145 handle the case in which you've chosen to drop an object you're carrying. Line 1105 checks to see whether NO=0. If so, an appropriate message reminds you you have no objects to drop. If you're carrying an object, the program calls the subroutine at line 1150 to list the objects you're carrying and to request that you enter the name of the object you want to drop, or "none."

When you name an object, Labyrinthian Caverns returns its status to 1 (because you can still pick it up before moving on); the program changes its row and column values from zero and assigns the same values as your row and column. The program sets the object-mode flag, OM, to the object's code value and increments PF by one. These flags' values are now the same as if you'd just stepped into this square and encountered the object for the first time. Don't be surprised if you see a message on screen telling you that you just tripped over the very object you set down. ►



Circle 286 on Reader Service Card.

Lines 1200–1351 deal with the menu selection "use object." Again, if NO=0, you have no object to use, and Labyrinthian Caverns tells you so. In line 1206, if the door flag, DX, is set, and you're carrying a key, then A(12,0)=2. If the chasm flag, CX, is set and you're carrying a ladder, then A(11,0)=2. In either situation, the program presents you with a list of the items you're carrying and asks you to type in the name of the object you want to use (subroutine at line 1150 again). If you choose the correct object you'll receive an appropriate message and the game continues. Otherwise, the program tells you that the object you're using isn't helpful and control returns to the main program so that you can make another menu selection.

THE DEBUGGER

When you're developing a program, your Apple can help you catch "run-time" program bugs. They're difficult bugs to spot, because the program seems to be running along quite nicely. But a run-time bug can make the program produce meaningless output. A debugger is a short subroutine written into the program to provide information about the program's progress. I've left the code in Labyrinthian Caverns so that you can see how to design and use a debugger in your own programs.

In Labyrinthian Caverns, the output from each cycle results in a series of on-screen messages and possible location changes for the player, the objects, and the animals. To verify that the program is working properly, the computer can display the locations of all 13 items on screen subroutine call to 150, which controls the animals' movement. The REM keyword precedes both GOSUB commands in lines 34 and 176. This makes the program ignore those lines, treating them as if they were remarks or comments.

To turn on the debugger, simply retype lines 34 and 176 without the REM keyword, then run the program. Fortunately, there's just enough room on screen to show this information without hiding any of the game displays.

MULTIPLE BRANCHING

One common design feature I use throughout Labyrinthian Caverns is the ON/GOSUB (or ON/GOTO) BASIC command. Line 805 in the listing exemplifies how to write these commands:

```
805 ON EM GOSUB 815, 1820, 825,
    830, 835
```

"Your Apple can help you catch run-time bugs that make your program produce meaningless output."

Some numeric variable name or numeric expression must follow the keyword ON. In this case, I gave a flag variable, EM, a value between 1 and 5 before Labyrinthian Caverns calls subroutine 800. At line 805, if EM=1, the program executes subroutine 815. If EM=2, it executes subroutine 1820, and so on. If EM is less than 1 or greater than 5, the program ignores line 806 and proceeds to the next BASIC command. In this line, 5 is the limit, because there are only five line numbers following the GOSUB command. When the called subroutine returns control to line 805, the program executes the next BASIC command (usually the next line) and ignores the unused line numbers.

This command is a very convenient substitute for several IF statements. For example, line 805 shown above takes the place of five IF EM/THEN GOSUB statements. Because program control eventually returns to the calling subroutine, this gives you a single point in the program from which to direct "multiple choice" branching, simplifying program design.

Often, the variable that controls branching doesn't have a range of values beginning at 1 (a requirement for ON/GOSUB commands). When this is the case, you can subtract a constant from the variable to arrive at a valid range. Lines 705 and 855 exemplify this procedure. In the first case, possible maze values range from zero through 9, so you must add +1 to the variable to get an appropriate range, 1 to 10. In the second case, OM has a range from 6 to 12, so you must subtract 5 from OM to extend the range from 1 to 7. Notice that seven GOSUB references follow the GOSUB part of the command, one for each possible value of OM–5.

LET'S GET ANIMAL

In my next column, I'll discuss the animal-handling routines in Labyrinthian Caverns 2, so don't lose track of this issue. I'll also show you how to add other obstacles, animals, and objects to the program to customize it with your own ideas. This will provide a good first step toward making your own adventure-game programs. An adventure format can be a good basis for educational games as well: For example, create a game in which you can escape from a maniacal wizard only by answering a math or geography question correctly.

This month's column contains the complete listing for Labyrinthian Caverns. It makes a nice gift for an Apple owner. If you'd rather not type in the program, I'll be happy to send a copy to you on disk for $9.50. If your request arrives before December 5, you should get the disk back before Christmas.■

Dan Bishop owns and operates a microcomputer consulting business. Write to him at 4124 Beaver Creek Drive, Fort Collins, CO 80526. Enclose a stamped, self-addressed envelope if you'd like a personal reply.

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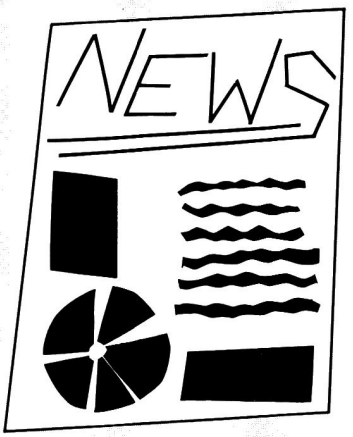
Desktop Publishing's Big Three

by Cynthia E. Field, Ph.D.

When Apple II desktop-publishing aficionados discuss the "Big Three," they're not referring to Ford, Chrysler, and G.M. They're talking about Softsync, Timeworks, and Springboard, purveyors of **Personal Newsletter**, **Publish It!**, and **Springboard Publisher**, respectively. With varying degrees of success, these three Apple II programs attempt to re-create the page-design capabilities that programs such as Pagemaker have bestowed upon Apple's Macintosh series of computers.

Not surprisingly, while Personal Newsletter, Publish It!, and Springboard Publisher share many similarities, they're hardly clones. These products don't operate identically, nor do they look alike. Most importantly, they may appeal to strikingly different types of users. For a quick comparison of program features, refer to the accompanying **Table**.

In future columns, I'll keep you posted on alternatives, including Pages from Pinpoint Publishing and GS-specific desktop-publishing programs that weren't shipping yet at press time.



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Jan Muller

PERSONAL NEWSLETTER

Personal Newsletter is the only program reviewed here that doesn't require additional memory or hardware. It does support the mouse, though you'll probably rarely use it.

According to Softsync's Rod Campbell, Personal Newsletter's unfinicky nature makes it especially popular in schools where computer budgets squeak, and students sometimes remove the mouse's rolling ball as an extracurricular activity. Being more or less mouseless, Personal Newsletter sports a traditional-looking user interface. The program displays mnemonic command bars across the bottom of the screen.

To access File-menu features, for example, press Solid apple-F. Next press the first letter of the feature you want: D for Directory, I for Import, L for Load, or S for Save.

While this fast, easy-to-master keyboard orientation appeals to many users, Personal Newsletter's greatest attribute may be its unmatched capability to import clip art created with programs such as Dazzle Draw, The Print Shop, and The Newsroom or with digitizers like ThunderScan and ComputerEyes.

If you like to create your own graphics, Personal Newsletter isn't tops. For example, it doesn't sport a graphics-creation toolkit that's as full-featured as Springboard Publisher's, but the progrm should still prove adequate for many Apple II illustrators.

Personal Newsletter's page-layout mode accommodates as many as ten generic "windows" on the program's screen-based page facsimile. Windows can hold headlines, text, or graphics. Setting up a two-column newsletter with one headline and one graphics area is as easy as adding, sizing, and positioning four windows.

You can type the body of your publication with Personal Newsletter's built-in word processor. Unless you're an incredibly good planner, however, you'll probably "bump" into the bottom of a window's frame, making you consider resizing that window (and perhaps others) or move the cursor to the next window to continue typing.

As an alternative, create text with another word processor, save it as an ASCII file, and "Flow" the file's contents from window to window onto the Personal Newsletter page automatically. If the file's too large, an error message alerts you that the file won't load completely, so keep your ASCII files short.

Unlike Publish It! and Springboard Publisher, Personal Newsletter doesn't let you automatically or willfully create a second page. Unless you queue separate files, the program limits your newsletters to one page.

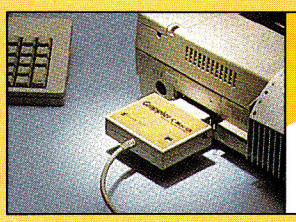
According to Softsync's Campbell, a revised version of Personal Newsletter, which was in the works at press time, will be able to accommodate longer publications. Other improvements will include free laser-printer support *and* a mail-order laser-printing service for customers who don't have access to a LaserWriter.

PUBLISH IT!

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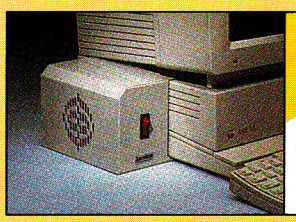
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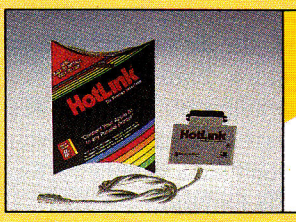


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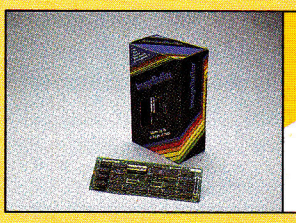
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quickly and easily with the mouse, look at Publish It! more closely. Despite its modest requirements—a joystick or mouse is highly recommended—Publish It!'s unusually powerful. (For an in-depth review of this program, see "All the Tricks of the Trade," April 1988, p. 26.)

You won't need to learn any keyboard commands to use Publish It!, although keyboard equivalents are available to speed up some operations. At least one GS owner has remarked that you can create almost a whole newsletter without even touching the keyboard.

What makes Publish It! so easy to use is its highly graphics-oriented interface. The program sports sensibly named pull-down menus (Apple, File, Edit, Font, Format, Page, Objects, Special, and Help), an iconic toolkit (with I-beam, text, graphics, linking, and shape tools), and a WYSIWYG (what you see is what you get) display.

Make that four displays: show full size, show double size, show half size, and size to fit. Use "size to fit" mode to lay out your page. Then switch to magnified views to type or fine-tune text or to display imported clip-art pictures.

With Publish It! laying out a page can be kid stuff. Creating columns? Just select the text tool. (It looks like an uppercase T.) Use the mouse to "rubberband" the text column into place. Let on-screen rulers guide you, or, for precision to three decimal places, pull down the Objects menu and click on "show specifications."

Repeating columns, instead of drawing each one separately, is as easy as copying, then pasting each duplicate wherever you want.

Creating graphics frames is just as easy—click on the graphics tool (it looks like an *X*-in-a-box), then size and place the graphics area anywhere on the page—even on top of a text area. Publish It! has a special (and crucial) feature that makes text wrap around a graphic instead of letting the picture "hide" the text beneath it.

Speaking of text, speed typists should stay away from Publish It!'s word processor except when typing headlines or short segments. Like other word proces- ►

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Program	Personal Newsletter	Publish It!	Springboard Publisher
Version tested	1.5	1.02	1.11
Retail price	$59.95	$99.95	$139.95
Operating system	ProDOS 8 1.5	ProDOS 8 1.4	ProDOS 8 1.4
Copy protection?	N	N	N
Hardware required	128K, enhanced IIe/c/GS, Franklin, Laser 128	128K, enhanced IIe/c/GS, Franklin, Laser 128	128K, enhanced IIe/c/GS
Input Devices	keyboard, mouse	mouse, joystick	keyboard, mouse
Hardware recommended	2 disk drives	mouse, 2 disk drives	GS, 1.25MB, mouse, 3½-inch drive
Dot-matrix printers supported	49	17	92
Printer interfaces supported	37	10	57
Print screen?	N	N	Y
Multicopy printing?	N	Y (1–99)	Y (1–99)
Print-quality modes	2	2	2
Laser printer?	Y (free)	Y ($39.95 additional)	Y (free in 2.0)
Format data disk?	N	N	Y
Import Newsroom graphics?	Y	N	Y
Import Print Shop graphics?	Y	N (Y 2.0)	N
Import Publish It! graphics?	Y	Y	N
Import Dazzle Draw graphics?	Y	Y	N
Import single-hi-res graphics?	Y	Y	Y
Import double-hi-res graphics?	Y	Y	N
Import ThunderScan images?	Y	Y	N
Import ComputerEyes images?	Y	Y	N
Import ASCII text files?	Y	Y	Y
Import AW WP files?	N	Y	Y
Import Bank St. Writer files?	N	Y	Y
On-line help?	Y	Y	N
User interface	command bar	Apple human interace	Apple human interface
Typefaces	6	6	3
Type styles	9	8	11
Font sizes (point)	12–72	9–72	9–72
Character spacing (kerning)?	Y	Y	Y

ADVERTISEMENT

Flight notes # 2B

Wrapping Up Europe - The deadline for entering our "Find Red Square" contest was November 15th, 1988. Current plans call for a mid-December drawing to determine the contest winner. This contest, requiring you to use **Flight Simulator** or **Jet** to locate Red Square on our new **"Western European Tour" Scenery Disk,** was as much fun for us as it was for you! Watch for another Scenery Disk promo contest next year.

