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Editors' Choice, p. 96

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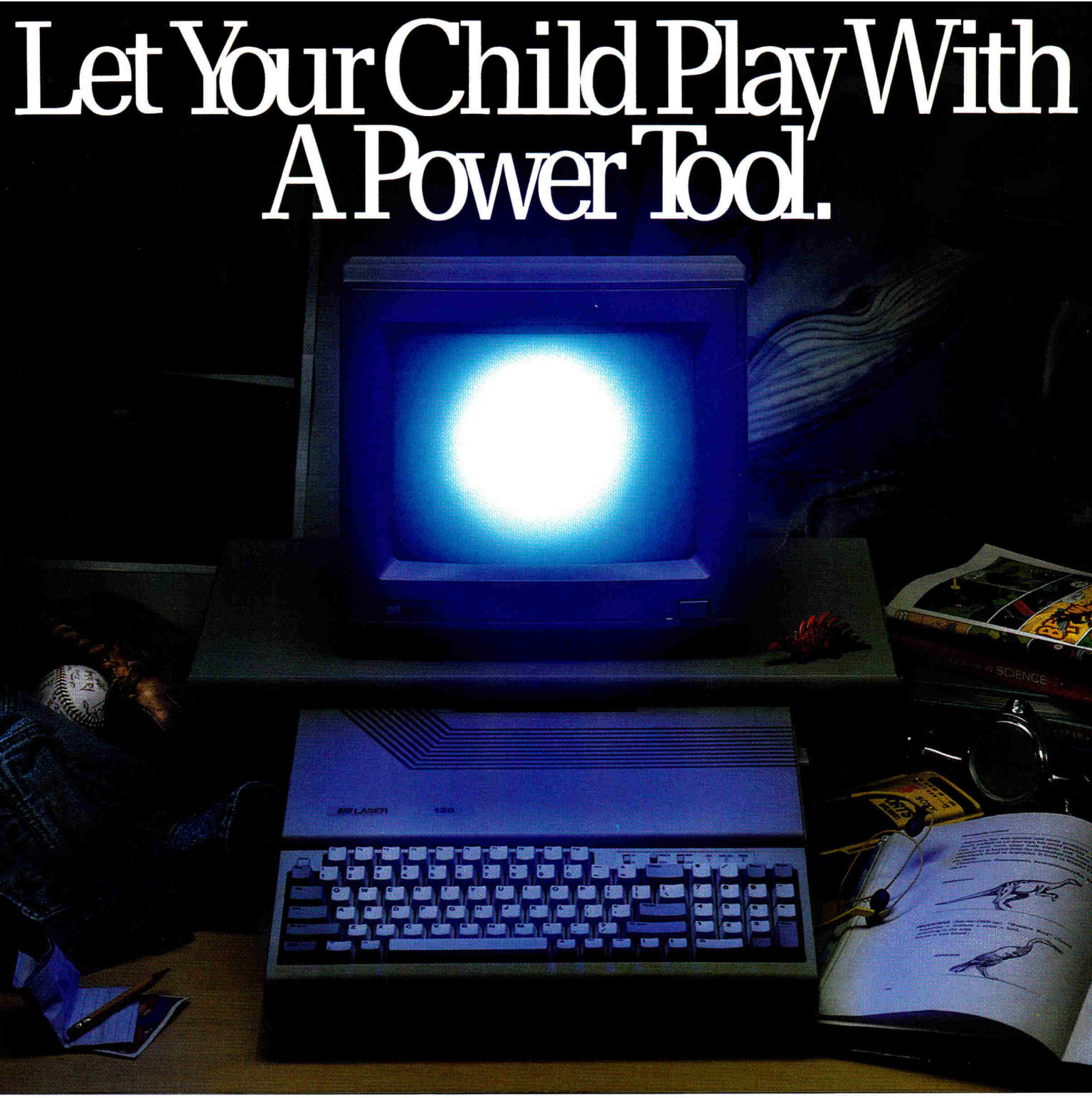

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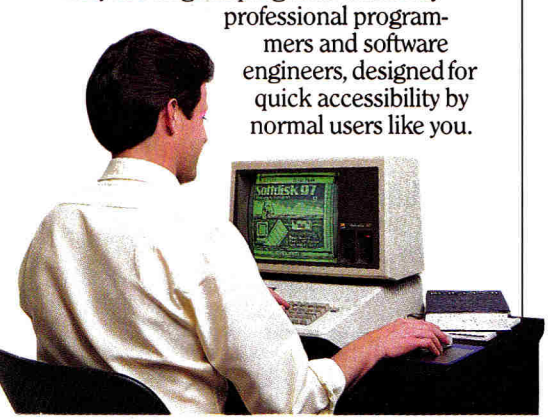

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- 2 meg. 379

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5.25 Drive 119
Buffer Pro 89
ColorLink 99
Conserver 79
DataLink 2400 ... 174
DataLink Express 179
FastMath 139
Parallel Pro 79
PC Transporter .. 369
PC Trans. (IIe kit) 29
PC Trans. (GS kit) 39
Phasor 139
Power Supply 69
RamCharger 133
RamKeeper 139
ReadyLink 69
Serial Pro 109
Slot Mover 34
Sonic Blaster 98
TimeMaster 78
TransDrive 199
TransDrive (Duo) 299
TransWarp GS ... 289
TransWarp III 159
Z80 Plus 119

INGENUITY

GS JUICE +
- 1 meg. 179
- 2 meg. 279

KENSINGTON

Antiglare Filter 39
Copy Stand 39
Printer Muffler 43
Security System .. 34
System Saver IIe .. 59
System Saver GS . 69
Turbo Mouse 115

APPLE

AppleMouse IIe .. 119
AppleMouse IIc 89
Apple SCSICard . 109
3.5 Dr. (IIe, II+) .. 319
3.5 Dr. (GS, IIc+) 329
ImageWriter II ... 459
UDC (3.5, 5.25) ... 69
IIe Enhance Kit 59
Video Overlay 439

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5.25 Disk Drive 99
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128EX-2 (3.5) 459

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Joy Sticks
- Flightstick 47
- Mach II 28
- Mach III 36
- Mach IV Plus ... 62

Mirage (mouse) ... 39
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- Mitac 2400 119
- Supra 2400 119

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- Magvx. RGB ... 289
- Sony KV1311 . 529

Panasonic Printers
- 1624 449
- 1191i 249
- 1124 329
- 1180 199

Printer Interfaces
- Fingerprint GSi 94
- Fingerprint Plus 89
- Fingerprint SS .. 59
- Fingerprint G+ .. 59
- Grappler 9 Pin .. 84
- ProGrappler 79
- SuperWriter 78
- SMT 54

Ribbons (black) 5
Ribbons (color) ... 10
SMT No Slt Clck .. 39
Thunderscan 159

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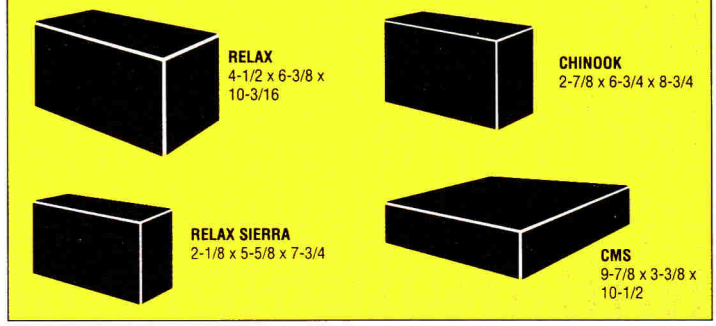

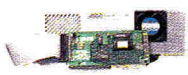

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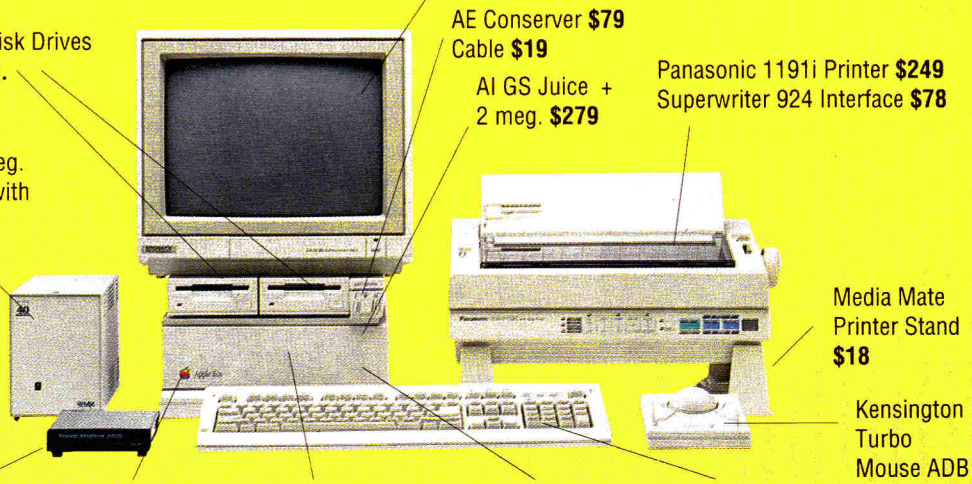

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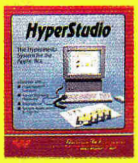

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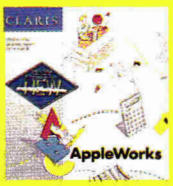

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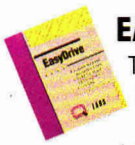

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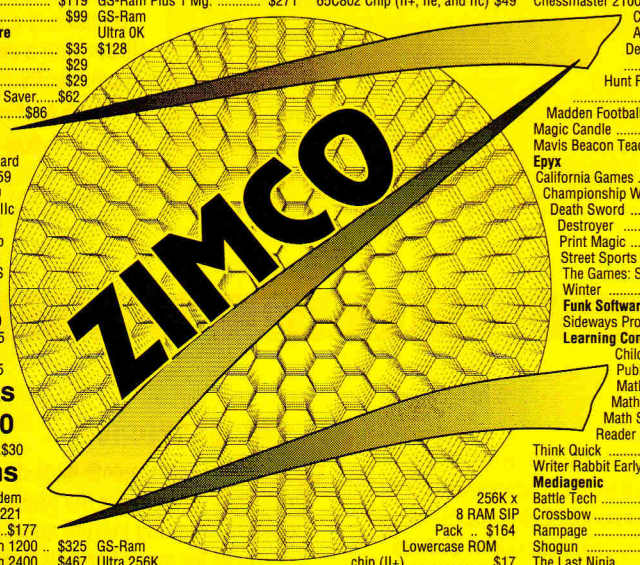

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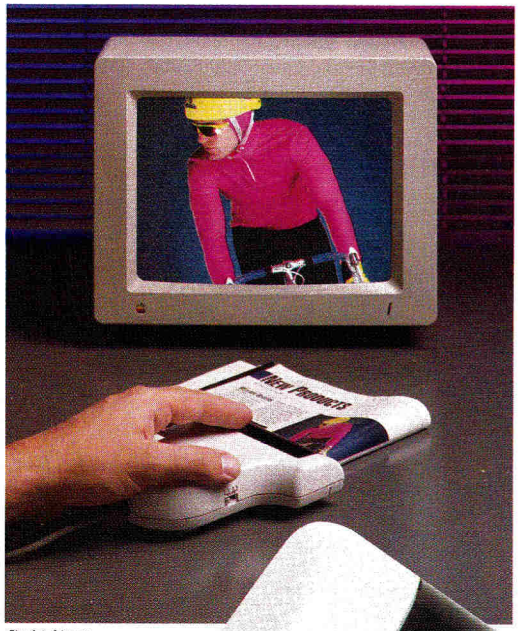

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APRIL

1990 • Vol.8 No. 4

p. 44

ARTICLES

44 Desktop Video: Making Movies with Your Apple II Part 1

Say hello to Hollywood! In the opening installment of our two-part video special, *inCider* takes a gander at the Apple II hardware, software, and accessories you'll need for high-quality home movies and animation. You're producer, director, and star of the show—Apple makes it easy, and lots of fun for adults and kids alike.

51 A Fish Called Herman

Reading and writing take on new dimensions when kids take the director's chair in a Dazzle Draw classroom video project for all ages.

57 Environmental Issues

What can a graphics environment offer a diehard fan of AppleWorks Classic? Energy conservation, for starters—maximum ease of use with a point-and-click interface. You'll also get fonts, paint software, pull-down menus, module integration—all in one box. For activists thinking of making the switch, *inCider* presents profiles of GEOS and AppleWorks GS.

p. 57

COLUMNS

***inCider*'s View** • *Dan Muse*
Renaissance Machine 8

Stattus Report • *Paul Statt*
Goldberg Visions 22

AppleWorks in Action • *Ruth Within*
Room at the Desktop 62

Press Room • *Cynthia E. Field*
Benchtop Publishing 68

Speaking of Graphics • *Roberta Schwartz and Michael Callery*
That Old Brush Magic 74

Learning Curve • *David D. Thornburg*
Real-World Connections 84

DEPARTMENTS

Letters to the Editor 12

What's New
Hardware, Software, Resources, Games, Bits, Updates 18

Apple Clinic
GS/OS Blues: Version 5 Woes, IIc RGB Video 24

Reviews
Revolution '76, StoryWorks, MasterWrite, Handwriting Analyst 3.0, At a Glance 30

Game Room
Qix, Bouncing Bluster, Solitaire Royale, The Legend of Blacksilver, Tip Sheet 36

Hints & Techniques
Print Run: Envelope Addresser, Clip-Art Loader 86

Editors' Choice
Thief of Time: Where in Time Is Carmen Sandiego? 96

Cover Photographed • Ed Judice

INCIDER'S VIEW

RENAISSANCE MACHINE

By DAN MUSE * EDITOR IN CHIEF

The moral is if you want to do only one thing with a computer, you're probably not Apple II material.

I PROBABLY DON'T HAVE TO TELL YOU, but sometimes life in the Apple II world can be a little discouraging—especially lately.

I didn't realize how frustrating things were getting, though, until I attended the January Consumer Electronics Show (CES) in Las Vegas. I've attended CES twice a year (there's a spring show in Chicago) for the last five or six years. It's always been one of my favorites. It's where you get to see the latest in electronics, whether it's digital-audio tape (DAT), high-density television, Nintendo, Sega, computer games.... You name it, it's at CES: everything from cellular telephones to porno movies. (I'm not too proud to admit that I've even peeked into the adult-video section once or twice, but only in the name of journalism.)

In addition to all the other electronics goings-on, CES is where software companies bring out their newest games. To be frank, the Apple II now takes a back seat to MS-DOS, the Amiga, and in some cases even the Commodore 64/128. But although the Apple II game market isn't exactly bursting at the seams, enough new products are coming out to keep things interesting. Britannica, Accolade, Taito, California Dreams, and others still ship new games for the Apple II. The truth is, however, that if you want a computer *only* for game playing, the Apple II isn't the computer for you. While I like a good game as much as the next person, I don't think many Apple II owners buy their computers strictly for games.

Although you may find more games for the Amiga, for instance, Amiga users can't get the educational and productivity software you and I take for granted. And even though the Amiga is the leader in video, desktop-video experts tell us the Apple II is the second choice, ahead of the Macintosh and MS-DOS machines. The Apple II—and the IIGS even more so—is a renaissance computer, as well-rounded as a computer can be.

I've always known how versatile the Apple II is, but as Apple allows the machine to atrophy, that's easy to forget. I was reminded recently, though, by *inCider*'s transition to a Macintosh II-based desktop-publishing system. We now have about a half dozen Mac IIcxes in the office, coexisting with about twice as many Apple IIs. I thought I'd be tempted to forsake the Apple II in favor of the new IIcxes. To do what we need to do technologically to produce *inCider*, we need a heavy-duty page-layout program such as Quark Xpress. But all things being equal, I'd rather have a IIGS.

The Mac systems we have run between $8000 and $10,000 apiece. My GS with two disk drives (a 3½- and a 5¼-inch), a hard-disk drive, a TransWarp GS accelerator card, and a System Saver switch/protector unit costs less than half the price of the Mac. Through our AppleTalk network, I have access to the same printers as the Macs, so if I want a laser-printed document, it's no problem.

My GS also provides me with something Mac owners simply can't get—the choice of using either text-based or graphics-based programs. For some things, such as desktop publishing, the Apple (Mac) interface is a must. For spreadsheets, databases, and word processing, give me AppleWorks. Or if I'm in the mood for a graphics-based interface, AppleWorks GS is finally coming into its own.

I guess the moral is if you want to do only one thing with a computer, you're probably not Apple II material. But if you're like me and thousands of other Apple II users who want to write letters; prepare budgets; maintain a mailing and telephone list; publish newsletters and invitations; teach kids math, reading, or geography; dabble in painting/drawing programs; spruce up videos with computer-generated graphics; prepare business presentations; and play a couple of games, the Apple II does it all.

Unfortunately, the flexibility of the Apple II is becoming too much of a secret these days. Apple doesn't seem to want to pass along the message, so it's up to you and me. I promise to continue to pester Apple and third-party software companies about supporting the Apple II, but only if you promise to do the same thing. It's up to us to convince Apple and those II developers to revive this renaissance machine.□

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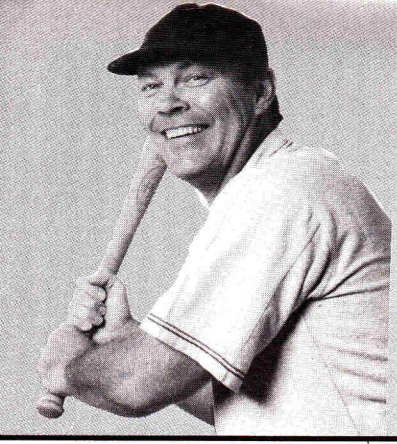

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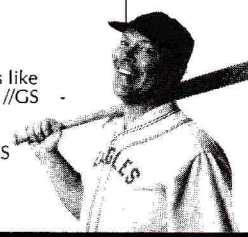

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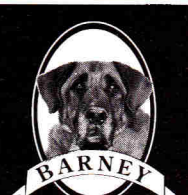

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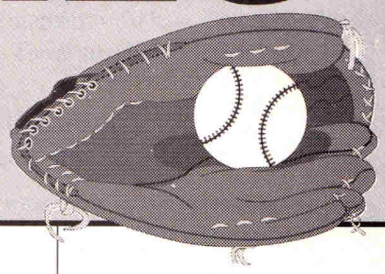

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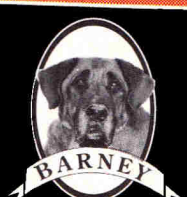

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Business Is Business

I CAN'T AGREE WITH DAN MUSE'S editorial in January about the value of Apple IIs in schools ("Journalist, Teach Thyself," p. 8). I've been an Apple II user for ten years, but last year I sold my last Apple II and reinvested my money in a machine known to the world simply as a clone.

Reid and Hume's article that displeased you so much came close to hitting the nail on the head. You didn't attempt to deflect their most damaging statement, that the Apple II "has almost nothing to do with computers that grownups see on the job every day." It's the truth. I have yet to find a business that uses Apple IIs. If I do find a business that does, it won't earn any respect from me, for that reason.

Teaching schoolchildren to use Apple IIs is like teaching them to crawl. The knowledge they gain might be useful to an extent, but not directly applicable. If children were taught to deal with the *C:\>* prompt now, maybe businesses wouldn't have so much trouble teaching it to their employees 20 years from now.

I agree that the majority of educational software is junk, but this applies to all educational software, not just Apple software. If you weren't so busy defending yourselves, you'd notice that children rarely sit in front of those educational games for more than ten minutes.

Brian Witt
Appleton, WI

Brian, like Reid and Hume, you miss the point. We're not talking about "teaching schoolchildren to use Apple IIs," but teaching them using *Apple IIs. If you're teaching students multiplication tables, you want to make sure they learn how to multiply; you're not worried about teaching computer skills. The Apple II is sturdy, reliable, and colorful, and there's a huge base of software for it. It's a great tool for teachers.*

It's ironic that you're criticizing the Apple II for using old technology, but you expect the C:\> prompt to be relevant 20 years from now. In 2010, promise you'll write to an MS-DOS magazine and complain about PC clones. —*eds.*

Income Taxes Revisited

NO SOONER DID MY INCOME-TAXES column ("The Taxman Cometh 1," AppleWorks in Action, February 1990, p. 60) appear than the letters began to arrive.

Albert W. Brunot of Swampscott, Massachusetts, sent along two terrific formulas to correct those in error in the column. Simply replace the existing formulas with these:

Formula 13 (*Social Security Owed*) in B58:
@IF(B9<400,0,@IF(B4>48000,0,
.1302*@MIN(48000–B4, B9)))

This formula calculates self-employment tax on income of $400 or more, taking into consideration the FICA amount already paid by the taxpayer.

Formula 20 (*Taxable Income Over Top of Schedule*) in K28:
@IF(B52>J30,.05*@MIN
(F3*11200,B52–J30),0)

Copy this formula to K33, K38, and K43, keeping every cell but J30 an absolute (*No Change*) reference. J30 is relative. This formula calculates the surcharge when taxable income exceeds the top amount in the respective schedule.

Ruth K. Witkin
Plainview, NY

Quicker Spelling

CONCERNING "LIFE WITH APPLEWorks" (December 1989, p. 90), speeding up the spelling checker in AppleWorks 3.0—speeding up all of AppleWorks 3.0, for that matter—may be easier than you think. Think RAM!

If you have 512K or more of RAM, use a copy utility to load all the files on your AppleWorks 3.0 disk, including custom and main dictionaries. Copy your copy program to memory as well. Transferring files from a 3½-inch disk to RAM is quick and easy; moving files from 5¼-inch disks will take some time for swapping, but you'll get back the extra minutes you spend copying at the start of the day when you come to spell-check a multipage document later.

At the end of your session with AppleWorks 3.0, return to the copy utility and copy the custom dictionary file, with your changes, from RAM to a permanent disk. If someone has a better way of doing this, please let me know.

Gary Lauterbach
Bradley, CA

Randy Brandt of JEM Software (P.O. Box 20920, El Cajon, CA 92021) has, as he often does, a better way. Spell Copy ($12.50 postpaid) copies dictionaries automatically to RAM on bootup and can also modify AppleWorks if you don't want to keep your dictionaries on the startup disk. —*eds.*

No Formula, Please

HOW CAN I MOVE A COLUMN OF figures in an AppleWorks spreadsheet without also moving the formulas? That is, how can I remove the formulas from a column of figures? Once a year I have to carry over a column of more than 500 numbers, each computed by a formula, into a new column. Do I have to retype all those entries?

C.H. Causey
San Diego, CA

Stop typing and copy that column to the clipboard, not within the spreadsheet. When you copy them into

the new spreadsheet from the clipboard, just choose values only. —*eds.*

MHz and Other Pains

IN "THE GOOD, THE BAD, AND THE Bow-Wows" (December 1989, p. 68), you state that the clock speed of the Apple IIGS is 2.6 megahertz. The correct speed is 2.8 megahertz.

This isn't a petty complaint. Can we depend on you to bring us facts, not speculation? If you don't know or are unsure, do your homework. How much of your other information is incorrect?

Brian Poole
Lake Havasu City, AZ

Between 2.5 and 2.8 percent of the information in inCider *is incorrect. According to Michael Fischer in* The Apple IIGS Technical Reference *(Osborne-McGraw Hill, 1987), "The 65816 in the IIGS performs 2.8 million operation cycles per second. Some of these cycles are used in servicing the various support circuitry in the IIGS, reducing the effective speed of the IIGS to 2.5 million cycles [MHz]."* —*eds.*

Liquid Crystal

WHERE CAN I FIND AN LCD screen for an Apple IIc or Laser computer?

Junior Tully
Elkview, WV

Roger Coats (P.O. Box 17166, San Diego, CA 92117, 619-274-1253) sells a liquid-crystal diode display that works with any Apple II or Laser compatible. —*eds.*

Beagle Buddies

I'VE USED AN APPLE IIE IN BUSINESS for several years. I do almost all my work—managing the day-to-day administrative duties of a trucking company—with AppleWorks and most of the TimeOut programs. I couldn't disagee more with Phil Shapiro's letter. ("Deliver Us," Letters to the Editor, November 1989, p. 10).

Apparently, he doesn't do business with any of the other "care nothing" software companies. But you don't need to look at the bad guys to realize Beagle Bros stands out as the best there is.

About a year ago when AppleWorks 2.1 came out and I needed to update a lot of the TimeOut features, I had a problem with UltraMacros. I talked to Beagle Bros on the phone and on AppleLink (now America Online). I got immediate response: Randy Brandt called and sent me a copy of the updated version with no request for money and no proof of purchase. I've never heard of customer service like that from *any* software publisher.

As great as AppleWorks is, it would still be a fairly average integrated program if it weren't for supporters like Beagle Bros. Without that company, we'd have died of boredom long ago. Those guys have a knack for making work fun.

Thomas E. Carlton
Burlingame, CA

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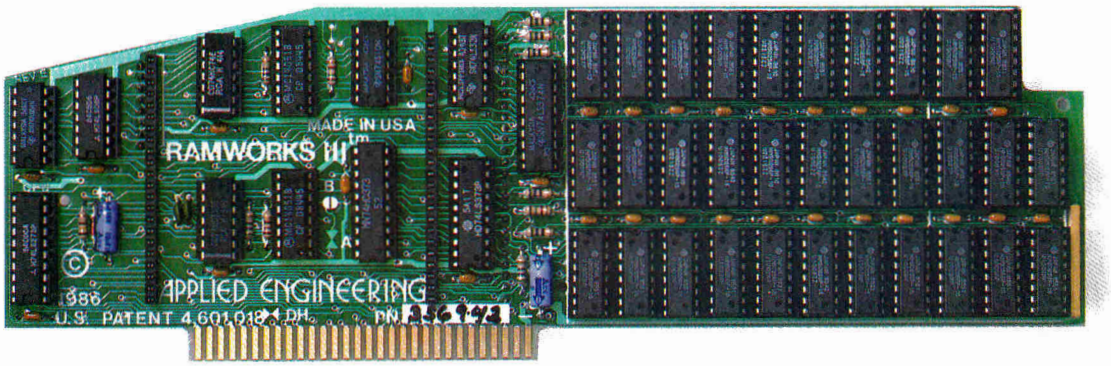

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RamWorks, nothing comes close to enhancing AppleWorks so much.

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

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

The Ultimate in RGB Color.