The ThunderChopper/SubLOGIC Connection - ActionSoft Corporation was originally set up as a separate marketing arm for SubLOGIC-engineered, quickly-produced, low-cost simulations specifically designed for mass market channels. We soon discovered that SubLOGIC engineering is incapabable of cutting corners when it comes to developing new products. Instead, they spent many months turning ThunderChopper into a very different and desirable type of helicopter simulation. In a departure from most wargame-type scenarios, ThunderChopper assigns you first to aerodynamic flight training, and then to rescue missions. Even combat missions are defensively oriented in that your primary assignment is to escort your combat units. You only get to "shoot-'em-up" when defending your troops from enemy attack. Colonel Jack Rosenow, President of ActionSoft, was the helicopter flight instructor at the University of Illinois. He provided us with the insight (as well as the ultimatum) to make ThunderChopper's vertical flight characteristics the most accurate of any helicopter simulator on the market. This makes it unusually nice to fly.

Its Back! Not advertised since early 1984, the classic **Night Mission Pinball** will be back in production once again by the time you read this. Priced at only $29.95, now everyone can afford to add this classic to their software collection. If you're a family person like myself, be prepared to be without your computer for extended periods of time. Pinball's uncanny realism and general appeal has a way of captivating everyone.

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sors that use the Apple graphics screen, this one is s. . .l. . .o. . .w.

A more efficient option is to set up your page or pages (typically as many as four pages are possible on the version tested) and import text files and illustrations. Publish It! shines at this: You can import ASCII, AppleWorks word-processor, and Bank Street Writer files directly, the latter two with formatting features intact.

Early versions of Publish It! imported neither Print Shop nor Newsroom graphics, a stark disappointment to some veteran Apple II users. Look for version 2.0, slated for September 1988 (after this column's deadline), to have strengthened graphics capabilities. According to Timeworks' Vic Schiller, program upgrades are available at nominal cost to registered owners of earlier versions.

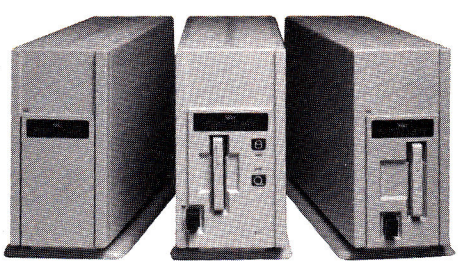
SPRINGBOARD PUBLISHER

Springboard Publisher offers more fea-

Program	Personal Newsletter	Publish It!	Springboard Publisher
Line spacing (leading)?	Y	Y	Y
Max # columns	10	65	9 (per text area)
Max document length	1 page (per file)	limited by memory, 4 pages typical	limited by disk, 6–8 pages on 5¼-inch disk, 35 pages on 3½-inch disk, longer on hard disk
User-created freehand graphics?	Y	N	Y
Basic graphics toolkit	3 shapes, 25 brushes, 30 patterns	4 shapes, 24 patterns, 6 line weights	6 shapes, 35 brushes, 24 patterns, 4 frame weights
"Special effects" toolkit	whitewash, blackout, add pattern, invert, fill, flip, zoom, undo	N/A	transparent paint, mirror, invert, flip, rotate, skew, fill, spray paint, lasso, marquee, eraser

The Sider™ Storage Solutions

The PRAISES.



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

So we were very pleased when *A+ Magazine* gave *The Sider* its 1988 Readers' Choice Award and started two Siders in their business "Dream Machine" lineups. And we were most gratified that, once again, ***InCider Magazine,*** in its recent Apple II user brand preference study, named *The Sider* the #1 independent mass storage supplier.

We think the reason is simple. It's value. *The Sider* gives you more reliable hard disk, tape and tape/disk combo subsystem hardware, more capacity choices, easier-to-use software, comprehensive documentation, on-line help and diagnostics, and warranty protection — for prices that, as you will see on the right, are praiseworthy indeed.

Program	Personal Newsletter	Publish It!	Springboard Publisher
Automatic frame borders?	Y	N	Y
Automatic graphics frames?	N	N	Y
Ruler dimensions	in.	in., cm., picas	in., cm., pixels
Ruler precision	1/6 inch (windows mode)	1/4 inch (size-to-fit mode)	1/2 inch (page mode)
Status alert?	Y, % memory remaining	Y, RAM used, RAM available, # objects accommodated	Y, when memory nearly full or full
Free clip art with program?	Y (> 200 images)	Y (> 200 images)	Y (few images with program; mail for free clip-art disk)
Free sample publications with program?	Y (3)	Y (9)	Y (1)
Add-on graphics disks?	Y (2)	Y (3)	Y (3)
Add-on font disks?	Y (2)	Y (2)	Y (1)
Add-on style-sheet disks?	N	Y (1)	Y

End

tures than either Personal Newsletter or Publish It!, but its hefty price and extraordinary memory requirements may help you appreciate the first two programs even more.

Springboard Publisher requires "an absolute minimum" of 128K and one floppy drive. Don't even consider using the program on such a system unless you have all the patience in the world. I did—and I don't.

The ideal configuration, according to Springboard's Tom Kuder, is (hold onto your wallet) an Apple IIGS with 1.25 megabytes of memory! Springboard also strongly recommends a mouse, although it's not required for most features.

Besides hungering for ten times the memory required by other Apple II desktop-publishing programs, Springboard Publisher needs the electronic equivalent of a vitamin B_{12} shot: a speedup device ►

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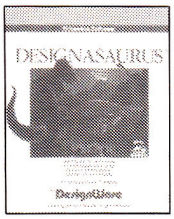
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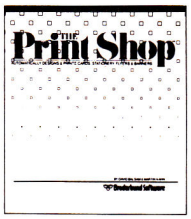
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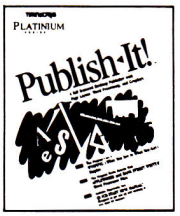
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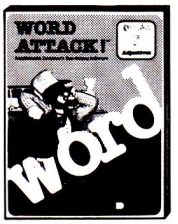
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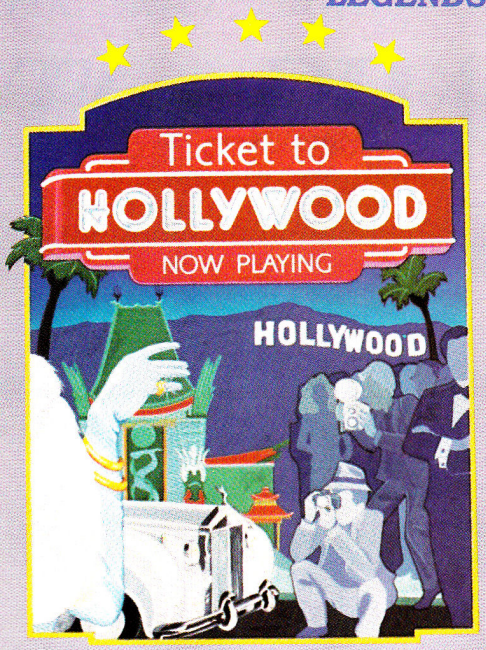
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PRESS ROOM

like the Transwarp card or the GS operating at "fast" system speed.

According to Kuder, Springboard Publisher 2.0 (which should be available now) promises greater speed performance—and comes with a special deal for discounts on Applied Engineering RAM cards.

Although the program is inordinately memory intensive and far too slow for most people, let's not overlook its desirable features. After all, Springboard Publisher is more than just a page-layout program. It's a three-in-one program designed, according to Kuder, to be a complete solution.

So, instead of having to buy separate word-processing, graphics, and page-layout programs, just buy one—Springboard Publisher with its three modes: Text, Graphics, and Page.

There's no contest when you compare Springboard Publisher's graphics-creation features to those of Personal Newsletter or Publish It! (which, incidentally, runs a distant third in this area).

Springboard Publisher also wins hands down when it comes to preparing longer publications. Compared to Personal Newsletter's one-page and Publish It!'s four-page productions, Springboard Publisher (with a hard-disk drive) can accommodate even book-length documents. The length of any Springboard Publisher document (or a Publish It! document for that matter) depends on the ratio of graphics to text or text to white space on a typical page.

Springboard's program offers a few desirable features you won't find elsewhere in the Apple II desktop-publishing realm. Two examples are its screen-printing capability and its utility for formatting a data disk from within the program. Screen printing is a great way to get a hardcopy of a publication's overall design.

Springboard Publisher's WYSIWYG appearance and Mac-like operating style make it shine, too. The program is easy to use, though importing text doesn't seem as intuitive as in Publish It!■

Write to Cynthia Field at 60 Border Drive, Wakefield, RI 02879.

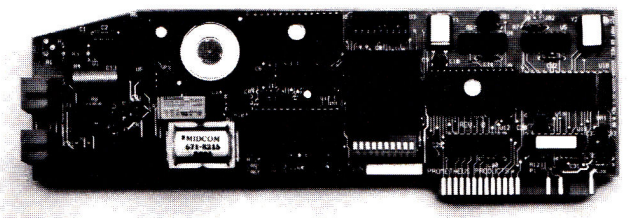
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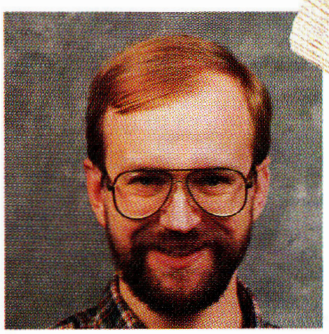
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The Game Master's Universe



by Scott Mace

"Even the most powerful graphics can't equal the social camaraderie of these superior multiplayer games."



Star Saga's Computer Game Master consists of thousands of rules that keep the game exciting and unpredictable.

No more solo pioneering—exploring unknown galaxies is becoming a group expedition and **Star Saga: One: Beyond the Boundary** (Masterplay Publishing Corporation, 8417 Sun State Street, Tampa, FL 33614, 813-888-7773, $79.95) is leading the journey. Clear off your kitchen table, grab five of your most adventurous friends, and get ready for an innovative look at the future.

You'd expect a six-player game that covers an entire galaxy to be massive, and this game certainly is. Unfold the colorful map, spread out the accompanying books, and you'll realize you need plenty of space to play this game.

Sitting around the table piled with the essential resources—and your GS—you and your friends can finally enjoy the entertainment together. No more "I can't see what's going on!" or "Give me the keyboard!" Every player is drawn into this epic as he or she becomes a fictional character who must decide where to go and what to do at each turn. Compared to conventional games such as Zork or Ultima, in which you must perform certain predetermined actions in a particular order, choosing your own activity is an exhilarating change of pace. By game's end (some 60 hours later), the epic has unfolded creatively before your eyes.

Your Apple IIGS—sitting off to the side—isn't the focus of the game, but rather the vehicle that keeps the game fun. Star Saga is the first game with absolutely no dead ends. Its software senses when you're wandering aimlessly and gives you a hint or two to get you back on track. The computer is even smarter in a group situation. It provides slowpokes with extra help, and holds back players who are racing ahead of the plot. The unique Computer Game Master that runs Star Saga is an artificial-intelligence program made up of thousands of rules that keep the game exciting and entertaining.

When I started my first game, for instance, I wandered into space to seek a magical stone. Pirates came, taking all my possessions, which I needed to trade for more valuable items. The computer then directed me to a mining world where I could dig up valuable materials. Andrew Greenberg (one of the game's designers and co-creator of Wizardry) assures me that sheer luck provided me with that convenient hint. I call it timing.