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

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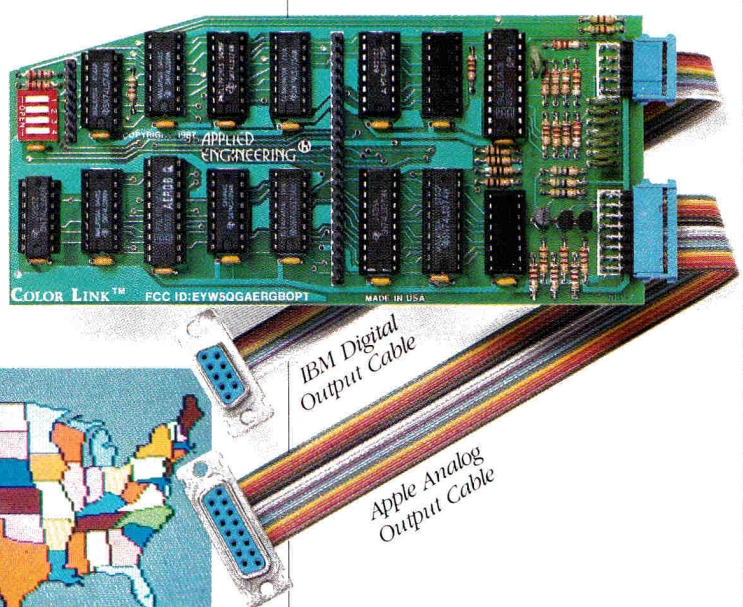
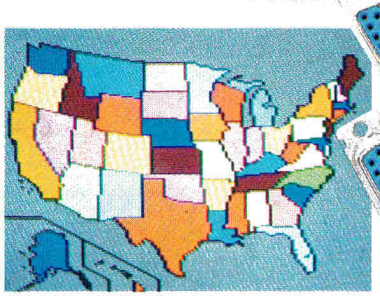
composite color monitor). For only $129 it can be added to RamWorks giving you a razor sharp, vivid brilliance that most claim is the best they have ever seen. You'll also appreciate the multiple text colors (others only have green) that come standard. But the RamWorks RGB option is more than just the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

ColorLink™ RGB Option





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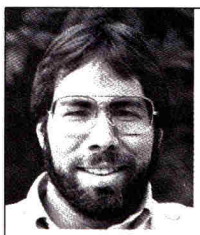

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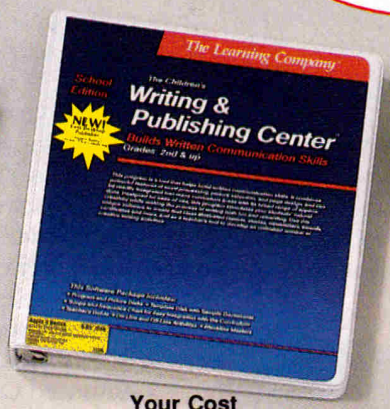

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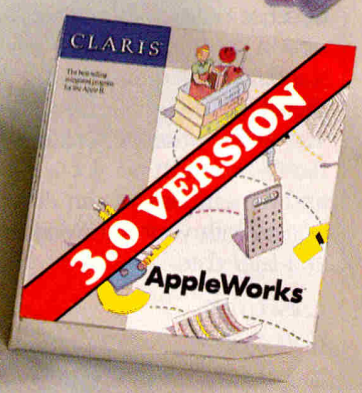

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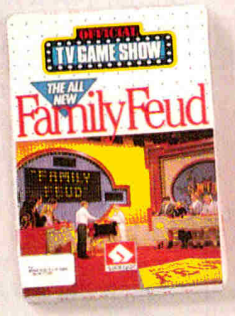

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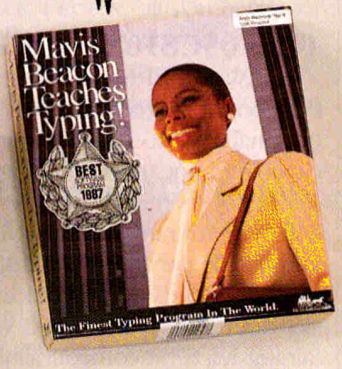

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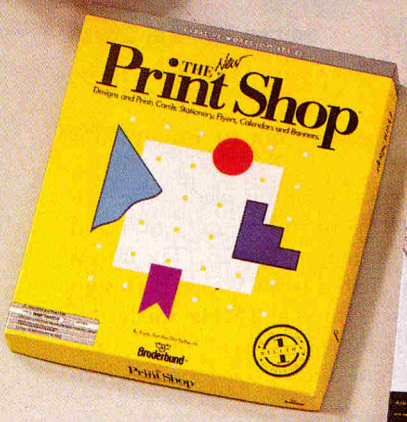

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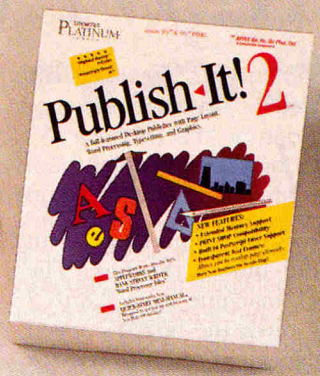

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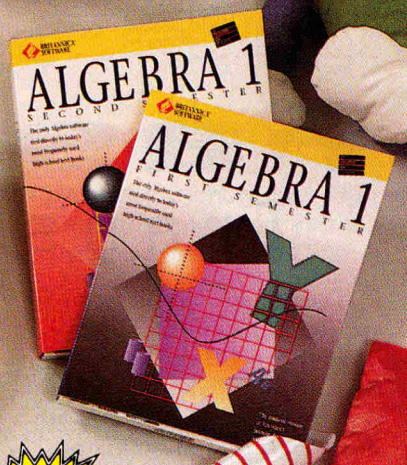

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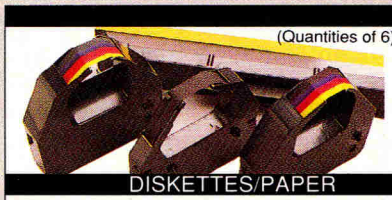
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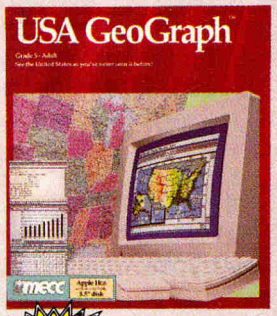

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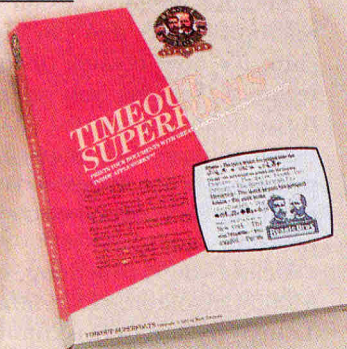

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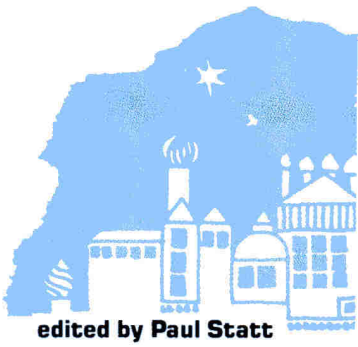


edited by Paul Statt

Faster TransWarp

A recent advance in technology allows the Apple IIGS to run nearly 500 percent faster than it did out of the box. The **TransWarp GS** card elevates the stock machine from 2.8 to 7 megahertz (MHz), but you can now push the board's speed limit to a blazing 13 MHz with a **replacement microprocessor and a new crystal oscillator**.

Speed of operation can refer to a lot of things where computers are concerned, but we're talking here about the native ability of the microprocessor to carry out individual instructions. The measure of this speed is rendered in megahertz; the traditional Apple II operates at 1 MHz.

That seems fast enough for most things on the IIe and IIc, so why does the IIGS, with its 2.8-MHz rating, seem slower? It's being asked to do more in maintaining the lush desktop environment. Megahertz ratings don't tell the whole story when you're comparing Apples with other computers, but as a general rule, the standard IIGS operates at about one-third the speed of a good IBM clone or Macintosh.

The speed of a computer is determined by its microprocessor. In the case of the Apple II, that's the 65xxx-series chip sold by Western Design Center (2168 East Crown Road, Mesa, AZ 85213, 602-962-4545). You could swap the microprocessor for a faster replacement and build a faster machine, but things aren't that simple. The IIGS is hard-wired to run at the speed of the original 65C816; the only way around this limitation (at least for now) is the TransWarp GS accelerator card, which is designed to allow speed upgrades.

Because Western Design Center now makes faster 65C816 microprocessors that can replace the standard TransWarp GS chip, it's now possible to build a faster IIGS. For legal, not technical, reasons, you can't upgrade your TransWarp GS yet through any authorized channel.

But you can do it yourself. You'll need to buy a faster microprocessor from Western Design Center and a faster crystal oscillator from a good electronics store—your local Radio Shack probably won't have it.

Before you do anything, call Applied Engineering (P.O. Box 5100, Carrollton, TX 75011, 214-241-6060) and ask if the TransWarp upgrade is commercially available. That's by far the best way to speed up your TransWarp.

If you choose to perform your own TransWarp GS upgrade, you'll void your Applied Engineering warranty. You may also void warranties on other peripherals or the computer itself. If you make a mistake and fry a chip, which is entirely possible, the cost of correcting the situation will come from your wallet. *inCider* encourages readers not to attempt this operation.

HARDWARE

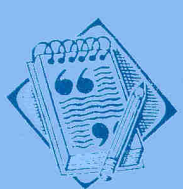
That rather serious warning aside, the upgrade is a snap. Call Western Design Center and ask for its fastest production 65C816. (The fastest production part available from Western Design Center in January was rated at 9 MHz; the fastest experimental part, at 13 MHz.) Pricing varied as of this writing, ranging from $35 to $95 for different microprocessors, including the fastest experimental parts.

Make sure your local electronics store carries a crystal oscillator—not merely a crystal—rated at four times the speed of the new microprocessor. If you have a 9-MHz 65C816, get a 36-MHz crystal oscillator. If you have a 10-MHz 65C816, get a 40-MHz crystal oscillator. These parts aren't common, but you should have no trouble ordering one. The cost should be $5 or less.

Now look at your TransWarp GS. If the ROM chip located in the center of the card reads "Version 1.5" or higher, you're ready. Earlier versions require an upgrade to the card.

Carefully replace the microprocessor on the TransWarp GS with the faster part. Pull off the crystal oscillator and replace it with the one that's four times faster than your new microprocessor. Reinstall the card, and you should be ready to go.

It sounds easy because it is. The hard part was figuring it out in the first place. For this, we're grateful to Bill Heinemann of Interplay Productions and Bill Mensch and Andrew Hall of Western Design Center. Thanks, guys. *—J.A.*

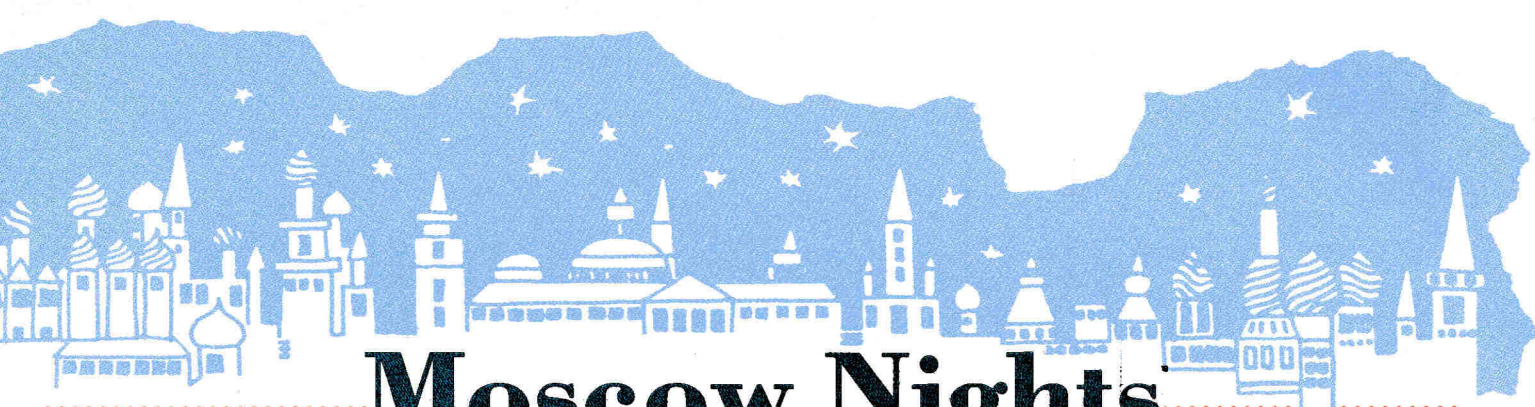


QUOTES

"Apple is making it clear that it views the Macintosh as the system for the future, and already many schools are choosing to buy Macintoshes, particularly for students in higher grades. Apple barely promoted the Apple II this Christmas [1989], angering suppliers of Apple II software.

" 'The transition is occurring even today,' said Delbert W. Yocam. 'At some point we'll have to make the final move.' "

Andrew Pollack, *The New York Times*, December 29, 1989, in an article that noted Apple was losing its dominance in the low-priced computer market



Moscow Nights

The International Computer Club (ICC) of the Union of Soviet Socialist Republics will hold the first International Computer Forum (ICF) from June 14 to 17 at the World Trade Center in Moscow.

Vladimir Federov, who heads the Apple special-interest group of the ICC, says he would like to hold "a special Apple II/Mac forum, if there are enough interested people from the USA, Canada, etc. I'd like to better understand the typical Mac and Apple II user."

Keynote speakers and panelists in Moscow promise to include leading Soviet scientists (even a Nobel Prize winner or two), officials of the Soviet government, and representatives of some of the "world's leading hardware and software companies. The program will also feature a demonstration of the software of the best Soviet programmers," according to Federov.

Al Martin, editor and publisher of our friendly rival *The Road Apple*, will be there, and he has generously agreed to report on the conference for an upcoming issue of *inCider*.

If you register before April 15, the cost of the ICF is only $520 ($250 for a second person). You must transfer that amount to the following account of the ICC: 18000550/002 in V/O Sojuzinraschet of the Bank for Foreign Economic Relations of the USSR, Serpushovski Val, 8, Moscow, USSR. The ICC is located at Center Proyezd Serova, 4, Moscow, USSR, 921-09-02 (which is also its fax number from 1500 to 500 UTC, 10:00 a.m. to midnight, EST). *inCider* also has a limited number of registration forms. ***—P.S.***

ZIP WINS ROCKET SUIT

Last November the Los Angeles Superior Court ruled that Zip Technology (Los Angeles, CA) did indeed have an exclusive patent on the memory-cache system technology used in the company's Zip Chip and in the Rocket Chip made by Bits and Pieces Technology (Westlake Village, CA) to accelerate microcomputers. The court ordered Bits and Pieces to immediately stop its business and close down operations. A company spokesperson stated that Bits and Pieces doesn't plan an appeal.

Dick Stivers, president of Zip Technology, said he was obviously pleased, not least because the settlement of the suit means that Zip can now complete "our refocus and reorganization plan, which includes two new manufacturing facilities with heavy production capabilities that should allow us to fulfill our heavy backlog" by January 1990. Release date for the IIGS Zip Board was set for February 1990.

Still in question was the deal under which Bits and Pieces had licensed Rocket Chip technology to Applied Engineering for use in its TransWarp II accelerator. Bruce Benesh at Applied Engineering said the settlement between Zip and Bits and Pieces shouldn't affect Applied, but Stivers said Applied has been advised to "terminate completion of the [TransWarp II] project." No agreement had been reached at press time. ***—P.S.***

news from CES

The word around January's Consumer Electronics Show in Las Vegas, Nevada, was *games*. Nintendo games, Sega games, MS-DOS games—and, yes, folks, Apple IIGS games.

Britannica is as busy as ever rounding out its Fanfare line of GS entertainment titles with **Task Force**—an arcade-action kill-the-bad-guys-before-they-kill-you game from the talented programmers who brought you PBI Software's Alien Mind and Fanfare's Gnarly Golf and Great Western Shootout.

Britannica's also cooking up a sequel to the popular puzzle game Jigsaw (Editors' Choice, December 1988, p. 136.) **Jigsaw Deluxe** will feature even more pictures and more options than the original.

GAMES

Accolade has taken a bit longer than originally planned with some of its GS titles, but **Blue Angels**, **Third Courier**, **Grand Prix Circuit**, **European Challenge**, and **Jack Nicklaus Presents the International Courses** should all ship soon. Taito is busy working on **Puzznik**, **Qix**, and **Rastan** for the GS and continues to show a knack for furiously addictive puzzle and arcade-action games with captivating play and fabulous graphics.

Interplay is following up the superb GS version of **Battle Chess** with an Apple IIe and IIc version, for those who didn't care to plunk down two grand for a platinum computer. The Interplay people also talked about their unique cross-format upgrade policy: If you've purchased one version of an Interplay game, you can upgrade to another version in a different format for $15—so you're not sunk if you change the flavor of your computer.

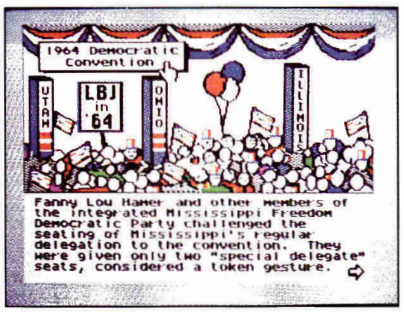
New World Computing was in the Electronic Arts booth showing an Apple II version of **King's Bounty**, a nicely animated adventure. An Apple II version of **Nuclear War**, a tongue-in-cheek game of black humor, is also possible.

Electronic Arts may be producing an Apple II (hopefully GS) version of **Ski or Die**, an alpine version of the outrageously radical Skate or Die. EA also announced a major affiliated-label agreement with Parker Brothers to do a computer version of *Trivial Pursuit*. Unfortunately, the electronic **Trivial Pursuit** will be available only for IBMs and compatibles—at least for now. Stay tuned. ***—L.L.*** ►

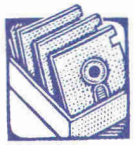
MORE HYPERTEXT

Multimedia is the word, and Scholastic Software is bringing it to schools with its new **Scholastic Hyperscreen**. Hyperscreen enables students, teachers, and administrators to create visually engaging interactive presentations, reports, and lessons.

With Hyperscreen you can design and link text, images, and sound. By using as many as 15 on-screen "buttons," you can display another screen, play a musical selection, read some text, or even control an external videodisc player.



Hyperscreen includes high-resolution graphics backgrounds, clip art, borders, fonts, sound, and a complete set of drawing tools on disk. If that's not enough, you can purchase **Graphics and Sound Booster Packs** from Scholastic, as well.


SOFTWARE

"Scholastic Hyperscreen was developed in response to teachers' desires for multimedia tools compatible with all Apple II computers," according to publisher Peter Kelman. "Whether they're designing custom presentations for an entire class or for an individual student, teachers can adapt the flexibility of this program to develop a wide range of challenging and stimulating interactive learning experiences."

Scholastic Hyperscreen comes on three 5¼-inch disks or one 3½-inch disk and works with the Apple II Plus, IIe, IIc, IIGS, and IIc Plus computers. Including *User's Guide* and *Teacher's Guide*, Hyperscreen costs $99.95 ($499.95 for an AppleTalk or Corvus network version). Call or write Scholastic's Inquiry Department at P.O. Box 7502, 2931 East McCarty Street, Jefferson City, MO 65102, (800) 541-5513, for more information, or circle number 350 on the Reader Service card. ***—P.S.***

UPDATES

- The playbook and roster for **John Madden Football** (Electronic Arts, $24.95) just got a lot bigger: The **National Football League Players Association Players Disk** not only has the stats for the teams and players of the 1987 and 1988 NFL seasons, it also includes 86 new defensive plays and 22 offensive "trick plays."
- Spring Branch Software (Manchester, IA) has fixed a couple of bugs in its popular math program **GS Numerics**, but the big improvement is that this huge program now fits into a puny 587 kilobytes.

THE BOOK ON ULTRAMACROS

If you think that Beagle Bros' TimeOut UltraMacros could probably do even more for AppleWorks than it does now, you're probably right. But quit complaining; buy Mark Munz's ***UltraMacros Primer*** and get to work.

RESOURCES

The *UltraMacros Primer* can help a rank beginner tame the powerful AppleWorks programming animal that UltraMacros is, but it's also full of information for the old hand: How about a chart of important AppleWorks memory locations for PEEKing and POKEing?

Mark Munz works for Beagle Bros, but you may have seen his UltraMacros tutorials in *The AppleWorks Forum*, from which some of the material in the *UltraMacros Primer* was taken. It's the only book available about this particularly handy programming language "for the rest of us."

If you've ever wondered how far you could push AppleWorks just by taking advantage of UltraMacros' ability to memorize keystrokes, invest $19.95 (plus $2 shipping) in the *UltraMacros Primer*, from the National AppleWorks Users Group, P.O. Box 87453, Canton, MI 48187, (313) 454-1115, or circle number 352 on the Reader Service card for more information. It's as easy as programming gets. ***—P.S.***

HEBREW WORD PROCESSOR

While a text-based word processor is almost always faster than its graphics-based cousin, the slower program has the edge when it comes to printing and displaying non-Roman characters—and that's only one of the advantages of Davka's *HaSofer*, a *bilingual word processor* for the Apple IIGS.

***HaSofer* is the Hebrew word for *scribe*, and this one is competent in Hebrew and English. Hebrew text reads from right to left, English from left to right, but HaSofer can print in either direction, or in both directions in the same document—perfect for students and teachers. It uses the Apple point-and-click interface, with pull-down menus, keyboard equivalents, search and replace, and formatting by ruler. It even includes two different Hebrew fonts.**

SOFTWARE

Davka is the leading developer and supplier of software for Hebrew-language and Judaic studies, offering more than 100 programs. HaSofer requires 512K and a 3½-inch disk drive; it sells for $199. For more information, call or write Davka at 845 North Michigan Avenue, Suite 843, Chicago, IL 60611, (312) 944-4070, or circle number 351 on the Reader Service card.

—P.S.

■Fruition Publications (Box 103, Blawenburg, NJ 08504) hopes to publish an annual disk of **HyperStudio** (Roger Wagner Publishing) stacks to promote the use of hypermedia in schools and libraries. Call (609) 466-3196.

■We're still looking for **Applied Engineering**'s Mac product.

■Military employees will have a hard time finding Apple computers—they're no longer sold in stores of the **Army and Air Force Exchange Service**. According to *The Pentagonian* (Washington, D.C.) in November of last year, "The decision was based on Apple's plans to target the small-business market versus the home-computer market." Warranties will be honored by Apple.

■Some analysts blamed Apple's disappointing stock performance at Christmas on poor **Apple II and Mac SE** sales.

■Abracadata's (Eugene, OR) **Find Noriega!** for the Apple II got mentioned in *The Wall Street Journal* shortly after the U.S. invasion of Panama. We're still looking for the game.

APPLE BITS

UPDATES

●Kula Software (Honolulu, HI) just sent us the 1989 **Kula Index**, which we look forward to every January. We also noted the ***A+ Memorial Index*** among lots of other neat books, indexes, and software. Write to Kula for a catalogue.

●Applied Engineering (Carrollton, TX) is not only shipping its easy-to-use telecommunications software **ReadyLink**, it's also offering it at half price—$49—to registered DataLink modem owners.

IIe KEYBOARD $44.95

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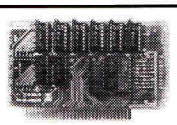
Apple Compatible Cards and Products *SALE!*



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IB137 For Apple IIe and IIc..... **$39.95**

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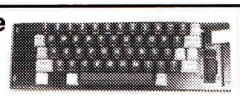

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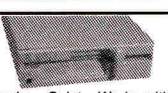

• Direct drive • 160K storage • 40 tracks • Quiet • Works with Apple & compatible controllers (JE875, see left) • Complete with connector
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JE1028 Unidisk Compatible (for IIc)..... **$79.95**
AAM Adapts II/II+ Drives to Apple IIc (S20-pin to DB19-Pin) **$4.95**

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• Apple II/II+/IIe compatible • Hayes command compatible • Auto-dial/auto-answer • Includes call progress monitor, speaker, Zoom communication software & manual
ZM300..... **$49.95**

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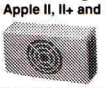

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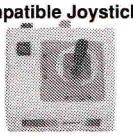
• 110V/220V • +5 @ 5A, +12 @ 2.5A, -5 @ .5A, -12 @ .5A
KHP4007..... **$44.95**

Apple II, II+, IIe and IIGS Compatible Joystick



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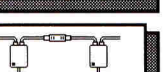

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STATTUS REPORT

GOLDBERG VISIONS

By PAUL STATT * SENIOR EDITOR

We need goofy ideas. Seriously. Apple sure tries to supply plenty of them.

"TECHNOLOGICAL VISIONS ARE BOLD AND fantastic schemes ranging from the improbable to the edge of the impossible. They are the means which technologists for the past five hundred years have used to express the most extravagantly fanciful aspect of their innovative activity. As creations of the technological, not the literary or popular, imagination they are essentially an exaggerated form of the element of play. . . ."

—George Basalla, *The Evolution of Technology*, Cambridge University Press, New York, 1988

"Knowledge navigation," Apple President John Sculley's video vision of the future, makes sense now. I used to think Sculley was merely silly.

Knowledge Navigator: The Video is certainly ridiculous: A 21st-century professor fumbles through a day's work in minutes by telecommunicating—without a modem and without a fuss—with an on-line database that includes full-color maps and videos and doesn't seem to cost a penny, and with a willing colleague, whom he cajoles into lecturing his students for him.

The joke is supposed to be that the professor employs his "knowledge navigator" to avoid his mother's nagging; the subtler humor is that he avoids doing any work at all. It's a silly film, but now I interpret it as "an exaggerated form of the element of play." The Knowledge Navigator's not meant to be real; it's a Rube Goldberg computer.

As George Basalla, a historian of technology at the University of Delaware, explains, Goldberg's drawings expose "the absurdity of an industrial civilization that creates complex machines to accomplish trivial ends and that naively believes that all human problems can be resolved by technology." So, too, the Knowledge Navigator: The parts are real—the on-line database, the video teleconference, the graphics interface—but they're combined in a wildly intricate fashion, with disregard for cost or reason, to perform some simple task.

Personal computing is thick with examples of absurdly complex solutions to simple problems. You probably recall at least one night spent struggling to connect with a friend across town via a willful modem, or coaxing a recalcitrant printer to address an envelope, only to mutter, "Wouldn't it be easier to call on the phone?" or "Can't I just type this?"

It would be easier, but that's not the point. You've got *vision*, and so do John Sculley and Apple. We need goofy ideas. Seriously. Apple sure tries to supply plenty of them: desktop publishing, knowledge navigation, multimedia.

Inventors invent for the fun of it, Basalla thinks. But "the belief that necessity spurs on inventive effort is one that has been constantly invoked to account for the greatest part of technological activity," and it is nowhere more persistent than among the folks who sell computers. Your kids need a computer to make the honor roll, they say. Your business needs one to escape the IRS. You need to shop for plane tickets on line or the airline's going to lose your luggage. But Invention is rarely the child of Necessity; more often it's Play that forgets to protect itself and bears an Invention.

Using the evolution of life as a metaphor for the evolution of technology, Basalla says that no technology ever came into existence to meet needs; it's "the accumulation over time of small variations that finally yielded novel artifacts." Leonardo da Vinci, Rube Goldberg, and now John Sculley inspire the diversity that evolution requires. Economics provides the selection.