COOPERATE OR COMPETE

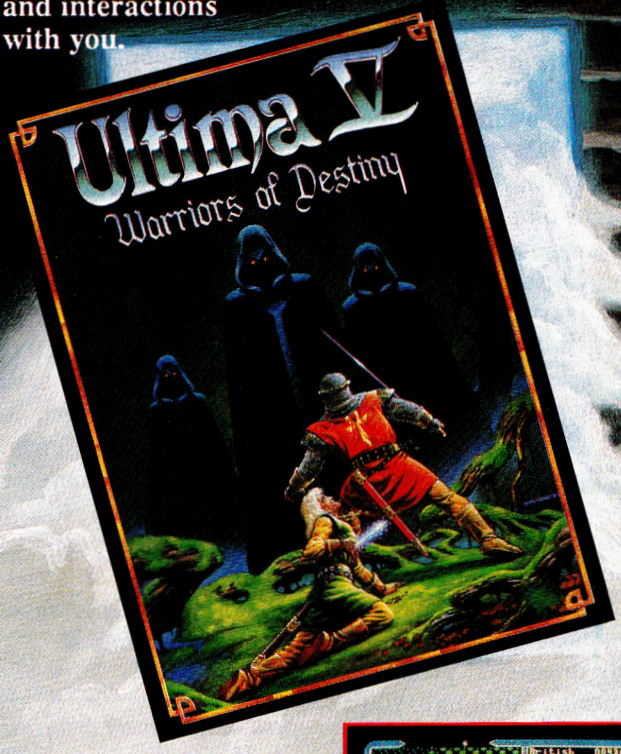
The game is a rich tapestry of different worlds, alien cultures, and various commodities. Star Saga starts out at a slower-than-normal pace, as you expend numerous turns getting acquainted with each new world. The game picks up quickly, though, as you find ways to interact with each other, to trade items, and to forge alliances. Information is most precious, but you'll also need vital commodities to defend yourself or to land on warlike planets. In a multiplayer situation, you'll spend much of your time exchanging information and goods with other players. You can compete or work together; the Computer Game Master will accommodate all situations. ►

The wait is over... but the excitement has just begun.

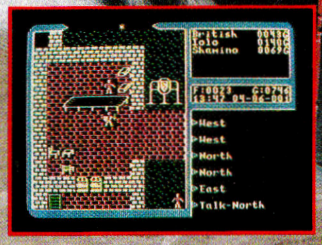
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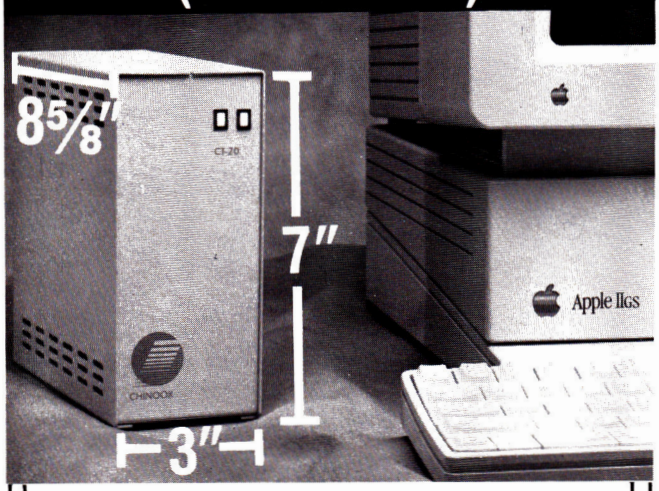
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MACE ON GAMES

Star Saga's roots lie in thousands of hours of face-to-face fantasy role-playing games. Four enthusiasts—Greenberg, Michael Massimilla, Rick Dutton, and Walt Frietag—decided to form a company to figure out how to bottle the fun they had created as game masters and put it on disk to share with the world.

Star Saga begins where all computer entertainment should—with a great story line and a rich universe. The creators then took the bold move of placing nearly all of the plot into 585 pages of finely written text. They divided the material into 888 separate passages spread throughout 14 booklets, which you can read in any order. It's the most nonlinear novel ever written.

When I reviewed Wasteland in September ("Screen Adventures: Graphics vs. Text," p. 97) I noted its modest attempt to involve text as a cheap and annoying way of combatting software piracy. (Never mind what someone with a copy machine can do.) But Beyond the Boundary is a true multiplayer game, and the 14 booklets direct players away from the computer, keeping them busy while you're entering your next moves.

One reason the game is so rich and innovative won't become apparent until you start your second round: The Computer Game Master allocates newly discovered planets dynamically. Although you're supposed to write planet names on the map as you proceed, use a pencil or write on a Post-It note, because planets may change in subsequent games. That means different outcomes, different strategies, and different alliances. Compare that to an Ultima-style game, where the world is predetermined from the moment the disks leave the duplicators.

PHONE PLAY

Apple II owners with a modem and a CompuServe number can sample another multiplayer, role-playing game called **Island of Kesmai**. Put away pen and paper; unlike Star Saga, Kesmai handles all the housekeeping details on screen. John Taylor and Kelton Flynn, co-authors of this adventure, describe it as a "social event," sort of an extension of CompuServe's "CB" or chat facility, with a game added. Kesmai includes areas where players cooperate to defeat a legion of menacing individuals on the island, but are prohibited from attacking each other. All good multiplayer games, in the future, will include the cooperate-or-compete option.

Like the Infocom series, these two games rely entirely on well-written text to evoke vivid mental images; Island of Kesmai also includes a primitive but effective mapping system using special text characters that work with any Apple II. As the written word becomes an increasingly essential element, gamers are realizing that even the most powerful graphics can't equal the interactivity or social camaraderie of these superior multiplayer games. ■

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

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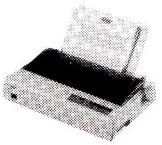
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Cont. from p. 35

You can flip, rotate, move, and cut the stickers, but you can't modify them with ShowOff. You can, however, use the Graphics Editor in The Print Shop GS to modify stickers. You can modify icons pixel by pixel from the icon editor before placing them in the frame. Once brought to the frame for placement, you can manipulate them the same way you do stickers.

ShowOff clip art is better suited to educational applications than business. Included are pictures of the letters in the alphabet, a variety of animals, school activities, buildings, computers, flags, maps, foods, people, sports, and vehicles. If ShowOff proves successful, we can expect to see additional clip-art releases with special theme icons and stickers. In the interim, people who already own The Print Shop GS will be able to import Print Shop clip art as stickers into their ShowOff displays.

ShowOff also lets you load full-screen bit-mapped images created with other paint programs. You can use pictures from other paint programs as backdrops, but you can't alter or move them around on screen. The ShowOff Slide Show disk also contains a scroll picture and maps of the world and the United States for use as additional backgrounds.

Contrary to Broderbund's testimony that "you can build a complete transparency or 'slide' in less than two minutes," producing a graphics visual with just the right composition will take you considerably longer, especially while you're still learning to operate the program. Be prepared to experiment with the frame and icon editors. If you make mistakes, don't hesitate to cut unwanted stickers or icons, or clear the screen entirely to start over.

Once you've assembled and arranged your single-screen graphics images along with any typed-in text messages, you may want to frame the picture with one of ShowOff's many borders. Setting a border around your display lends it an air of closure.

ShowOff can save screens as bit-mapped or object-oriented graphics. It saves as bit-mapped graphics only if you choose "save as bit map" from the File menu. Essentially, this means the slides you create with ShowOff will more closely resemble those created by a paint program than a drawing program. If you're so inclined, you can save individual ShowOff screens as pictures for export to other GS paint programs.

If you're unfamiliar with the differences between paint and drawing programs, it may be helpful to know that ShowOff's frame editor treats stickers and icons as drawing objects consisting of collections of pixels you can move around and place on top of each other without affecting what they touch or cover.

Bit-mapped images, on the other hand, are made up of individual pixels. They tend to be more difficult to edit, resize, and reshape than object-oriented images because changing them involves modifying each pixel. Once bit-mapped images are placed on screen, they become an integral part of the canvas, permanently covering whatever lies beneath them. (ShowOff's icon editor treats images as bit-mapped.)

Broderbund offers a guided tour of ShowOff to familiarize you with all its features. This tutorial is helpful for learning how to compose a presentation frame, as well as setting up a sequence of frames for an electronic slide show.

SHOWTIME

You can configure ShowOff to run through the sequence of slides automatically or manually. There's a timer you can set to control how long each visual remains on screen when the sequence is operating automatically. By selecting "transition" from the Special menu, you'll be able to control the way in which



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slides arrive on screen and which keypress you'll use to initiate the transition. The program cycles through the slide sequence until you stop it. Pressing the escape key at any time during the slide show gets you out of sequence mode and lets you change the show options.

The collection of ShowOff editors is impressive. The icon editor lets you alter existing icons or create new ones from scratch. With the frame editor, you can design and assemble the frames that compose your sequence. You can get to the Sequence editor by clicking on the Sequence option under the Edit menu. ShowOff then displays all frames in your current sequence. Each is numbered and you can modify any of them.

The sequence editor also lets you change the order in which frames are displayed, cut or copy whole frames, or prepare an autorun disk containing all slides for a specific presentation. If you make any changes in the frames or sequence, remember to save your work before proceeding to the show itself. Printing a hardcopy of the slide-show sequence prior to the presentation may come in handy if you opt for a manual display, because then you'll know which frame to jump to for special effects.

The label editor lets you print custom labels for your ShowOff data disks. First, create a frame with a text identifier; it will automatically reduce the label to one-quarter of the screen display (2¾ by 2½ inches). This size is just right for the recessed inset on a 3½-inch floppy disk.

With the release of ShowOff, Broderbund has taken desktop presentation on the GS to new heights. At press time, the company was reportedly also planning to release a Graphics Collection disk for ShowOff containing more than 200 graphics elements—icons, stickers, and backgrounds—relating to geography, news items, symbols, and world events. Now if only Broderbund could do something about removing copy protection. ■

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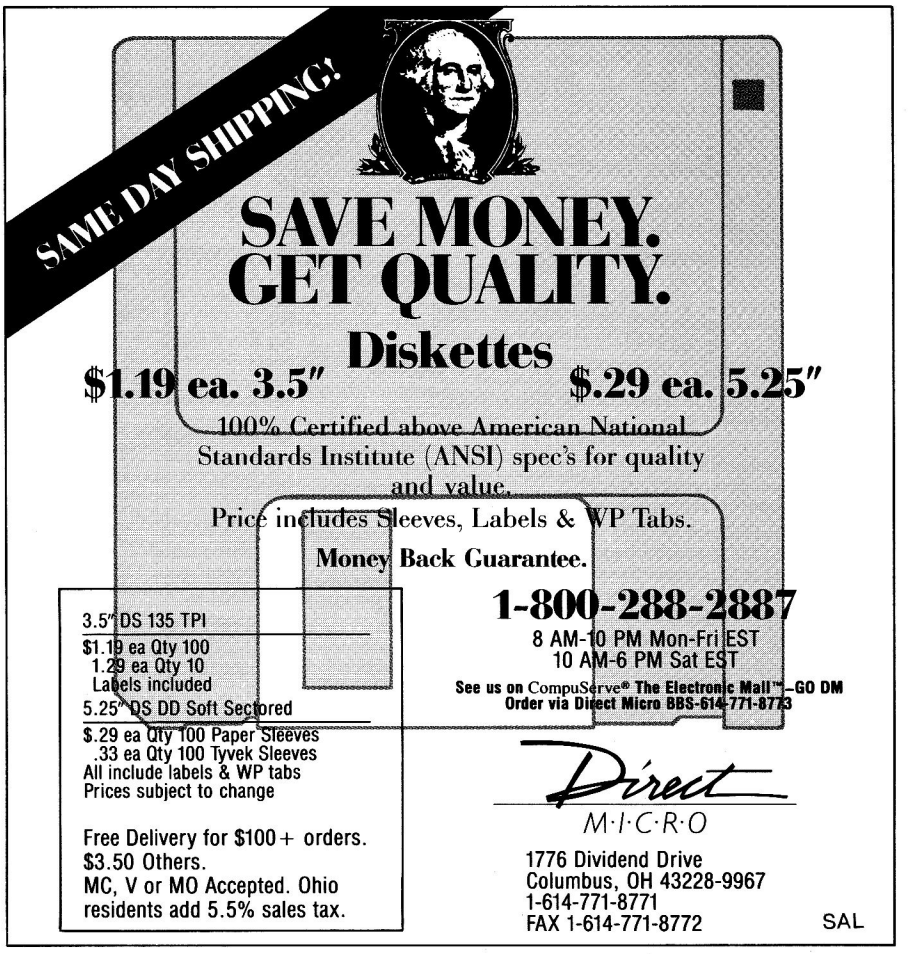
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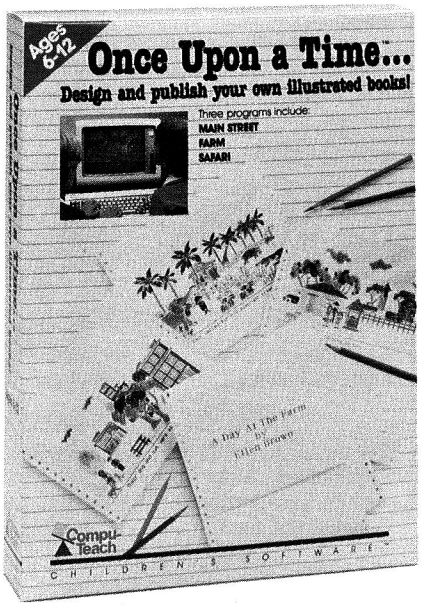


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To position an object, move the robot-like cursor around with the arrow keys and press Return when it's in a good spot. If you want to reposition a picture, select Move from the menu, type the name of the object, and use the arrow keys to put it in a new location. You can also remove objects from the screen with the delete option.