And where does that leave Apple's "visions"? Desktop publishing, for one, isn't new—we've had typewriters and printing presses for years. Desktop publishing evolved; Sculley never spoke the words, "Let there be DTP." Multimedia is as old as the first book with pictures; knowledge navigation is nothing but the process of learning. Thus old ideas evolve.

Apple's Rube Goldberg approach to research and development is daring, but also fun: Combine the mundane parts of today's computer into a laughable computer of the future. Whether Apple meant to or not, its film pokes fun at the whole enterprise of computing. But Apple's visions, like Goldberg's, "reflect the great pleasure taken in playing with technological possibility for its own sake," as Basalla says. That pleasure distinguishes Apple still.□

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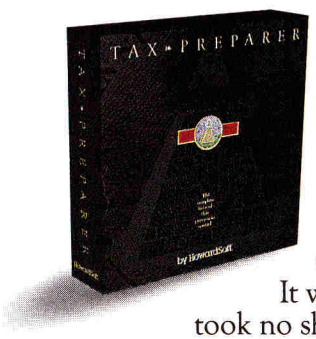

Before buying Tax Preparer, I was skeptical, because it cost less than $300, with annual updates under $100 a year…cheap enough for individuals. But once I saw it I knew it was just about as professional as tax software can get. It was the only package that took no short cuts to accuracy: it transferred hundreds of numbers among IRS forms, computed dozens of worksheets, and recomputed AGI as often as necessary to get an accurate return. And all automatically.

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But the biggest lifesaver was the hidden automation. I had forgotten to report the self-employment tax for one taxpayer. But when I went back and checked the return, I found that Tax Preparer had already generated and completed the required Schedule SE and reflected it in the return. I also overlooked the new law that requires some taxpayers to file Form 8606 for their IRA; but the returns where this situation existed had a form generated and completed by Tax Preparer automatically! These and the other automatically-generated forms are quite a difference from tax software with "diagnostics" that tell *you* to prepare another form; if it's needed, Tax Preparer just takes care of it itself.

The final printed product really capped it off. The printing was so automatic that we printed all returns for the day while we were closing up the office. The printouts were IRS-ready, complete with automatically cross-referenced supporting statements.

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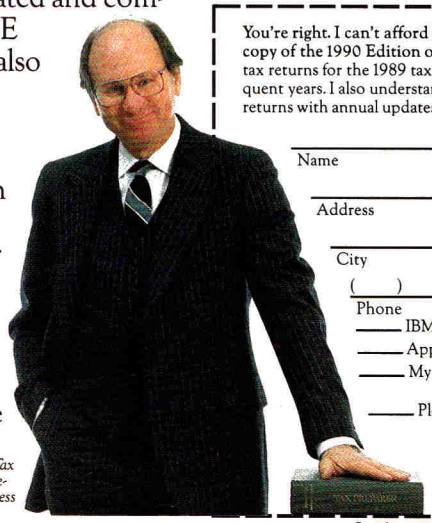

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GS/OS Blues

Even if your application works with GS/OS v.5.0.2, it won't necessarily take full advantage of the system's features.

By WILLIAM P. KENNEDY, Ph.D.

Version 5 Woes

I'VE TRIED UNSUCCESSFULLY TO install the "latest system files" for the newest GS/OS version 5.0 onto several applications' disks. Each time I get the message that I need more disk space. What's wrong?

Tim Hohs
Fruitvale, ID

I CAN'T GET GS/OS VERSION 5.0 installed on my AppleWorks GS System Disk (version 1.0). I'm disappointed particularly after reading the article "System 5.0 Update" (November 1989, p. 65), in which the author, Jeff Cable, describes how much faster everthing works, especially AppleWorks GS, when using the new operating system. Any suggestions? Can I remove some of the GS/OS files so that the rest will fit on the AppleWorks GS system disk?

Glen Pierce
Vancouver, WA

The problems you're having with Apple's latest version of the GS operating system (GS/OS version 5.0) seem to be rather common; I've gotten a number of similar inquiries in the last couple of months. Hard-disk-drive owners haven't had many problems other than software incompatibility, because a hard drive has plenty of storage space to accommodate larger system files. Installing the latest GS/OS on individual 3½-inch disks, unfortunately, can be somewhat complicated. Don't even consider using 5¼-inch disks.

First, version 5.0.2 is the very latest edition of GS/OS. Version 5.0 had some disastrous bugs, particularly in BASIC.SYSTEM. If you purchased 5.0, you should obtain the updated version, GS/OS v.5.0.2, free from your dealer. Installing GS/OS v.5.0.2 on your applications' system disks is initially complicated by the fact that not all applications work with the new operating system, particularly those that worked with pre-GS/OS systems. Test compatibility by starting up your GS with the GS/OS System Disk. Then launch the application from the Finder desktop. If it runs, keep reading. If not, forget about installing GS/OS v.5.0.2.

Second, ask the question, "Is my application 8- or 16-bit?" Programs that run on any Apple, including a IIe or IIc, are 8-bit and don't use GS/OS at all. You can update the 8-bit operating system, ProDOS, on those disks. Simply delete PRODOS from your application disk, copy the file named P8 in the SYSTEM subdirectory of your GS/OS System Disk to the application disk, and, finally, rename that copied file to PRODOS. If BASIC.SYSTEM is also on your application disk, replace it with the file on your GS/OS System Disk.

Even if your GS application (16-bit program) works with GS/OS v.5.0.2, it won't necessarily take full advantage of the system's features. The perfect example is ExpressLoad. That GS/OS v.5.0.2 feature greatly accelerates application loading speeds—but only if the application is specifically designed by the software manufacturer to use ExpressLoad. Take note, Glen: AppleWorks GS 2.0 uses ExpressLoad; earlier versions don't. Although you'll see some improvements in the performance of those earlier versions of AppleWorks GS when updated with GS/OS v.5.0.2, faster module loads won't be among them.

Furthermore, some applications include essential, application-specific GS/OS tools, drivers, or other ►

Table. Contents of GS/OS v.5.0.2 System Disk.

Volume: /SYSTEM.DISK/ 1,547 Used Blocks; 46 Free Blocks

Pathname	Blocks	File Type & Description
SYSTEM*	2	Folder; contains most of GS/OS required files
CDEVS**	2	Folder; Control Panel devices for minimum operation
CDEV.DATA**	25	Unknown; list of Control Panel settings
ALPHABET**	10	CP Document; display language translations
DIRECTCONNECT**	11	CP Document; direct-connect printers
GENERAL**	8	CP Document; general system parameters
KEYBOARD**	10	CP Document; keyboard settings
MODEM**	12	CP Document; modem-port settings
MONITOR**	11	CP Document; monitor configuration
MOUSE**	8	CP Document; mouse speed and click rate
PRINTER**	12	CP Document; printer-port settings
RAM*	16	CP Document; RAM-disk configuration
SLOTS**	13	CP Document; slot assignments
SOUND**	10	CP Document; audio pitch and volume settings
TIME**	17	CP Document; time and date
DESK.ACCS**	1	Folder; Apple on menu bar

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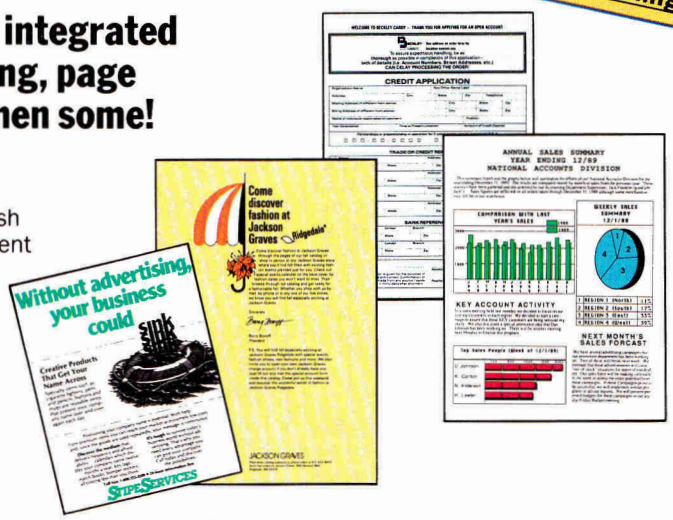

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CTLPANEL.NDA**	43	New Desk Accessory; Control Panel
DRIVERS*	1	Folder; device drivers for GS/OS and Toolbox
APPLEDISK3.5**	12	Device Driver; standard 3.5" 800K disk drive
APPLEDISK5.25**	14	Device Driver; standard 5.25" 140K disk drive
CONSOLE.DRIVER*	1 5	Device Driver; text screen and keyboard
IMAGEWRITER	4 7	Device Driver; Print Manager's driver
MODEM**	6	Device Driver; current modem
PRINTER**	6	Device Driver; current printer
PRINTER.SETUP**	1	Binary; default printer and port drivers
ERROR.MSG*	11	Load File (generic); all GS/OS error messages
EXPRESSLOAD**	25	GS/OS System; fast launches specially prep'd files
FONTS*	1	Folder; GS/OS system fonts
COURIER.10	6	Font
COURIER.12	7	Font
FASTFONT**	57	Binary; preshifted Shaston-8 for QuickDraw
FONT.LISTS	3	Binary; list of fonts for Font Manager
GENEVA.10	6	Font
GENEVA.12	7	Font
HELVETICA.10	6	Font
HELVETICA.12	7	Font
SHASTON.16	1 2	Font
TIMES.10	6	Font
TIMES.12	7	Font
VENICE.14	9	Font
FSTS*	1	Folder; file system translators
CHAR.FST*	5	GS/OS FST; character translator
PRO.FST*	47	GS/OS FST; ProDOS translator
GS.OS*	90	GS/OS System
GS.OS.DEV*	6	Load File (generic); GS/OS device manager
P8*1	32	ProDOS version 1.8 for 8-bit applications
START*2	208	GS/OS Application; Finder version 1.3
START.GS.OS*	26	GS/OS System; GLoader and GQuit
SYSTEM.SETUP*	1	Folder; boot initialization files and routines
CDEV.INIT*	6	Temporary Init. File; Control Panel devices
RESOURCE.MGR*	19	Permanent Init. File; resource file manager
SYS.RESOURCES*	20	GS/OS System; system resources for toolbox
TOOL.SETUP*	1	Permanent Init. File; TS2 loader
TS2*	79	Load File (generic); ROM 01 patches
TS3*	17	Load File (generic); future ROM patches
TOOLS*	2	Folder; toolsets not in ROM
TOOL014*	49	Tool; Window Manager
TOOL015*	35	Tool; Menu Manager
TOOL016*	29	Tool; Control Manager
TOOL018*	43	Tool; QuickDraw Auxiliary
TOOL019*	15	Tool; Print Manager
TOOL020*	20	Tool; LineEdit
TOOL021 *	26	Tool; Dialog Manager
TOOL022*	8	Tool; Scrap Manager
TOOL023*	27	Tool; Standard File
TOOL025**	14	Tool; Note Synthesizer
TOOL026**	10	Tool; Note Sequencer
TOOL027*	27	Tool; Font Manager
TOOL028*	13	Tool; List Manager
TOOL029*	6	Tool; ACE tools
TOOL034**	75	Tool; TextEdit
PRODOS*	4	P8 Application; cold-boot GS/OS launcher
ICONS**	1	Folder; desktop icons
FINDER.ICONS**	22	Icons; for Finder
FINDER.ICONS.X**	12	Icons; addn'l Finder icons for GS with 768K or more
FTYPE.MAIN**	5	File Type Names; used by Finder
FTYPE.AUX**	7	File Type Names; addn'l names for 768K or more GS
BASIC.SYSTEM**	21	P8 Application; BASIC ProDOS interpreter version 1.3
BASIC.LAUNCHER **	3	P8 Application; launches BASIC programs from Finder
APPLETALK**	1	Folder; AppleTalk network files (distributed empty)
TUTORIAL	1	Folder; used by documentation to teach file handling may be deleted from disk at any time
BUDGETS	1	Folder
HOME	1	Folder
CY.1990	1	Unknown
CY.1991	1	Unknown
OFFICE	1	Folder
FY.1990	1	Unknown
FY.1991	1	Unknown
GRAPHICS	1	Folder
AD	1	Unknown
FLIER	1	Unknown
LETTERHEAD	1	Unknown
MASTHEAD	1	Unknown
LETTERS	1	Folder
MR.MERRITT	1	Unknown
MS.BACHTOLD	1	Unknown
TO.FAMILY	1	Folder

Continued

Continued

DAD	1	Unknown
MOM	1	Unknown
TO.FRIENDS	1	Folder
DARRYL	1	Unknown
MOLLY	1	Unknown

* Minimum GS/OS boot folders and files
** May be deleted if disk/RAM space absolutely required and not used by GS/OS application
*1 P8 (ProDOS) required only for 8-bit applications and routines
*2 Boot another GS/OS application in volume directory by renaming Start (to Old.Start, e.g.)

software utilities not found on the GS/OS System Disk. Without them, your application might launch correctly, but lack a commonly used font, for example, or possibly "crash" at some inopportune moment. For those reasons and others, I generally recommend you purchase updated versions of your applications, if available. Updates are usually free or obtained for a nominal fee.

Those of you who insist on forging ahead and updating your current versions to GS/OS v.5.0.2, good luck. I haven't had much luck with the System Tools Installer program, particularly when space on the target disk is at a premium. Rather, I've found it's easier to make a copy of the System Disk, compare its files with those on the disk you want to update, remove extraneous files from that new System Disk, and copy the original application's special system and program files. Refer to the accompanying ***Table*** *for the contents of the GS/OS System Disk and pay particular attention to those files that are essential versus those you can remove to allow additional disk space for your application.*

For Glen's benefit, here's the process I used to create a new AppleWorks GS System Disk for a system with 5¼- and 3½-inch disk drives and an ImageWriter II printer:

1. Copy the GS/OS version 5.0.2 System Disk, then start up the Finder desktop.

2. Delete the BASIC.System, BASIC.Launcher, AppleTalk, and Tutorial files and folders from the volume directory of that new System Disk.