The Safari storybank contains 26 illustrations—including an alligator, boa, elephant, giraffe, and hippo. You can select a waterhole, place some trees around

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it, and have a panther wait in hiding for the animals that come to drink. You could also design a page with a picture of someone standing by a jeep as he or she watches a lion chase a herd of zebras.

If you choose Main Street, you'll find 32 illustrations to help you design the bustling thoroughfare of a small town—post office, mail truck, hydrant, fire truck, bank, trashcan, lamp post, stop sign, church, and more. Park your car at the gas station for a fill-up, or have a couple of boys walk side by side on their way home.

Each story set includes small and large pictures of a boy, a girl, and a tree. The Farm disk also includes small and large images of a fence and a horse. In the Safari set, the elephant and giraffe come in two sizes. Main Street lets you play with small and large pictures of a car and a church.

The dual-size option lets children experiment with perspective for a 3-D effect. To suggest a third dimension, kids will have to place the smaller object in the background and the larger one in the foreground, creating a sense of depth or a feeling of distance.

ONE STEP AT A TIME

Once Upon a Time is menu driven and for the most part quite easy to use. Pressing the spacebar and the plus or minus keys highlights menu options; pressing Return makes a selection. The Escape key takes you back to a previous screen or set of options; the four arrow keys let you position an illustration on screen. Children begin by choosing to design a page or a book. To print a book, however, they must save their pictures on disk.

The program comes on two double-sided 5¼-inch disks. If you have a 3½-inch disk drive, you can return the two disks to Compu-Teach for a single microfloppy. The 3½-inch disk eliminates much of the disk swapping required during program operation. It's not copy-protected, and Compu-Teach suggests you make backups before using it. If you have two drives, copy the program onto four single-sided floppies. Because children will eventually want to save their creations, you should also initialize some blank data disks (DOS 3.3 format).

The instruction manual is quite helpful. It offers a step-by-step tutorial on starting a new picture with examples from the Farm storybank. If you follow along in the manual, you'll learn how to operate all the program's features.

Begin by placing an object on screen. You'll find that Ruby, the robot-like cursor, won't let you position something if there isn't enough room. You also learn ►

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how to adjust Ruby's speed as she travels about the screen.

There are tips for erasing objects, writing a story, saving or clearing a page, working in three dimensions, and printing a picture. If you want to make a book, the manual explains how to organize the pages, insert or delete a new page, add a title page, name the book, and save it to disk. When you're finished, you can sit back and view the entire book on screen. The program "turns the pages" automatically.

After you boot Once Upon a Time and select your storybank, the program asks you to insert a data disk. If you have two drives, you can put your data disk into drive 2, as long as you leave a storybank disk in while it's loading. Accessing the second drive isn't as complicated as it sounds: The program automatically checks for a data disk in drive 2. If there's no storybank or formatted data disk there, the program asks you to insert the data disk into drive 1.

To add text to your illustrated scene, choose "write" from the menu. You'll be able to add up to three lines of text at the bottom of the storybook page. When the picture's complete, save the scene to disk and it's ready to print. Compu-Teach includes a box of colored pencils, because the program generates only black-and-white hardcopy.

My first attempt to print an illustrated page was unsuccessful. I couldn't get any response from an ImageWriter LQ or Epson FX, so I called Compu-Teach. The technician was very helpful; the bug involves the program's printer interface. The company sent a revised version and the problem disappeared. If your copy of Once Upon a Time doesn't print, call Compu-Teach for assistance. Tech support promises that as long your printer-interface card is supported by Beagle Bros' Triple Dump, you can get a customized copy to work with your printer.

The software includes sample files for each of the storybank disks to help children understand how the program works. You can get at these from the master disk to look at them as single pictures or collectively as a book. The manual is somewhat unclear on accessing the sample files—especially if you have only a single drive—so it's best to use the following procedure.

Boot the master disk and select a storybank theme. Follow the directions on screen for inserting that particular picture set. If you have a second disk drive, put the master disk into drive 2. Select the Book option from the menu. When Ruby asks you what you want to do, choose to load an old book. The loading process is pretty automatic if you're using two drives with the master disk in drive 2.

"Once Upon a Time encourages youngsters to develop stories with a cohesive plot and helps them with the words they want to write. Children enjoy composing illustrated scenes and short descriptions."

If you have only one drive, follow the on-screen directions. Remember that the data disk in this case always refers to the master. If all goes well, you should be able to view the book without a hitch. You need to press Return only after the title page. The rest of the book's pages will scroll automatically.

The promotional material for Once Upon a Time indicates that the program

requires 128K to run. That's a misprint: Technical support at Compu-Teach advises that you need only 64K. If you're not interested in printing hardcopy, the program will operate on a computer with as little as 48K.

THE PLOT THICKENS

Once Upon a Time encourages youngsters to develop stories with a cohesive plot and helps them with the words they want to write. Children will enjoy composing illustrated scenes and writing short descriptive phrases.

While the program is designed for children aged 6–12, it's unlikely that 9- to 12-year-olds will find it challenging enough to keep their interest. The Farm, Safari, and Main Street themes may end up restricting rather than fostering creative expression in older kids. It's probably more appropriate for 6- to 9-year-olds.

Younger children who are just beginning to experiment with writing have limited vocabularies; there's often a gap between the words they can speak and the words they can write. The limited space available for text will be an advantage for those inexperienced authors who may be reluctant to try their hands at writing long paragraphs, yet enjoy composing stories and illustrations.■

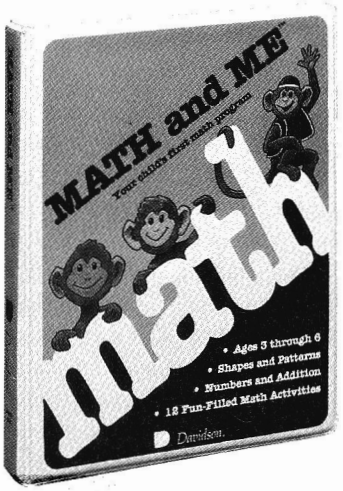
Carol S. Holzberg, Ph.D.
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Early Math

MATH AND ME

Davidson & Associates, Inc., 3135 Kashiwa Street, Torrance, CA 90505, (213) 534-4070
Early-education math program; 128K Apple IIe, IIc, IIGS, extended 80-column card
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Rating: ■■■■

You can still sleep late Saturdays—even as the parent of a 4-year-old. Math and Me



and your Apple II offer the perfect alternative to those early-morning cartoons you've decided your child shouldn't watch.

Math and Me introduces children to numbers and presents several basic mathematical concepts in an entertaining, interesting way. Davidson suggests that this program is appropriate for kids aged 3–6, but any home, preschool, or kindergarten classroom should find it a popular addition.

The true beauty of Math and Me is its ease of use. Children can play on their own after just a little help at first, even switching from game to game or area to area with little instruction. Selection screens have colorful icons representing areas and games. Kids can use either the keyboard or a mouse—whichever they feel more comfortable with. There are also colorful keyboard stickers if they need additional help.

The appeal for parents, apart from ease of use, is the range and variety of activities. The program covers four areas—shapes, numbers, patterns, and addition. Three different games within each subject area provide a total of 12 selections, making this a good buy. Nonrepeating sequences let the same game maintain a fresh look each time a child selects it. Children enjoy the anticipation of what might be coming up on screen—snowmen or chicks? What color monkey will appear to congratulate them on their correct answers?

In all the games, Math and Me takes

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advantage of the computer's unlimited patience. Children can take as long as they want to determine whether the next item in the sequence is a candy cane or a clock. If they want to count every chick, that's just fine (except for the final game in the Addition section).

The objects are easily recognizable—apples look like apples, and even the youngest player can easily identify the cupcake with a candle. Simple music adds liveliness—I like the theme from *Rocky* in the weight-lifting monkey sequences.

If a child doesn't answer correctly on the first try, a lighted strip at the top of the screen appears with "try again." If the second response is incorrect, the answer appears and the game continues. Younger children quickly learn that the strip is "another chance."

SHAPES

In Shapes, the first game introduces the circle, triangle, square, and rectangle. The rectangle is the most difficult because it's presented both vertically and horizontally, a fact parents might like to point out to their kids. As the monkeys pull the ends of the square to form a rectangle, the program presents simply yet clearly the concept that both shapes have four sides.

Game 2 continues with colorful balloons—each carrying one of the four shapes. If the correct response is highlighted, the balloon rises and the mischievous monkey waves. The last of the shape games has the child matching a shape on the weight-lifting monkey's barbell, with another of the same shape in three different sizes, to present same-shape/different-size concepts.

NUMBERS

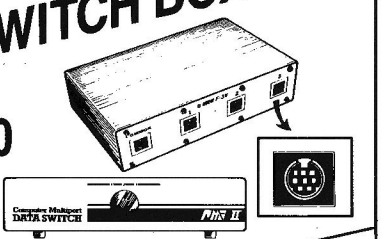
The Numbers section is brought to you by the numbers 1–9. Each number is represented by that number of objects, the number in word form, and the numeral. Although the sequence remains in the 1–9 order, the objects displayed change with each play. It's too bad this section doesn't present numbers randomly as it does objects.

Game 2 repeats the familiar monkey-in-the-ballon concept. Here the child selects the correct numeral. The third module is a guessing game that introduces the concept of inequality. This one was the least popular with the younger children I watched, who seemed to prefer a guaranteed right answer, not a series of decisions.

One opportunity Davidson missed is practice in recognizing greater-than (>) and less-than (<) signs. The program does well, however, introducing plus and equal signs in the Addition area.

Math and Me follows the philosophy of introducing ideas to children casually, before they're actually expected to know

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them. Spelling out numbers as well as presenting numerals follows this idea in a nonthreatening way. The child sees the *three* presented alongside the numeral 3 and connects the two without any teaching.

PATTERNS

The first game in Patterns was a favorite with the children I observed. Selecting the missing object in a pattern of alternating items, youngsters reacted by repeating the names of the objects out loud.

Using a xylophone as a number line, level 2 presents the concept of numbers coming before, after, or between other numbers. A sequence of three numbers with one missing is written above the xylophone; the software presents four possible correct answers to choose from. Picking the right answer plays musical notes as the pattern is highlighted, offering both visual and auditory reinforcement.

Game 3 combines both previous games. There's a pattern with a missing item, but this time it's a sequence of four numbers instead of objects, and the order can be either up or down the number line. That's quite a jump from level 2 and another missed opportunity—this time in introducing a visual number line.

ADDITION

The final area, Addition, starts with objects presented in a horizontal line—five cups with a plus sign and another two followed by an equal sign. Children select the answer from four possible choices at the bottom of the screen. When the correct answer is highlighted, the objects change to numerals and the monkey again waves congratulations. Game 2 presents numerals in the weight-lifting monkey format. Again, a number line would have been helpful.

The leap to game 3 introduces the element of time. In this final game, kids must select an answer before the balloon reaches the top of the screen. The format is familiar to the child by this time, and the time factor is introduced gently. If the answer isn't highlighted in time, the balloons stop and the correct answer appears.

As a final treat, when kids are done with Math and Me, they can print a "certificate of excellence" to reward them for completing an activity. Six workbooks at preschool, kindergarten, and first-grade levels are available from Davidson for supplementary activities either at home or school.

Math and Me is a "must" addition to the software library of any preschool or kindergarten and a great plus for any home with young children.■

Peg Brown
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By Bill Basham inCider Editors' Choice

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II cue #70

Top and Bottom Margins can be changed at any point in an AppleWorks word processor document, but because of a bug in the Top Margin command, the only place you can embed one without messed up pages is at the top of the first page or immediately after a New Page command. Use open-apple-<Z>oom and open-apple-<K>alculate to see *where* commands are in your document. For more, see 'Top/bottom margin migraines' in the September 88 ***Open-Apple***, p4.60.

From our fan mail:

I 'got into computers' with the purchase of my Apple IIgs in December 1986. Totally computer ignorant before, I attribute 70 per cent of my current knowledge and expertise to having purchased and read (read 'absorbed') every issue of ***Open-Apple***., from Vol. 1 No. 0 to date. If it didn't give the straight scoop, directly and clearly, it led me to the next best bank, the original source!

Keith Whaley
Los Angeles, Calif.

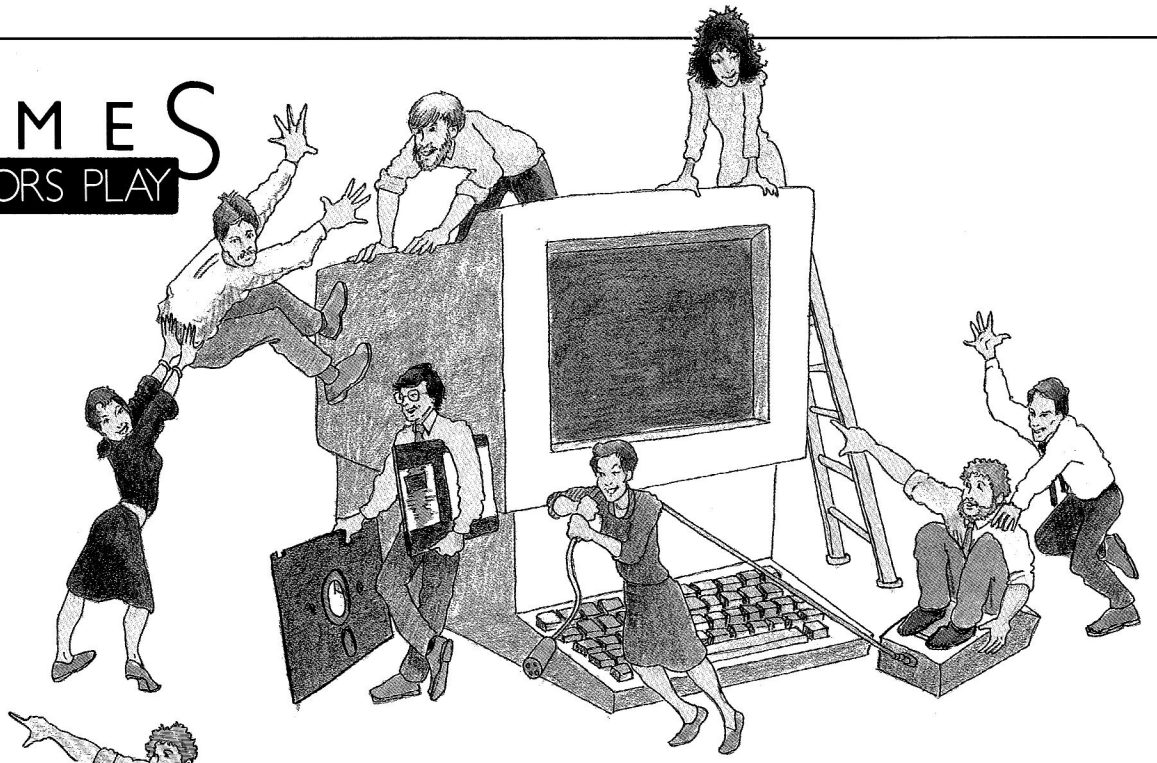
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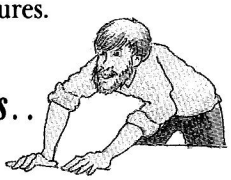
The whine of the klaxon rings across the bridge as your submarine dives beneath the ocean's surface—but are you an American sub commander or are you in charge of a German U-boat? Sub Battle Simulator is the first to give you both options. You can also choose to make single patrols or play out the entire war.

Sub Battle Simulator is the latest release in Epyx's Masters Collection (which also includes L.A. Crackdown and will someday include a Tank Battle Simulator). Between the realistic graphics and sound effects (after all, this is a GS game) and the historical accuracy, Sub Battle Simulator is a very detailed simulation.

You can view a battle scene from binoculars, periscope, radar or sonar screens, or maps. There's also a side-view screen, which doesn't necessarily add to the realism, but is neat to watch. You see a profile of your sub and where it is in relation to the surface and the bottom, plus any ships overhead and any depth charges they may have dropped.

Sub Battle Simulator earns especially high marks for its host of realistic features. It throws a wide variety of enemy craft at you, including several different airplanes. Naturally, you'll have a range of defenses to ward them off—torpedoes, deck guns, and anti-aircraft guns. You can also transfer a torpedo from the aft to the forward torpedo room, a maneuver that was often necessary in real battle when the supply of torpedos in one room ran out.

Whether you're an American captain in the Pacific or a German commander in the Atlantic, the characteristics of your ship are accurately represented. Sub Battle Simulator is a seaworthy addition to the genre of submarine adventures.



Paul Statt plays..

A Question of Scruples: The Computer Edition, *Leisure Genius/Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (415) 571-7171, $39.95*

"You're a journalist. The PR rep for a major software publisher—one of your favorite people in the business—gives you a free copy of her latest game. It's bad. It's almost unplayable. Do you give it a good review?"

Is this a trick question? It's the kind you have to answer when you play A Question of Scruples, the computer adaptation of last year's yuppiest board game. I never played the board game, but I'm sure it's more fun than this.

It works this way: You answer a question and keep your answer secret. The rest of the players then guess what you decided—the choices are "yes," "no," and "depends." The fun begins when you learn what the others really think of you.

It's a simple game. You could probably play with pencils, pads of paper, and some friends whose imaginations would embarrass Miss Manners. If you're not that creative, I guess the board game might help, but I can't imagine any reason to play the computer version.

Scruples can also analyze your personality, in case you can't find any friends to play, something the board game can't do. But the computer edition's unnecessarily complex setup confused me and I never did com-

prehend its clumsy interface. None of my friends did either.

By the way, the answer to that question above is an emphatic "No!" I hope you guessed it.



Ellen Otis plays...

Ticket to Hollywood, *Blue Lion Software, 90 Sherman Street, Cambridge, MA 02140, (617) 876-2500, $39.95*

Hooray for Hollywood! Dan Muse keeps shooting free throws and Lafe Low keeps shooting at enemy boats and planes, but I'm going to the movies. Blue Lion's latest entry in its Ticket to... series encompasses 80 years of Tinseltown tales and movie memories, from Bogie and Bacall to Dunaway and DeNiro.

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Along the way, either the "Movie Madame" or the director (once you find him or her) asks you questions about the silver screen. In how many movies did Myrna Loy and William Powell appear together? What about Spencer Tracy and Katherine Hepburn? What was the original title of *A Streetcar Named Desire?*" Ready for the challenge? Go ahead, make my day.

It may seem at times that you're stumbling over your leads (or was that a clue?), but if you like movie trivia, well frankly, my dear, you won't give a damn. In this case, playing the game is more fun than whether you win or lose.

Here's one game for which I wish I could have done the fact checking. (Eight hours with Gable—that's all I ask.) Since the folks at Blue Lion didn't need me, I'll just have to boot up Ticket to Hollywood and play it again, sweetheart.■

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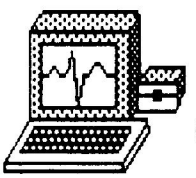
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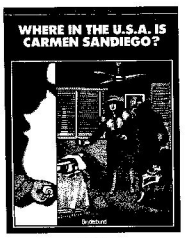
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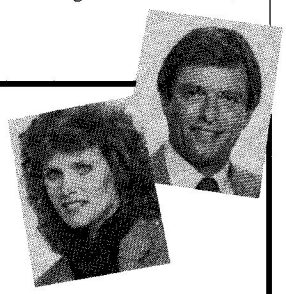
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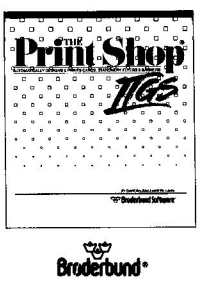
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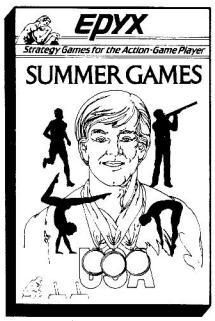
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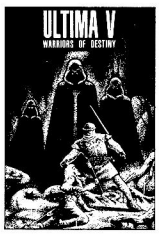
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Drugs, Alcohol, and Tobacco

by Cynthia E. Field, Ph.D.

Yuppies are out; *skippies* are in. While this new acronym (for School Kids with Income and Purchasing Power) hasn't yet attracted derogatory connotations, it should give parents pause: Increasing numbers of children are relinquishing their discretionary cash to student drug dealers.

If your kids are typical, they probably love using the computer to play and to learn. With the right software, there's no reason why an Apple II can't help youngsters sidestep the criminals who'd cheat them out of their health, happiness, and future.

ADVENTURES AND SIMULATIONS

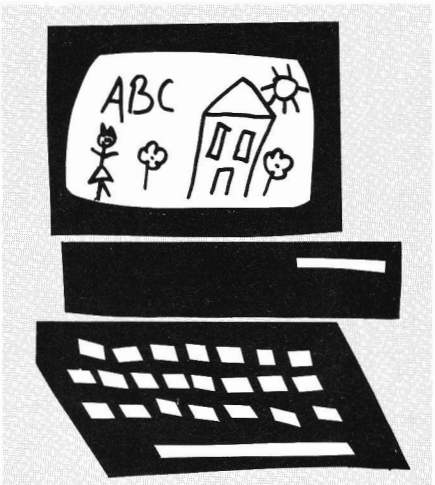
Drug-awareness software can be surprisingly entertaining. Some programs help shore up kids' self-esteem and arm them with strategies to save face when they say no. All the programs are eye-openers—for parents and children alike.

Take **Drug Alert!** from Mindscape, for instance. An interactive adventure game, this modern-day myth doesn't call for rescuing a damsel trapped in a medieval castle. Instead, you have to free your drug-addict friend, Pat, from a sleazy hotel.

Pat's hooked, all right. And so are the other "residents" who trip through this run-down hole. The elevator operators are constantly "going up," even when the elevators aren't.

As the only sober and otherwise sane person there, your job is to help Pat escape by finding your way up four floors, from the hotel's sub-sub-sub-basement to the lobby, all while you're traipsing through mazes of disgusting rooms.

You have to locate two drug stashes on each floor and incinerate the poison. If you find the "other" stash first, the elevator operator gets mad and hides *his* more carefully.



It's hip to be square—a lesson Apple II software conveys dramatically.

Jan Muller

The program includes a database of revealing facts about dozens of drugs, from common ones like marijuana to less widely known substances such as Preludin or Tuinal. You'll need this on-line handbook to help answer questions popped by the hallucinating junkies who block certain passageways. Beware, conniving addicts bent on defeating you may have ripped out the handbook's pages. Ultimately, the database can help you identify the drug to which Pat's addicted. (Pat's drug of choice changes randomly with each game.)

If you make it to the lobby without discovering Pat's addiction, the hotel desk manager sends you back to the basement. If you identify the drug successfully, not only do you both go free, but you learn the secret password that lets you access the complete Drug Alert! Handbook at any time. You can print the 65-page document in less than 15 minutes on a dot-matrix model such as the ImageWriter II.