3. Delete the P8 and Fonts files and folders from the System subdirectory; delete TOOL34 from the System/Tools folder; and delete SCSI.Mgr, Unidisk3.5, and ImageWriter from the System/Drivers folder on that new System Disk.

4. Copy the following files and folders from the original AppleWorks System Disk to your new System Disk: System/Tools/TOOL32, System/Drivers/ImageWriter.CL, System/Fonts, and Icons/AWGS.Icon.

5. Rename that new System Disk to AWGS.System.5 or some equivalent so that you'll be reminded that it's specific for AppleWorks GS.

6. AWGS.System.5 just fits on an 800K disk with about 2K to spare. If you need additional space for other printer drivers, for example, try deleting more "nonessential" files, such as ExpressLoad, as indicated in the ***Table****. Also, I suggest you use the Installer program on the System Tools disk to install those additional devices, such as printers, because they often require more than just one driver file.*

IIc RGB Video

WHERE CAN I FIND AN RGB interface for the Apple IIc? I have a Magnavox monitor that will accept both TTL-digital and -analog inputs.

Ewald Quick
Dearborn, MI

Telemax (780 Lorraine Drive, Box 339, Warrington, PA 18976, 215-343-3000) makes the only Apple IIc RGB video interface I'm aware of. For $149, the company will send you a module that plugs directly into your IIc's video-expansion connector and supplies TTL-digital RGB video through a nine-pin connector commonly found on IBM PC and PC-clone video interfaces. Telemax will also include a cable, although yours will work just fine.

The folks at Telemax aim to please; for instance, on request, they'll "pad" the TTL-digital video signals to 1 VDC at 75 ohms so that you can use a GS-like analog RGB monitor with your IIc. Best bet: Give the support people at Telemax a call and tell them which monitor you'd like to connect to your IIc. Then let them configure the RGB interface to best suit your needs.

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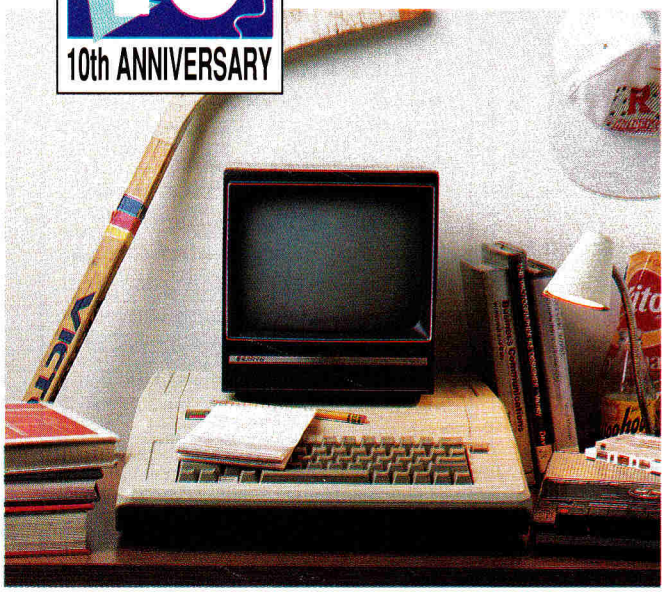

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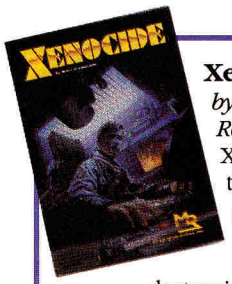

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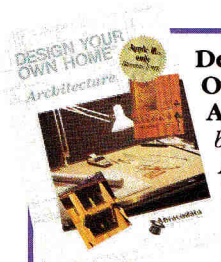

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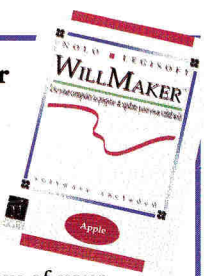

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REVIEWS

INCIDER'S RATINGS

0 Unacceptable 5 Adequate 10 Exceptional

REVOLUTION '76

BRITANNICA SOFTWARE,
345 Fourth Street, San Francisco, CA 94107,
(800) 572-2272, (415) 546-1866

Historical simulation;
1.2-megabyte Apple IIGS, RGB monitor;
two 3½-inch drives recommended; $49.95

9

0 5 10

For whatever reason, American history never grabbed me the way ancient history did. Somehow, the thought of scruffy Minutemen taking potshots at the British redcoats never seemed as inspirational or as heroic as the epic battles between the Normans and the Saxons. Nor did the Revolutionary War as a whole bring with it the pageantry of the Crusades, the glory of Alexander's Greece, or the grandeur of Caesar's Rome. It wasn't until I sat down for a session with Revolution '76 that I began to appreciate the difficulty of the struggle for our nation's independence and the ramifications of something as "trifling" as the Boston Tea Party.

INDEPENDENCE DAY

Read the well-written player's reference manual before starting Revolution '76, because the depth of the game prohibits jumping in with both feet. Once you start the game, you're treated to a rousing patriotic tune and a picture of the Boston Tea Party; then the work begins.

The Second Continental Congress is in session and you must appoint heads of the treasury, the foreign-affairs department, the army, and the navy right away. You'll make your selections from an array of actual politicians of the era, representing all the various factions and regions of the original colonies. Each politician's attributes are rated from poor to excellent.

You'll get an immediate lesson in politics and an appreciation for the fragile balance of the period if you neglect to appease all quarters. Select too many radical party members and the moderates will protest and possibly withdraw their support for your fledgling government. Ignore a geographic region when handing out positions of leadership and you'll find yourself with a rapid increase in Tory activity in the slighted area.

Few aspects of government are ignored in the early going. You must make decisions and establish policies to shape your emerging leadership. You determine when to declare independence from England, how to deal with the slave population in the colonies, how to implement economic reforms, and when to establish an executive branch to facilitate the governing process.

In each case you have a number of directions to take—and in each case your decision has an immediate effect on the game. For instance, something that seems as simple as declaring your independence will alienate moderates if poorly timed. The longer you wait, however, the longer you do without the backing of European countries who refuse to recognize vassal colonies.

After you've completed your "opening moves," your tasks will double. Having established your government, you must now make it work. You need to raise money to fund the Continental Army and the navy. You have to ►

"Elegant, innovative, flexible and in all aspects the leader of the field." — *Incider Magazine*

Accolades continue to pour in. Vulcan hard drives were recently awarded FIVE stars by Incider Magazine, a rating reserved for products judged "excellent and remarkable". Incider went on to say, *"The Vulcan sets a new performance standard for hard drives . . . Applied Engineering has done it again."*

Hard drives tremendously boost your productivity. The Apple II's operating system, hardware and memory-gobbling software take on a new agility and finesse with the addition of a hard drive.

Speed? The IIGS Buyer's Guide put it this way, *"Everything this drive does is fast. TimeOut modules, installed in AppleWorks and configured as disk-based, came up as fast as if they were memory-based. Graphics load almost immediately. Even that damnable lie, 'One Moment Please' suddenly delivers its promise. We recommend the Vulcan wholeheartedly."*

And Incider said, *"The Vulcan walks all over the competition. Twelve seconds to the GS Finder; 10 seconds to AppleWorks GS. Sounds good doesn't it? It is. That sizzling speed is achieved thanks to a high-quality internal tracking unit."* Vulcan incorporates an ultra-fast 16-bit data bus controller, not the less expensive 8-bit others use.

Features? As Nibble Magazine said, *"AE drives support more operating systems and have more features in the supporting software."* And Incider added, *"Applied Engineering has put together the most complete set of utilities to date for an internal hard drive that leads the market."* And since Vulcan's made by Applied Engineering, you're assured of full compatibility with current and future AE products.

Power? Vulcan's high-efficiency power supply is rated in excess of 70 watts, *nearly double* the capacity of other hard drives. The power supply components are heatsinked to the aluminum case for cool operation and long life. To harness all that power, Vulcan incorporates an ultra-quiet, flush mounted cooling fan, keeping the temperature inside the Vulcan, and inside your Apple lower than before.

Flexibility? Choose a Vulcan from 20, 40, 100 — all the way to 200 MEGs. Upgradeable Vulcan grows as your needs grow. And we don't mean by daisy-chaining additional hard drives. When you upgrade Vulcan, you pop one out and *replace* it with another.

Only Vulcan lets you use virtually any operating system: GS/OS (v5.0 is included), ProDOS 8, DOS 3.3, CP/AM or Pascal 1.3. Vulcan supports them all with sixteen partitions (access four simultaneously). Choose slot 1, 2 4, 5, 6 or 7. Even pseudo-slot to slot 7 from elsewhere. Vulcan works on 110/220 VAC, even European 115/230 VAC at 50-60 Hz.

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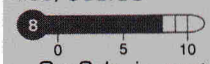
AT A GLANCE

GeoCalc (by Tim Walsh, March 1990, p. 30), Berkeley Softworks, 2150 Shattuck Avenue, Berkeley, CA 94704, (415) 644-0883; 128K Apple IIe, IIc, IIc Plus, IIGS; $69.95

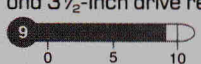


GeoCalc is another GEOS (Graphic Environment Operating System) program making inroads into the arena of productivity software for the Apple II. It includes a separate graph generator (geoChart) for the GEOS environment and is packaged much like geoFile—with four disks, a copy of GEOS, and an interrupt-manager card.

In most respects, geoCalc behaves like a normal spreadsheet; it's just a bit slower. The loss of speed is a result of the updating and redrawing of geoCalc's bit-mapped graphics screens. The advantages of operating in a point-and-click graphics environment outweigh the sacrifice in speed, though.

A full range of mathematical, statistical, financial, scientific, trigonometric, logical, and user-defined functions are included. Choosing any of these functions for placement in a cell is as easy as clicking on the *Choose Function* option from the Formula menu.

ORCA/C (by Ron Berntson, March 1990, p. 36), Byte Works, 4700 Irving Boulevard NW, Suite 207, Albuquerque, NM 87114, (505) 898-8183; 1-megabyte Apple IIGS, one 3½-inch drive (second 3½-inch drive recommended); $150



ORCA/C gives you a choice of two environments for program development—the Macintosh-style desktop and the 80-column text screen. The C beginner should start with the desktop; at its simplest level, you'll use it for entering and editing program code, and as a word processor for programming it serves nicely. The desktop also includes special features for editing code, and the screen updates swiftly.

Continued

handle the Tories—tolerating them, prosecuting them, or persecuting them.

You'll deal with privateers, too. Encourage them and you guarantee that British naval power will be harassed, but doing so will deplete the manpower available for your own militia and navy. You'll also send a statesman to European countries with which you hope to form alliances. Will you choose Benjamin Franklin or John Adams?

By now you're probably a bit overwhelmed by the complexity of Revolution '76—and you should be. After all, did you think establishing a new country would be a simple task? Fortunately, though, the depth of Revolution '76 doesn't translate into a difficult game to play. Thanks to a layered programming approach featuring a multiwindow interface, all aspects of the game are presented in logical order and are clearly defined. A game turn consists of a number of phases, ranging from political to economic to military. The events of previous turns help dictate the course of action you must take in subsequent turns.

You make all your choices with the mouse. Click on the mid-Atlantic section of the map to activate it, slide the pointer over to the dollar-sign icon, and click—you've just raised the taxes in that region. Playing Revolution '76 is that easy; playing it well is more difficult.

THE REDCOATS ARE COMING

Though it should be obvious by now that Revolution '76 is much more than just a war game, probably no other aspect has as much impact on the outcome of the game as the battles fought during the course of play. Winning boosts morale, encourages support from your European allies, swings borderline moderates over to the cause, brings in added revenue, and gains new recruits for both the regular army and the local militia. Losing brings about the opposite result.

Combat is fought in the abstract; your decisions are strategic as opposed to tactical. You must decide how to allocate and supply your troops and which general to put in charge; you'll always know where the redcoats are heading and in what number. With a little experience, you'll soon get a feel for the type of force, the level of training, and the numbers of supplies necessary to make you victorious.

Keep in mind when dealing with the combat side of Revolution '76 that this war—at least in its early stages—consisted of hit-and-run tactics. You can't afford to squander your manpower in the first military confrontations and expect to still have a large army in the latter stages of the game. Retreat if you're badly outnumbered and fight only when you stand a good chance of winning.

INTO THE FRAY

One word of warning: The game's a tough play if you have only one 3½-inch drive. The amount of disk swapping required with a single drive is mind-boggling. You can alleviate that by turning the sound off, but the music and sound effects help establish the mood of the game and are definitely a loss if eliminated. A better solution is to hook up a second drive.

You can install Revolution '76 on a hard drive if you have one. The program uses off-disk copy protection by asking you to select the correct word from a random page, paragraph, and sentence in the *Historical Perspective* booklet that accompanies the game.

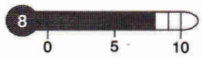
Revolution '76 succeeds on all counts. It truly simulates all aspects of the American Revolution; it challenges your military, economic, and diplomatic savvy; it's esthetically pleasing as it takes full advantage of the GS' capabilities in graphics and sound. Not only did Revolution '76 entertain and challenge me more than any other recent GS program, it also did more to aid my understanding of the birth of our country than did any of my high-school or college American-history courses. That's quite an accomplishment for a piece of software.