Because it may take you more than one session to free Pat, Drug Alert! keeps track of where you left off. If family members (or friends or classmates) are using the program, it can place "bookmarks" for up to 40 of them.

CONSCIOUSNESS RAISING

Marshware devotes four programs to drug, alcohol, and tobacco use and abuse. **Drugs: Their Effects on You** is a drug-abuse primer. Besides describing the physical and psychological aspects of drug use and abuse, the program teaches kids about drug categories: stimulants, depressants, hallucinogens, and narcotics. Lessons on Peer Pressure, Taking Risks, and Saying No help children size up the true nature of potentially damaging encounters with drug-dealing children or teens.

A follow-up program, **Drugs: Who's in Control?**, involves children in role-playing and probably works best in school or youth-group settings. Up to nine groups of six children each can play. Selected children in each group are friends who try to keep the others—the followers—out of trouble by suggesting appropriate reactions to situations the program presents.

There's plenty of room for discussion about each scenario and the realm of possible choices. Each simulation can last up to four rounds—unless making dangerous choices results in "serious injury or death" before the end of the game. You can print scenarios, choices, and outcomes for further discussion or later reference.

ALCOHOL AND NICOTINE

Two simulations from Marshware, **Al-** ►

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Product Information

Alcohol: The Friendly Drug
Orange Juice Software Systems
338 South Arch Avenue
New Richmond, WI 54017
(715) 246-3588
$45
grades 6–8
requires 48K

Reader Service Number 300

Alcohol: The Party, $52.45
Drugs: Who's in Control?, $52.45
Drugs: Their Effects on You, $52.45
Drug Resistive Series (both Drugs programs), $89
Tobacco: To Smoke or not to Smoke, $52.45
Marshware
P.O. Box 8082
Shawnee Mission, KS 66208
(800) 821-3303
(816) 523-1059 (collect AK and MO)
grades 6–8
requires 48K

Reader Service Number 301

Drinking and Not Drinking
Introduction to Psychoactive Drugs
Keep Off the Grass
Six Classes of Psychoactive Drugs
Substance Abuse Data Base
Kinko's Academic Courseware Exchange
255 West Stanley Ave.
Ventura, CA 93002-8000
(800) 235-6919
(800) 292-6640 (CA)
(805) 652-4000
$30 each
grades K–adult
requires 64K

Reader Service Number 302

Drug Alert!
Mindscape
3444 Dundee Road
Northbrook, IL 60062
(312) 480-7667
$39.95
lab pack (5 disks) $79.90
grades 5–9
requires 48K

Reader Service Number 303

The Great Knowledge Race: Substance Abuse
Focus Media, Inc.
839 Stewart Avenue
P.O. Box 865
Garden City, NY 11530
(800) 645-8989
(516) 794-8900
$45
grades 4–8

Reader Service Number 304

It's Wise to Say "No" to Drugs I
grades 2–4
It's Wise to Say "No" to Drugs II
grades 4–6
It's Wise to Say "No" to Alcohol I
grades 2–4
It's Wise to Say "No" to Alcohol II
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Right On Programs
755 New York Ave.
Huntington, NY 11743
(516) 424-7777
$35 each
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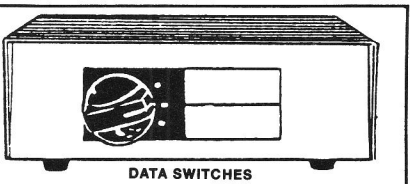
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cohol: The Party and **Tobacco: To Smoke or Not to Smoke**, don't require a group, though up to six people can play together. Each program includes a fact-filled, interactive tutorial as well as a simulation.

In Alcohol, you attend a party where alcoholic and nonalcoholic beverages (and pizza, of course!) are available. As each hour passes, you decide what kind of beverage you'll drink and the amount. A line chart shows your blood alcohol concentration (BAC) rising or falling with each choice. The computer makes decisions for your host or hostess, whose BAC is also charted on screen.

During the simulation you play a space-aliens-type game. As your BAC increases, you become increasingly less coordinated and fail trying to shoot down spaceships. To simulate intoxication, the program fixes the game so that your performance is as poor as if you'd actually been drinking the amounts you selected. It's enlightening, and scary, to play the game sober and realize how clumsy you'd be after downing a few beers.

In the Tobacco simulation, you observe a computer friend during his lifetime (ages 15–70) and counsel him about smoking. As various scenarios crop up, you suggest your friend try to maintain his level of smoking, try to cut down on cigarettes, or try to quit altogether. Sometimes the friend listens; sometimes he doesn't. The program doesn't soft-pedal the painful results of short- or long-term nicotine addiction.

ALCOHOL AWARENESS

Alcohol: The Friendly Drug takes a comprehensive, no-nonsense approach to prudent and imprudent drinking practices. The program consists of five modules: Introduction to Alcohol, Alcohol: Fact vs. Myth, The Right and Wrong Ways to Drink, The Stages of Intoxication, and Memo: A Study Aid and Review Game.

This program, like others described so far, underscores the young person's right to make his or her own decisions. Alcohol: The Friendly Drug presents startling facts about the effects of alcohol—on individuals *and* on society. The program uses a graphics-based, interactive-tutorial approach to convey its message.

Right On Programs offers a series of packages to help elementary-school-aged children decide for themselves not to take drugs or drink alcoholic beverages. **It's Wise to Say "No" to Drugs** and **It's Wise to Say "No" to Alcohol** both feature graphics-enhanced, interactive situations where the child picks the most desirable course of action. The program presents the consequences of each choice.

The software is available in two versions: one for younger children, one for older ones. These introductory programs come with reproducible activity sheets suitable for family interactions or for classroom discussions.

Focus Media offers a *Trivial Pursuit*-like computer game designed for students in fourth through eighth grades. You can play **The Great Knowledge Race: Sub-**

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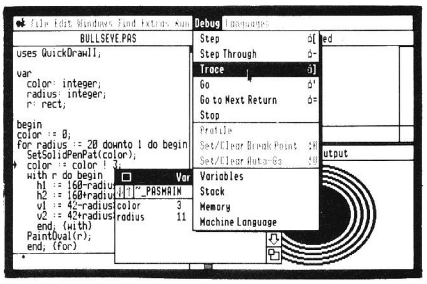
The **Source Level Debugger** lets you step or trace through a program, execute subroutines in real time, and set break points. While this happens, a window full of variables and values is continuously updated.

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stance Abuse alone or with as many as three opponents. To win you'll have to be the first to answer one question in each of five categories: Smoking, Drugs, Alcohol, Foods, and Pot Luck (no pun intended here).

Spinning the on-screen graphics die determines how far your game piece moves. Select the direction and land on a "go-ahead diamond" (for a free spin) or a harmful-substance category. Landing on a hollow green rectangle, for example, elicits a question about smoking; an orange cross, foods; a solid purple square, alcohol. Answer the question correctly and chalk up one category.

You can customize the game by adding a lose-a-turn "X" to one side of the die. To create an even greater challenge select a shorter time limit (as little as ten seconds) for answering questions.

The Great Knowledge Race is available in a variety of curriculum areas, ranging from American history to chemistry to math-word problems. Unfortunately, there's no utility for creating your own information files, but like many children's favorites, this game's appealing despite its simple design.

SUBSTANCE-ABUSE SERIES

Although I was unable to secure copies in time for this column's deadline, you might investigate a series of five programs that Barbara Thomas at Substance Abuse Education, Inc., has created. Kinko's Academic Courseware Exchange is marketing them: **Drinking and Not Drinking**, **Keep Off the Grass**, **Introduction to Psychoactive Drugs**, **Six Classes of Psychoactive Drugs**, and **Substance Abuse Data Base**.

The first four programs feature graphics, drill-and-practice sessions, tutorials, and games. The last program, Substance Abuse Data Base, is a modifiable compendium of "information on dozens of substance-abuse organizations."

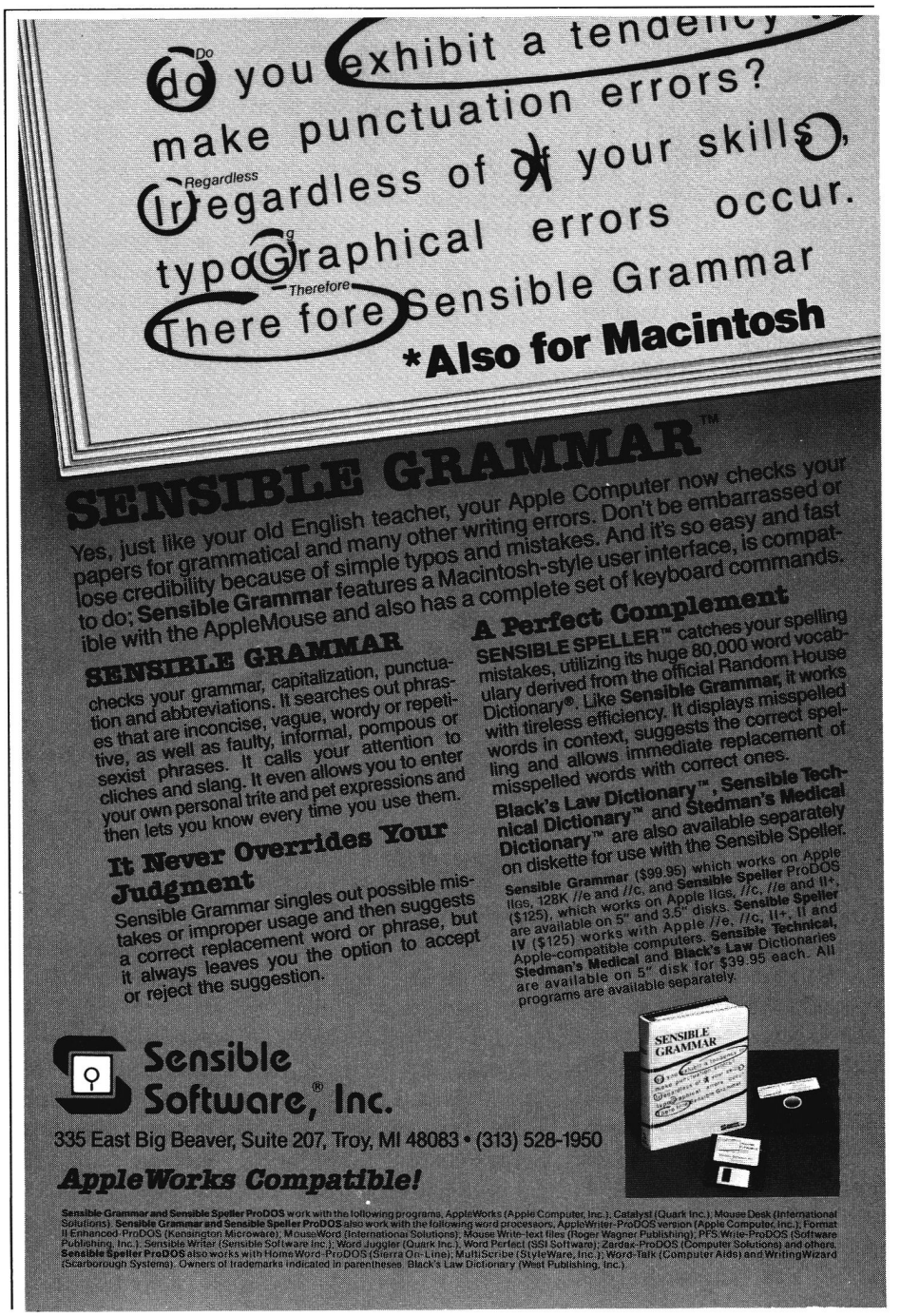
Our nationwide "Just Say No" campaign is reaching millions of kids. Drug-abuse education programs in schools, often enhanced by presentations from local law-enforcement officers, are another effective approach. Your own good example provides kids with responsible role models.

Nevertheless, temptations lurk at school, at the playground, and at parties. Educational, entertaining, and enlightening programs represent just one more tactic for helping our kids stay away from drugs.

UNTIL NEXT TIME

Our next Field Trip helps kids prepare for their midyear exams and churn out their term papers on time.■

Cynthia E. Field is a free-lance journalist specializing in computer-related topics. She is a contributing editor and the author of Press Room, inCider's *column on desktop publishing. Write to her at 60 Border Drive, Wakefield, RI 02879.*



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NEW PRODUCTS

edited by Pat Payne

Software

MORE AND MORE

Berkeley Softworks has added geoPublish, geoCalc, and geoFile to its **GEOS** (Graphic Environment Operating System) series of programs. This mouse-driven operating system features a Mac-like interface that operates on eight-bit Apple IIs. All GEOS programs are designed to integrate with each other.

The **desktop publisher**, geoPublish, is a "point and click" program that lets you import text and graphics from other programs, including AppleWorks, The Print Shop, and The Newsroom. You can design layouts that span several columns and pages, create a library of layouts up to 32 pages long, or use any of the 21 predefined layouts. You can also crop, scale, center, stretch, and smooth graphics as well as make them opaque or transparent.

GeoCalc is a **graphics-based spreadsheet**, containing 256 rows and 112 columns, designed to be simple to learn and use. It includes 31 math, financial, and statistical functions, and features intelligent recalculation. GeoCalc can also print your spreadsheets in condensed and sideways formats.

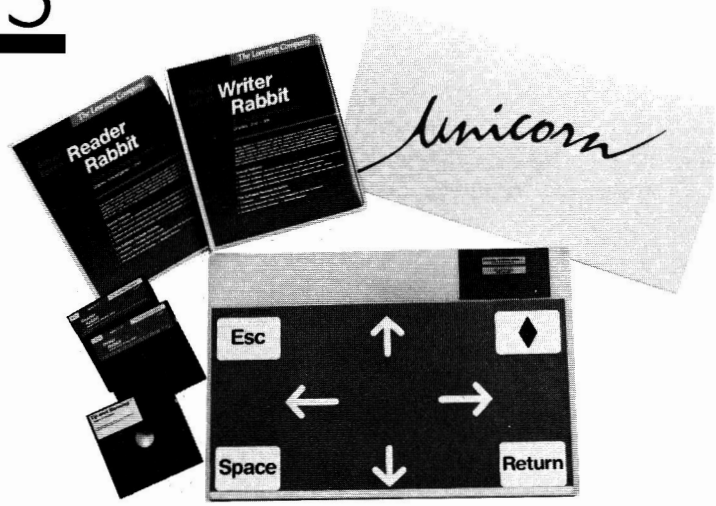
Drowning in facts? Check out geoFile, a WYSIWYG (what you see is what you get) **database-management program**. You can export files from geoFile to geoCalc to perform calculations, or to geoWrite to create presentations. GeoCalc can hold 200 fields in each record and 65,000 records in each file. You can use up to 64 variables at a time to search your files.

Prices for the latest GEOS programs, though still unannounced, are reported to be less than $100 each. For more information, contact Berkeley Softworks at 2150 Shattuck Avenue, Berkeley, CA 94704, (415) 644-0883, or circle Reader Service number 350 for more information.

MORE TIME...OUT

TimeOut SpreadTools and MacroTools II are the latest additions to Beagle Bros' series of **AppleWorks enhancements**. TimeOut SpreadTools, available for $59.95, gives your spreadsheet several new options: Cellink lets you import cell values from other files; the Error Analyzer checks for mistakes; and Block Copy copies larger chunks of information.

TimeOut MacroTools II lets you save multiple variable sets on your desktop and tie two database files together. Priced at $25, it features a large number of predefined macros, as well as enhancements to help you write your own macros. Contact Beagle Bros, Inc., at 6215 Ferris Square, Suite 100, San Diego, CA 92121, (619) 452-5500, or circle Reader Service number 351 for more information.



The Unicorn Expanded Keyboard provides large, easy-to-use areas to help children and disabled learners.

LOGO AT HOME

Kids can create their own programs with LogoWriter home edition. Designed to be a **problem-solving tool**, LogoWriter includes a word processor and an easy-to-use programming language. The package features a book containing step-by-step activities and a reference booklet. LogoWriter home edition requires 128K and is available for $99 from Logo Computer Systems Inc., 1000 Roche Boulevard, 9th Floor, Vaudreuil, Quebec, Canada J7V 6B3, (504) 455-5636, (800) 321-LOGO. For more information, circle Reader Service number 352.

SCIENTIFIC STUDENTS

MECC's new **Science Inquiry Collection** features four separate software packages—Mystery Objects, Mystery Matter, Miner's Cave, and Wood Car Rally. These packages cover properties of objects and matter, simple machines, and motion, respectively. All encourage students to learn by problem solving, rather than memorization.

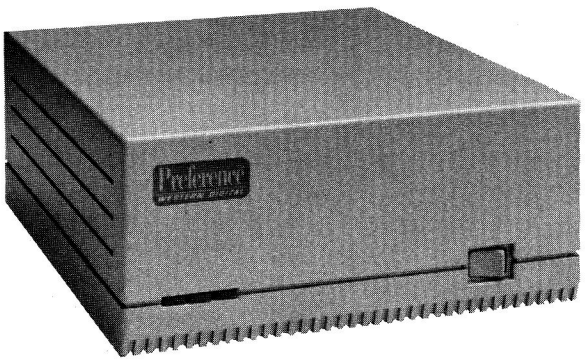
The Science Inquiry Collection programs are priced at $59 each. For more information, contact MECC at 3490 Lexington Avenue North, Saint Paul, MN 55126-8097, (612) 481-3500, or circle Reader Service number 353.

Hardware

HELPING HAND

Children and disabled users having difficulty with the **Apple keyboard** should take a look at the Unicorn Expanded Keyboard. Its large, touch-sensitive surface consists of 128 keys which you can customize for specific needs. These include grouping individual keys together to create larger, easier-to-use areas, or customizing keys, which you'll mark with paper overlays, to match specific programs. You can also use the keyboard in conjunction with a speech synthesizer.

The Expanded Keyboard requires Adaptive Peripherals' (Seattle, WA, 206-633-2610) Adaptive Firmware Card ($400—$450). It's available at $325 from Unicorn Engineering at 6201 Harwood Avenue,



The Preference Hard Drive AP gives IIGS owners another storage option.

Oakland, CA 94618, (415) 428-1626. Circle Reader Service number 354 for more information.

GET INTO IT

Inner Drive from Applied Ingenuity is a series of Apple II **internal hard drives** that'll be available in three sizes—20, 30, and 50 megabytes. Retailing for $450, $550, and $650, depending on size, the drives are ProDOS formatted, and require only plug-in installation. For more information, contact Applied Ingenuity at 14922M Ramona Boulevard, Baldwin Park, CA 91706, (818) 960-1485, (800) 356-0811, or circle Reader Service number 355.

LOWER-COST LASER

If you need the print quality of a **PostScript-compatible laser printer**, but can't afford Apple's LaserWriter, consider Qume's CrystalPrint Publisher. With 3 megabytes of RAM and a new processing chip, the Publisher can produce graphics at a print resolution of 300-by-300 dots per inch. You can connect the printer to your IIGS with an AppleTalk interface. The publisher sells for $4499 from Qume, 500 Yosemite Drive, Milpitas, CA 95035, (408) 942-4000. For more information, circle Reader Service number 356.

COLOR ME BEAUTIFUL

The MagnaByte Model 5020 is a **color LCD projection** system designed to let you display "real time" graphics and text for your audience. The $1099 Model 5020 plugs directly into the video output port, via the cable included in the package, so no additional interface cards are necessary. For more information, contact Telex Communications at 9600 Aldrich Avenue South, Minneapolis, MN 55420, (612) 884-4051, (800) 828-6107, or circle Reader Service number 357.



Qume's CrystalPrint Publisher provides an alternative to Apple's LaserWriter.

FIRST CHOICE

Western Digital's new line of platinum-colored **hard drives** gives IIGS owners another storage option. The Preference Hard Disk AP, available in 20- and 40-megabyte capacities, is packaged with its own controller card and plugs directly into the SCSI interface. (It'll also work with your IIe if you've installed a SCSI adapter card.) The disk has a very small "footprint"—only 3 inches high and 8 inches deep. The 20-megabyte Preference Hard Disk AP sells for $895; the 40-megabyte version is $1195. For more information, contact Western Digital Corporation, 2445 McCabe Way, Irvine, CA 92714, (714) 863-0102, or circle Reader Service number 358.

Resources

BETTER AND BETTER

Teachers and parents alike may find some software suggestions in *Only the Best: The Discriminating Software Guide for Preschool–Grade 12.* The guide is published yearly, with semi-annual updates and an Alert report on new outstanding **educational software.** The guide's 1989 version is available for $24.95 prepaid from Education News Service, P.O. Box 1789, Carmichael, CA 95609, (916) 483-6159. For more information, circle Reader Service number 359.

10-4

GE Information Services has formed a **CB Club** for GEnie's CB Simulator users. Members of the CB Club receive unlimited non-prime time use of CB Simulator for a flat $50 monthly fee. Club members can also use five private CB channels, obtain access to a private "bantering board," and receive membership in the GE Executive Club.

You must be a GEnie subscriber for 60 days before joining the CB Club. (You can sign up via GEnie.) Contact GE Information Services, at 401 North Washington Street, Rockville, MD 20850, (301) 340-4000, (800) 638-9636, or circle Reader Service number 360 for more information.

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

HINTS/TECHNIQUES

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

AppleWorks Program Editor

by Chris Harper

For years, beginning BASIC programmers have asked for an easier way to write and edit their code. Here's a simple solution; you'll need a word processor that reads "foreign" text files, a utility program that converts DOS 3.3 to ProDOS and vice versa, and a blank disk.

First, add the following lines to the end of your program:

```
60000 D$=CHR$(4)
60010 PRINT D$;"OPEN FILE"
60020 PRINT D$;"WRITE FILE"
60030 LIST
60040 PRINT D$;"CLOSE"
```

Now enter RUN 60000. You should now have a DOS 3.3 text file named FILE on your disk.

Run your converter program. If you're using Apple Computer's System Utilities disk, select option 6 (format a disk) from the menu, then choose your drive. Next pick option 1 to format a disk with ProDOS. Enter a name and format your blank disk.

Press Escape to go back to the main menu and select option 1 (copy files). Now copy your new text file from the first disk to the ProDOS disk you just created.

Let's use the AppleWorks word processor in this example. To load a text file into AppleWorks, choose option 1 (add files to the desktop) from the main menu. Next press 3 (word processor) from the Add Files menu, then 2 (from a text ASCII file) from the Word Processor menu. Now enter a name for the file; you should see your program intact on the word-processor screen. Press Open apple-P (print), then 3 (to disk), to save your text file to disk.

Now load your System Utilities again. Load ProDOS, then EXIT it. Type NEW, then EXEC your file. This new file should be a BASIC program you can run; you should now save it and load it as one.■

Write to Chris Harper at ProSoft, 7504 Trowbridge Drive, Brown Summit, NC 27214.

Program listing. *Base Converter.*

```
1  REM  NUMBER BASE CONVERTER  [1711]
2  REM  BY GARY GARNER  [1185]
3  REM  COPYRIGHT 1988, INCIDER  [1746]
10  TEXT : HOME : PRINT "DECIMAL TO BASE-2 THRU 16 CON
    VERTER"  [2986]
15  PRINT : PRINT "PRESS ANY KEY OR <ESC> TO QUIT"  [2555]
30  LET H = 36: HTAB H: GET V$: IF V$ =  CHR$ (27) THEN
    HOME : END  [2746]
35  HOME : ONERR  GOTO 160  [731]
40  INPUT "ENTER DECIMAL NUMBER  ";D  [1829]
50  LET D1$ =  STR$ (D)  [958]
60  LET D1 =  LEN (D1$): IF D1 > 9 THEN  HOME : GOTO 4
    0  [2304]
65  IF D > 9999999991 THEN  HOME : GOTO 40  [1751]
70  INPUT "ENTER NEW BASE  ";N  [1434]
80  LET N =  INT (N): IF N < 2 OR N > 16 THEN 70  [2367]
90  LET X = D - ( INT (D / N) * N)  [1827]
100  LET Z =  INT (D / N)  [1209]
110  IF X > 9 THEN  VTAB 7: HTAB H: PRINT  CHR$ (X + 5
    5): LET D = Z: GOTO 130  [3249]
120  VTAB 7: HTAB H: PRINT X: LET D = Z  [1543]
130  IF Z < N AND Z > 9 THEN  VTAB 7: HTAB (H - 1): PRINT
     CHR$ (Z + 55): GOTO 15  [3546]
140  IF Z = 0 THEN 15: IF Z < N THEN  VTAB 7: HTAB (H -
    1): PRINT Z: GOTO 15  [3254]
150 H = H - 1: GOTO 90  [1086]
160  PRINT : PRINT "- - - PLEASE TRY AGAIN - - -": FOR
    Q = 1 TO 2500: NEXT Q: HOME : GOTO 40  [3957]
```

Base Converter

by Gary Garner

Base Converter (see the accompanying **Program listing**) is a small program that'll help you and your children survive the "new" Applesoft math. The listing converts any decimal number to a new base. For example, you can convert base 10 to base 2–base 16.