Jim Trunzo
Leechburg, PA

STORYWORKS

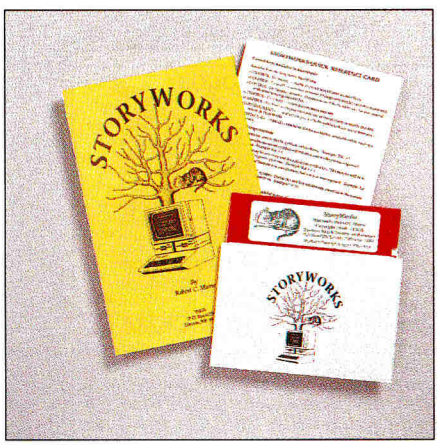
TEACHERS' IDEA AND INFORMATION EXCHANGE, P.O. Box 6229, Lincoln, NE 68506, (402) 483-6987

Construction kit for multimedia AppleWorks files;
64K Apple II, AppleWorks Classic; $49.95



It seems there's no end to AppleWorks' adaptability. Thanks to an innovative new classroom program from the Teachers' Idea and Information Exchange (TI&IE), this versatile 8-bit package, running on a mere 64K, is venturing into the hottest new area of technological development currently on the market—*hypermedia*. StoryWorks, by Robert C. Moore, lets you construct a "stack"—a complete file combining text, sound, and simple ►

line graphics—within AppleWorks. Create individual segments of a lesson or test with the word processor and assign a number to each with AppleWorks' *Set a Marker* command; add one or more Hypertext-style "buttons" to join segments. Students jump from segment to segment by activating a button—pointing and clicking with a mouse or typing a specific key.



"Hypermedia" for the 64K Apple II.

The HyperCard metaphor is appropriate because StoryWorks—like its Macintosh cousin—is a powerful information-management system that doubles as a specialized program launcher. StoryWorks lets you create branching worksheets, tests, seating charts, and stories complete with sound effects; when students read a StoryWorks file, they can select an embedded button for immediate access to related topics, glossaries, bibliographies, or sets of questions.

Learning follows a nonlinear path as youngsters select topics of interest; they can review subjects as needed and explore files in any order that makes sense to them. The advantage for teachers is that StoryWorks' tools facilitate the creation of lessons customized for particular classroom needs—even automatic calculation of test scores.

Over the years, TI&IE has collected and published a variety of AppleWorks word-processor, spreadsheet, and database applications designed to facilitate the educational process. The group is a nationwide organization of teachers, administrators, librarians, and computer coordinators who exchange ideas for using AppleWorks files and templates to streamline classroom and administrative procedures; in terms of creativity and innovation, StoryWorks has to rank at the top of the list.

The StoryWorks construction kit consists of eight AppleWorks word-processor files. The file titled A.First.Look briefly explains how the program works; others, such as The.Civil.War, Civil.War.Quiz, and Treas.Mystery, give you a glimpse of the program in action. Eighty .Column demonstrates incorporation of simple diagrams into a StoryWorks file.

Another special template, called Stack-Starter, simplifies the process of creating StoryWorks files, each containing several related segments, linking buttons, and transfer directives. StoryWorks files can read text, follow directives issued within AppleWorks, and generate a variety of sound effects, linking individual segments of text with a variety of sounds to create a single multipart story. (Unlike HyperCard, StoryWorks can't incorporate bit-mapped graphics or link text and sound with video images.) Each StoryWorks segment can be up to 2700 words long.

The button system is useful for amplifying electronic lessons with optional in-depth information. For example, if you decide to write a stack about the solar system, you could list each planet by name, followed by a letter enclosed in braces (for example, *Mercury {M}*). Students reading the stack could learn more about Mercury simply by typing the letter *M*. Students who are already knowledgeable about Mercury could go on.

StoryWorks comes with 26 sound effects, each associated with a letter of the alphabet. A special "sound sampler" file on the StoryWorks disk lets you audition them. Most are tones simulating an outer-space or shoot-'em-up motif. You'll hear a laser gun, a spaceship, a falling bomb, and a UFO flying overhead; remaining beeps and buzzes make a distinct arcade-like impression, with names like Zap!, Whoops!, Oh No!, and Rebound (which sounds like a bouncing ball).

Pressing Control-S at the main menu toggles the sound on or off. When running the program on an Apple IIGS or a IIe equipped with an accelerator card, set system speed to *Normal* to hear the sounds as the author intended them—otherwise the tones may seem abbreviated or high-pitched.

StoryWorks includes an instruction manual with well-written guidelines for designing stacks and a quick-reference card with a summary listing of control keys, special target symbols, and keyboard options you won't be able to use as buttons.

Directions for creating new stack files are ►

Continued on p. 76

At a Glance

Continued

Once you've mastered some C, you might want to switch to the text-screen environment. It's somewhat less "user friendly" than the desktop, and it doesn't include many of the desktop's debugging features. Many experienced programmers prefer the text environment, however, because it's faster and you can customize it. It's useful to have the choice.

Pow! Zap! Ker-plunk! (by Carol Holzberg, March 1990, p. 32), Pelican Software, 768 Farmington Avenue, Farmington, CT 06032, (203) 674-8221; 128K Apple II family; color monitor and printer recommended, mouse optional; speech requires Echo Board or Cricket speech synthesizer on Apple IIe/IIc; $39.95 (retail); $49.95 (school); $19.95 (add-on art disks)

Creating a comic book with Pow! Zap! Ker-plunk! is simple. Youngsters begin by selecting a background from any of seven categories, each containing a range of choices—street scenes, a zany spaceship interior, outdoor settings, a principal's office, and a template for a newspaper masthead, to name a few.

Youngsters start building their comic panels by adding various components. They can choose graphics from a selection of categories—heroes, heroines, creatures, villains, funny characters, and special effects, for instance. They can also insert speech bubbles and text boxes to spice up the presentation.

Next, kids press the spacebar to view the clip-art choices within that category. The arrow keys (or the mouse) move the graphic to a desired location.

Youngsters can print their stories or comic panels in six different formats—miniature, tall, short, skinny, standard, and poster size. They can print the text of the accompanying stories in one of four font choices (small, medium, fancy, or slant), but they can't mix fonts within a story. □

End

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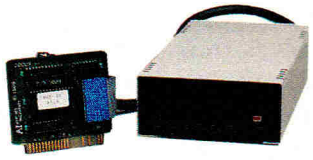

TELINK GOLEM

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If you're looking for a reliable, easy-to-use, low-cost 2400 baud Hayes-compatible modem you can stop looking. Compare the TeLink to any other modem on the market. You won't find a better value at any price. Because we've taken the best technology, and rolled it all into a neat package. We started with the best modem chip set you can buy, the Rockwell RC224AT. What that means for you is simple. You'll have better connections, more of the time, with exceptional data accuracy for fast, reliable communications. We understand what it means to have your modem work with any software, the first time, just like Hayes. That's why we made sure that TeLink is more than just "Hayes compatible." The result? The TeLink is compatible with every Hayes AT Command, every Hayes Dial Command, and every Hayes S-Register. TeLink has an on-board non-volatile memory to store your modem setup and frequently called numbers. We also have superior call progress tone detection, phoneline impedance matching a quality speaker and high-power amplifier.

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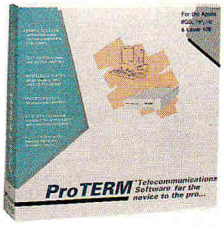

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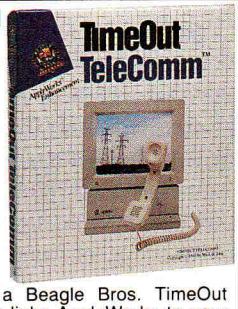

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APPLIED ENGINEERING
READY LINK 71.
BEAGLE BROS. Timeout Graph 52.
Designworks Accessories (IIGS) 35.
Timeout-Superfonts, Quickspell, Telecom ea. 45.
Timeout-Filemaster, Sidespread, Power Pack, DeskTools II, Thesaurus Desktools ea. 31.
Timeout-Reportwriter 48.
Timeout-Ultramacros, Spreadtools ea. 35.
Timeout-Macrotools, Macrotools II ea. 18.
Point to Point 68.
GS Font Editor, Program Writer ea. 31.
Performance Pack 73.
Style Pack 86.
Decision Pack 99.
BIG RED COMPUTER
PS Lovers (IIGS,IIe/IIc) ea. 27.
Labels, Labels, Labels 27.
BYTE WORKS ORCA/C, Pascal (IIGS) ea. 88.
ORCA/Desktop (IIGS) 38.
ORCA/M 1.1 42.
CENTRAL POINT Copy Two Plus 25.
CHECKMATE TECHNOLOGY Proterm 79.
MICOL Advanced BASIC (IIGS) 95.
Q LABS EASY DRIVE 54.
RAMUP 30.
Repair Works, SuperPatch ea. 30.
ROGER WAGNER Merlin 8/16(PRO DOS) 79.
Softswitch (IIGS) 40.
Graphix Exchange (IIGS) 32.
Hyper Studio (IIGS) 89.
Macromate (IIGS) 33.
SEVEN HILLS Font Factory 27.
Disk Access 32.
TERRAPIN Logo Plus 90.
TML Pascal II (IIGS), Basic (IIGS) ea. 83.
Source Code Library (IIGS) 32.
Speech Toolkit (IIGS) 46.
VERSACAD CAD Apple 66.
CAD Apple Professional 260.
VITESSE Salvation 32.

BUSINESS

BEAGLE BROS. BeagleWrite GS 62.
BeagleWrite Picture Manager 31.
BeagleWrite Font Library GS (IIGS) 25.
APPLEWORKS 3.0 COMPANION 27.
BRODERBUND Bank Street Writer Plus 47.
On Balance 39.
CLARIS Appleworks GS V1.1 195.
Appleworks V3.0 170.
DAC SOFTWARE DAC-Easy Accounting 60.
MANZANITA Payroll 109.
Business Works (ProDos) 267.
SENSIBLE SOFTWARE
Sensible Speller IV 68.
Sensible Grammar Checker 55.
SEVEN HILLS Graphics Writer III 85.
STONE EDGE
DB MASTER PROFESSIONAL 190.
TIMEWORKS Swift Tax 47.
Publish It 2 74.
Font Pack I, II, Symbols & Slogans, People, Places & Things ea. 27.
4 in 1 Portfolio 80.
Design Ideas, Education ea. 27.
Graph It 47.
WORDPERFECT
Wordperfect (IIGS), (IIe/IIc) ea. 110.

HOME/PERSONAL

ABRACADATA Design Your Own Home Architecture (IIGS), Interior (IIGS) ea. 59.
Landscape (IIGS) 59.
Libraries ea. 22.
ACTASOFT Alpha Check 32.
BEAGLE BROS. Beagle Draw GS 53.
Beagle Draw GS Clip Art (IIGS) 31.
BRODERBUND The Print Shop 29.
The Print Shop (IIGS) 40.
The Print Shop Library (IIGS)-Sampler, Party ea. 23.
The Print Shop Library 1, 2, 3 ea. 15.
DAZZLE DRAW 40.
ELECTRONIC ARTS Deluxe Paint II (IIGS) 65.
Instant Synthesizer (IIGS) 56.
INTUIT Quicken 40.
MECA Managing Your Money 89.
MECC Calendar Crafter 33.
MEDIAGENIC/ACTIVISION
Paintworks Plus (IIGS) 46.
Paintworks Gold (1.25MB Req.) 66.
Draw Plus (IIGS), Music Studio (IIGS) ea. 59.
Paint, Write, Draw Bundle (IIGS) 80.
MINDSCAPE Certificate and More 32.
NOLO PRESS Willmaker 39.
UNLIMITED SOFTWARE
Things You See Everyday (IIGS) 53.
Old Fashioned Variety (IIGS) 33.
LIFE SCIENCES (IIGS) 93.
A World of Symbols (IIGS) 20.

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BARRON'S Study Program For SAT V2.0 32.
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Music Writer Level 2 (IIGS) 200.
Music Writer Level 3 (IIGS) 400.
THE LEARNING COMPANY
Reader Rabbit (IIGS) 36.
Writer Rabbit, Think Quick, Rocky's Boots (IIe/IIc/IIGS) ea. 30.
Math Rabbit, Reader Rabbit, Gertrudes Secrets, Magic Spells (IIe/IIc/IIGS) ea. 26.
CHILDREN'S WRITING PUBLISHING CENTER (IIE/IIC, IIGS) ea. 40.
UNICORN SOFTWARE (IIGS Only)
All About America, Read A Rama ea. 40.
Math Wizard, Animal Kingdom ea. 33.
WEEKLY READER Sticky Bears - ABC's, Basketbounce, Bop, Math, Math II, Numbers, Shapes, Opposites, Reading ea. 24.
Sticky Bears - Basics, Drawing, Music, Music Library, Parts of Speech, Printer, Reading Comprehension, Spellgrabber, Town Builder, Typing, Word Problems ea. 30.
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Shapes (Talking, IIGS) 30.
Opposites (Talking, IIGS) 30.
ABC's Talking (IIGS) 30.