When prompted after running the program, just type in any decimal number 1–999999991, and specify the base for conversion.■

Write to Gary Garner at 2307 Reservoir Road, Clarkston, WA 99403.

Got a hint of your own? inCider *would like to see it. If we can use it in Hints/Techniques, we'll buy it from you. Send your tip to* inCider, *Elm Street, Peterborough, NH 03458.*

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MONTHLY	12	$27.97

4. COMPLETE MAILING ADDRESS OF KNOWN OFFICE OF PUBLICATION *(Street, City, County, State and ZIP Code) (Not printers)*

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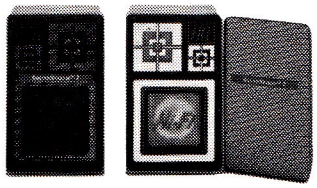
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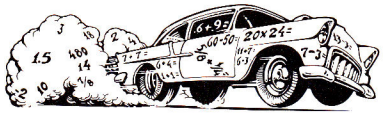
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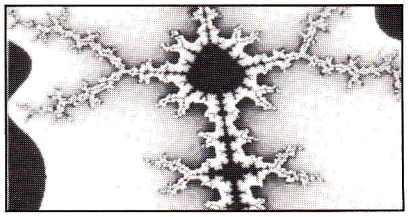
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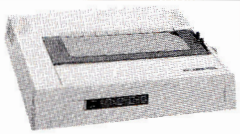
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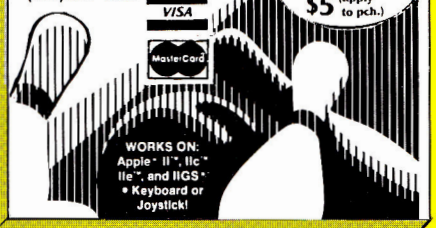
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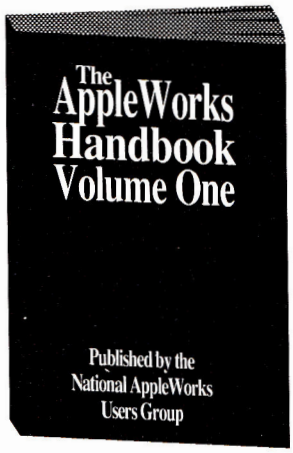
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DEVELOPER OF GAS SAVER AWARDED $22,000

BOSTON — With the oil glut worse than ever and OPEC ringing its hands, the Federal Courts have awarded a fee of $22,747 to National Fuelsaver Corporation of Boston, developers of the Platinum Gasaver.

The Gasaver, which takes only 10 minutes to install, releases microscopic quantities of platinum into the air-fuel mixture entering the engine.

Platinum has the unique ability of making unburnt fuel burn. With platinum in the flame zone, you increase the percentage of fuel burning in the engine from 68% to 90%.

Normally, that 22% of the fuel would only burn if it came in contact with the platinum coated surfaces of a catalytic converter. Unfortunately, this converter process takes place outside of the engine, where the energy produced is lost.

With the Gasaver dispensing platinum into the combustion chambers, 22% more of each gallon burns inside the engine so that 22% fewer gallons are required to drive the same distance.

The process works on both leaded and unleaded gasoline, and meets the emission standards of all states.

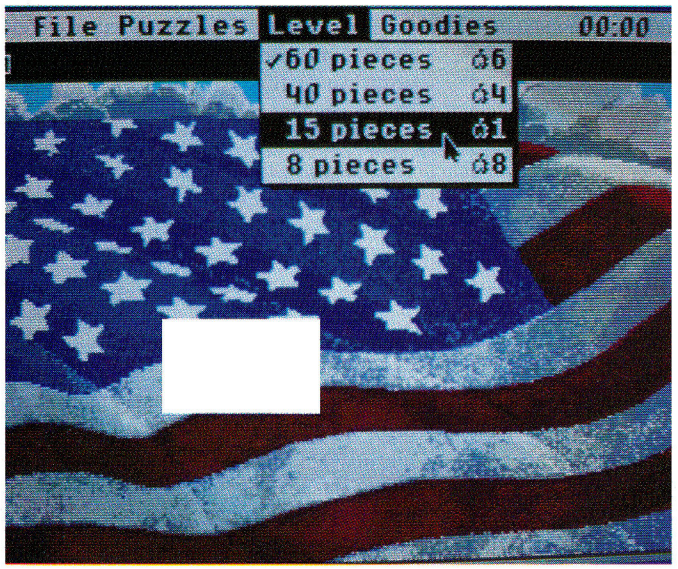
In concluding the government's five-year administrative procedure studying the Gasaver, the Federal Court stated: "National Fuelsaver Corp. and various independent parties have used a variety of methodologies to test the value of Gasaver. These independent parties often make stronger claims for the Gasaver than does its developer, National Fuelsaver Corp."

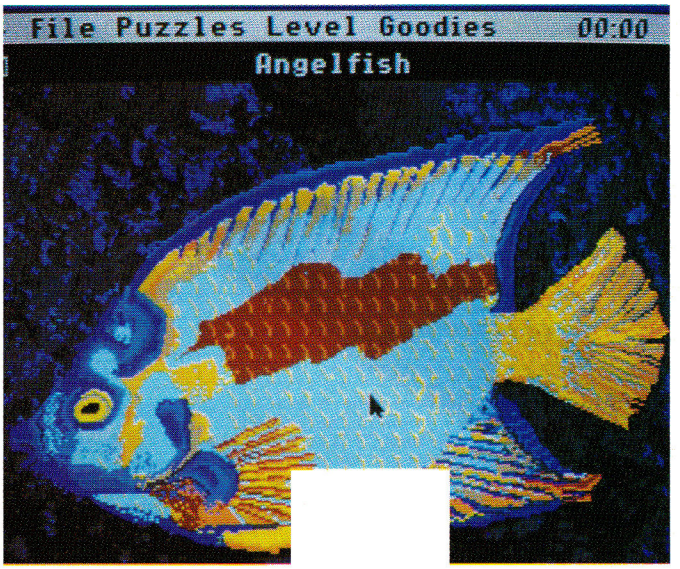
The government had already confirmed in 1984 that the Gasaver raises the octane of gasoline, eliminating the need for premium fuel.

Joel Robinson, the developer, commented: "We've already sold over 100,000 Gasavers. Ironically, we find more people buy the Gasaver for its third benefit of cleaning out carbon to extend engine life than buy it for its fuel savings or octane boosting."

For further information call 1-800-LESS-GAS (1-800-537-7427) or 617-792-1300.

Jigsaw:





Picking Up the Pieces

There's something irresistible about the challenge of completing a puzzle—some intangible intellectual reward when you finally put that last piece in place. Britannica Software's new addition to the electronic version of the genre is **Jigsaw**—a deceptively simple, yet maddeningly complex, GS puzzle game you'll play and play and play again.

Pick a picture, click the mouse to mix it up, then try your best to reassemble it. You can split your puzzle into 60, 40, 15, or 8 pieces. Some of the pictures included in the Image Library are nearly impossible to solve when separated into 60 pieces—especially the ones with lots of blue sky. The prerelease version *inCider* looked at last fall included about 20 different graphics, including a digitized shot of the cover of September's *inCider*.

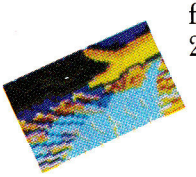
Jigsaw is GS software, so pictures jump out at you and the opening fanfare sounds like a marching band. You'll also hear rousing cheers from the "audience" every time you put a piece in the right place. (Sometimes that's the only way you know you've got it right.)

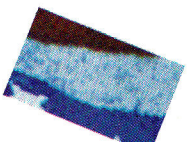
You can print Jigsaw's graphics complete or jumbled up in puzzle form. Even if you don't need a hardcopy but just want to check the original in the midst of a puzzle, you can choose See Picture from the Puzzle menu to take a look at the whole drawing, then return to the puzzle.

Play Jigsaw as a competitive game and try to be the fastest one to figure out the puzzle: Every attempt is timed and scored, and you receive a penalty for incorrect moves. "Jigsaw is challenging enough so that you really have to think," says Associate Editor Pat Payne, "but so much fun you don't even realize you're learning as you play."

"I tried to beat the recorded high scores for 15-piece puzzles—no way," adds Review Editor Lafe Low. "It must have been someone at Britannica putting in long hours of puzzling."

We're still not sure whether Jigsaw's a game, an educational program, or what. It's certainly captivating, it's definitely a lot of fun, and it'll test your deductive reasoning and logical-thinking skills, too. Jigsaw (from Britannica Software, 345 Fourth Street, San Francisco, CA 94107, 415-546-1866, $39.95) should find its way under a lot of Christmas trees this December 25th. Just what we need—another insidious time bandit. ■





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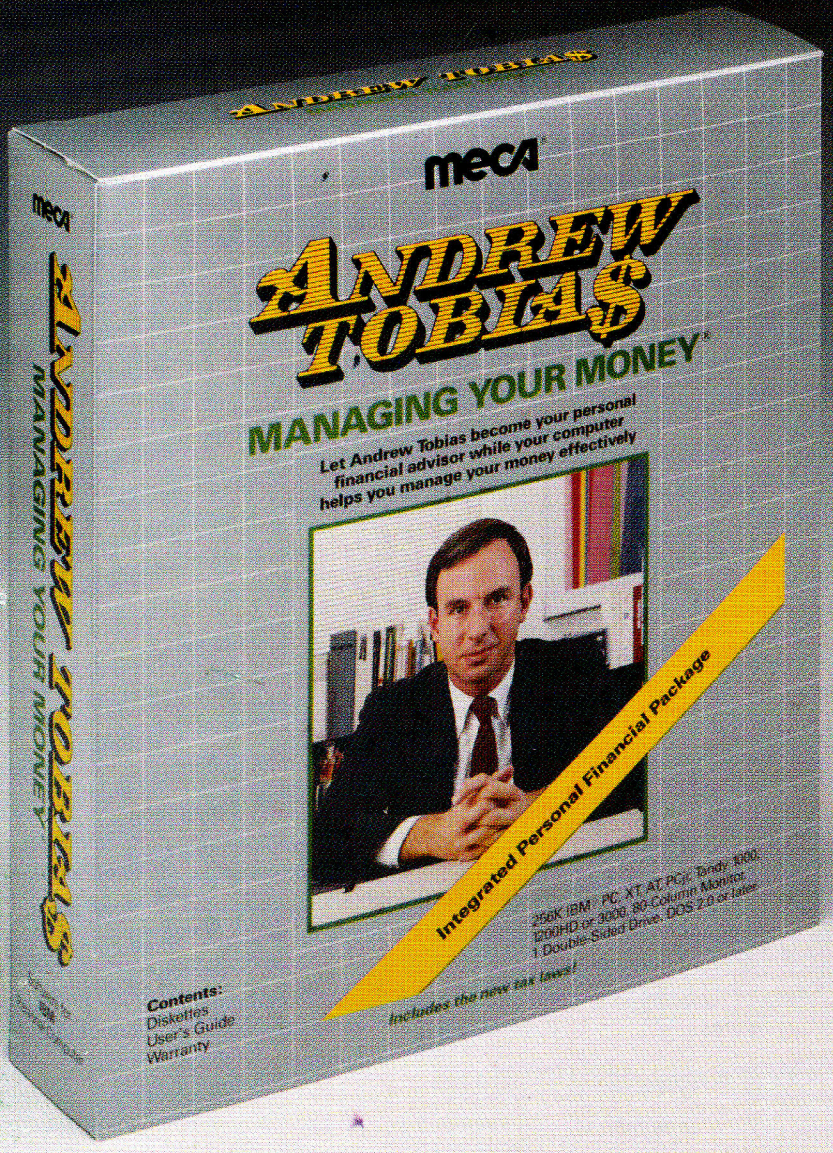
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