ENTERTAINMENT

ACCOLADE Mean 18 (GS) 30.
Blue Angels (IIGS) 32.
Grand Prix Circuit (IIGS) Heat Wave (IIGS) ea. 30.
The Third Courier (IIGS) 32.
Jack Nicklaus Golf (IIGS) 32.
Test Drive II (GS), Hardball (GS) ea. 30.
Test Drive (IIe/IIc), Bubble Ghost (IIGS) ea. 23.
California Challenge (IIGS) 16.
The Super Cars (IIGS), Muscle Cars (IIGS) ea. 16.
European Challenge (IIGS) 16.
4th & Inches, Serve & Volley (IIGS) ea. 27.
ARTWORX Strip Poker (GS) 27.
Bridge 6.0 22.
BRITANNICA Gnarley Golf (IIGS) 20.
Laser Force 20.
TASK FORCE (IIGS) 27.
Great Western Shoot-Out (IIGS) 20.
BRODERBUND Wings of Fury 23.
Prince of Persia 24.
Dark Hart of Uukrul 32.
Ancient Land of YS (IIGS) 30.
Ancient Art of War at Sea 27.
CASADY & GREENE
Crystal Quest (IIGS) 32.
CINEMAWARE King of Chicago (IIGS) 32.
Defender of the Crown (IIGS) 32.
Rocket Ranger (IIGS) 32.
Three Stooges (IIGS) 32.
ELECTRONIC ARTS Bard's Tale (IIGS) 17.
Cribbage King/Gin King (IIGS) 40.
Reach for the Stars (IIGS) 27.
Cartooner (IIGS) 40.
Bard's Tale II (IIGS) 32.
Bard's Tale II, III ea. 32.
Hunt For Red October (IIGS) 32.
Hunt for Red October (IIe/IIc) 27.
John Madden Football (IIe/IIc) 32.
Keef the Thief (IIGS) 33.
Tomahawk (IIGS), Zany Golf (IIGS) ea. 27.
Halls of Montezuma (IIGS) 30.
Marble Madness (IIGS), Yeager's AFT Skate or Die (IIGS) ea. 17.
Chessmaster 2100 (IIe/IIc, IIGS) ea. 32.
LIFE & DEATH (IIGS) 32.
F.T.L. Dungeon Master (IIGS) 27.
MASTERTRONICS
War in Middle Earth (IIGS) 32.
Barbarian (IIGS) 27.
MEDIAGENIC/ACTIVISION
Battletech 32.
The Quest for Excalibur 27.
Neuromancer (IIGS) 30.
Battlechess (IIGS) 30.
MICROPROSE Pirates (IIe/IIc, IIGS) ea. 26.
Red Storm Rising 27.
MICRO REVELATIONS
Xenocide (IIGS) 30.
MINDCRAFT Magic Candle 32.
Keys of Maramon (IIGS) 32.
MINDSCAPE Balance of Power (IIGS) 32.
Paper Boy, Paper Boy (IIGS) ea. 25.
Captain Blood (IIGS) 30.
Hostage (IIGS) 27.
ORIGIN Omega (IIGS) 32.
Ultima Triology, Ultima IV, V ea. 40.
Windwalker, Times of Lore ea. 27.
Tangled Tales 20.
Space Rogue 32.
PELICAN Pow! Zap! Kerplunk! 29.
POLARWARE
All Dogs Go To Heaven 26.
SIERRA ON-LINE King's Quest I, II, III ea. 31.
Gold Rush (IIGS), Black Cauldrun (IIGS) ea. 27.
Thexder (IIe/IIc, IIGS) ea. 24.
King Quest I, II, III, IV (IIGS) ea. 32.
Space Quest I,II (IIGS) ea. 32.
Leisure Suit Larry (IIe/IIc, IIGS) ea. 26.
Police Quest (IIGS), Manhunter NY (IIGS) ea. 32.
Silpheed (IIGS) 33.
Dragon's Keep 22.
Manhunter San Francisco (IIGS) 32.
SIR-TECH Wizardry 5 32.
Return of Werda 39.
Wizardry Trilogy 32.
SPECTRUM TETRIS (IIE, IIGS) ea. 25.
SSI
Adv. D & D - Pool of Radiance (IIGS) 32.
Adv. D & D - Pool of Radiance (IIe/IIc) 30.
Adv. D & D - Curse of Azure Bonds (IIe/IIc) 30.
Adv. D & D - War of the Lance (IIe/IIc) 30.
Adv. D & D - Dungeon Master Asst. I, II ea. 30.
SUBLOGIC Flight Simulator II 32.
Scenery Disks 1 thru 6 ea. 18.
TAITO Arkanoid II (IIGS) 24.
Bubble Bobble (IIe), Qix (IIGS) ea. 24.
Rastan (IIGS) 24.
THREE-SIXTY SOFTWARE
Dark Castle (IIGS) 30.
Warlock (IIGS) 28.
VICTORY SOFTWARE
2088: The Cryllan Mission (IIGS) 34.

HARD/FLOPPY DISK DRIVES

AMERICAN MICRO
3½ Drive (IIGS, IIc+) 187.
CHINOOK Apple SCSI, Software
CT-20 (IIe, IIGS) 592.
CT-40 (IIe, IIGS) 715.
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CT-40C (IIc/IIc+) 785.
APPLIED ENGINEERING
Vulcan Hard Drive 20MB 587.
Vulcan Hard Drive 40MB 734.
5¼ Drive (IIc/IIe, IIGS) 111.
Trans Drive Dual 286.
Trans Drive Single 195.
INGENUITY
InnerDrive 20MB (IIe, IIGS) ea. 486.
InnerDrive 40MB (IIe, IIGS) ea. 612.
InnerDrive 100MB (IIe, IIGS) ea. 1218.
Overdrive 20MB (IIe, IIGS, Laser) ea. 440.
Overdrive 40MB (IIe, IIGS, Laser) 525.
C Drive 20MB (IIc Inter) 530.
C DRIVE 40MB (IIC INTER) 655.
VCR Hard Disk Backup 150.
Falcon 10MB (Laser, IIe) 285.
LASER COMPUTER
External Disk Drive (5¼" Laser) 90.
External Drive (¼" IIc/IIe) 95.
External Disk Drive (3½" Laser) 185.
Universal Disk Controller 45.
External Disk Drive (5¼ Daisychainable) 125.

MEMORY & INTERFACE

APPLIED ENGINEERING
Audio Animator 178.
Ram Works III 512K (IIe) 163.
Ram Works III 1MB (IIe) 214.
GS-Ram PLUS 1MB 235.
GS-Ram PLUS 2MB 338.
GS-Ram PLUS 3MB 440.
GS-Ram Ultra 1MB 235.
GS-Ram Ultra 512K 238.
Trasnwarp III (II+, IIe) 147.
Ram Express 512K (IIc+) 209.
Ram express 1MB (IIc+) 260.
Serial Pro (II+, IIe, IIGS) 106.
Parallel Pro, Timemaster HO ea. 73.
PC Transporter 768K 367.
Installation Kit (IIGS) 39.
Installation Kit (IIe) 31.
RamKeeper 139.
Sonic Blaster 95.
Transwarp GS 289.
CHECKMATE Memory Saver (IIGS) 102.
Multi-Ram GS OK 84.
MULTI-RAM RGB OK (IIE) 105.
DIGITAL VISION Computer Eyes (IIGS) 200.
Computer Eyes (IIe) 116.
INGENUITY GS Juice Plus 1MB 165.
GS Juice Plus 2MB 240.
C Keeper 256K (IIGS) 155.
C Keeper 1MB (IIc) 312.
MEMORY DRAM Call
ORANGE MICRO
Grapler 9 pin. Grapler + ea. 76.
THIRDWARE Fingerprint GSI (IIGS) 79.
THUNDERWARE Thunderscan 153.

MODEMS

APPLIED ENGINEERING Datalink 2400 178.
DATALINK EXPRESS EXT. W/SOFT 183.
MNP Option 66.
SUPRA 2400 External 120.
2400 External w/cable/software 180.

COMPUTERS

LASER COMPUTER Laser 128E 370.
Laser 128EX 410.
Laser 128EX/2 (5¼" Drive) 445.
Laser 128Ex/2 (3½ Drive) 490.

MONITORS

LASER COMPUTER
Amber, Green Monitor ea. 105.
MAGNAVOX
RGB/Composit (CM8762) 260.

ACCESSORIES

APPLIED ENGINEERING Conserver 73.
APPLIED INGENUITY GS Keyboard 150.
BLANK MEDIA (Bulk) Call
CH PRODUCTS Flight Stick 50.
Mach III w/fire Button (IIe/IIc, IIGS) ea. 34.
KENSINGTON System Saver (IIGS) 69.
Turbo Mouse ADB (IIGS) 115.
Anti-Glare Filter (IIGS) 34.
KURTA IS/GS Tablet w/Stylus 258.
LASER COMPUTER Mouse 45.
Expansion Box 55.
Cables - Parallel, Serial, RGB, Modem ea. 16.
Joystick 20.
Monitor Stand 27.
PASSPORT DESIGN MIDI Interface IIGS 92.
RIBBONS Imagewriter II, (4 Colors) 8.
Imagewriter (Black, Red, Brown, etc.) ea. 4.
VITESSE QUICKIE (IIGS) 203.

PRINTERS

LASER COMPUTER
190A (ImageWriter I Compatible) 235.
PANASONIC KX P1124 (80cps/24pin) 340.
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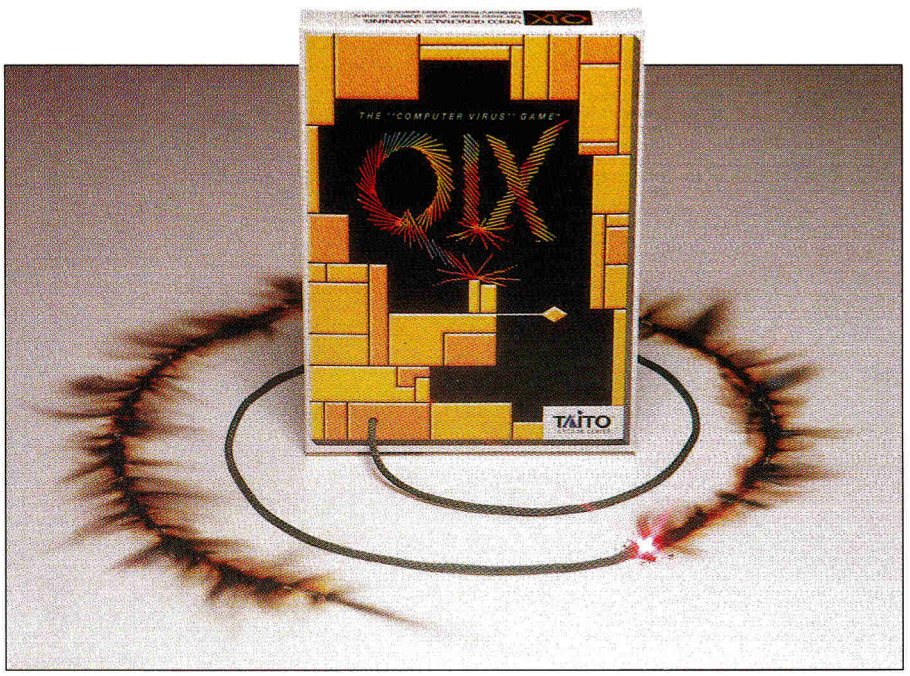


QIX

Taito,
267 West Esplanade, North Vancouver, BC,
Canada V7M 1A5, (604) 984-3344

Arcade action;
128K Apple II, joystick required; $29.95

5
0 5 10

The Qix is an evil and terrifying computer virus," according to Taito, but it looks like a handful of digital pick-up sticks living on your screen. The Qix moves, but doesn't grow.

Your job is to isolate the Qix virus in as small a corner of the screen as you can. You're a single point of light, moving along the perimeter of the display. You have to leave the safety of that area and draw rectangles that limit the Qix's wanderings—but you do so at great peril. If the virus touches you, you die—it's a pretty serious sickness. You don't have all the time in the world, either. Qix has no time limit, but Sparxes and Spritzes—young virus offspring—are chasing you all the while, so you have to keep moving.

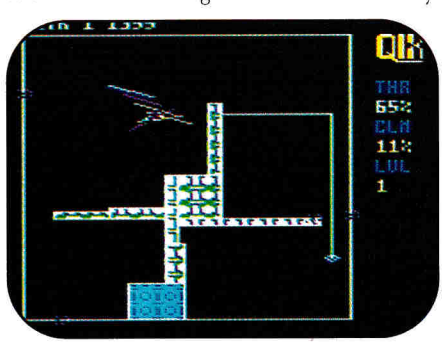
I hear that some engineering students at MIT and Cal Tech have developed algorithms for playing Qix—don't send 'em to me, guys. What probably intrigues the members of the Loyal Order of the Pocket Protector, aside from Qix's "computer-crime simulation," is that there are—we won't deny it—numerous strategies for isolating the Qix and avoiding the Spritz. I never calculated a winning strategy or really cared to, however, which is odd, because I usually enjoy strategy games.

The range of Qix strategies seems pretty limited: Don't try to box out the entire screen at once; do it a bit at a time. The best way to beat Qix, I found, is to pile boxes on each other like presents under the Christmas tree. Your point of light is never far from safety.

Maybe my joystick hand was too slow. Some players like the combination of strategy and speed—Qix is like a hair-raising game of chess in which you have to move in five seconds or lose your turn. It just made me nervous.

If calculating strategies in the face of destruction is your idea of fun, Qix is fun. I didn't enjoy the experience. Perhaps it's because Qix wastes a lot of time between games on title screens and introductions. Game play is fast, but it really annoys me to wait while lights spin above the board.

Qix's joystick-calibration schemes never seem to quite cut it. Perhaps my Suncom joystick—which never gave me trouble in any joystick-dependent game, such as Prince of Persia—is unusual for whatever reason. I sure wish I could have switched to a mouse.



No cure for what ails you.

I expected to like Qix more than I did. It's a good game, but not great. I got bogged down in the details of playing it and never got out—maybe the forthcoming GS version will help.

Paul Statt
***inCider* staff**

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TIP SHEET

Arkanoid fans, rejoice. Thexder fans, rejoice. Bard's Tale, Questron II, and Last Ninja fans, rejoice, too—**Cheatmaster**'s here.

Cheatmaster's a simple-to-use program that'll go a long way toward making life a little easier when you play the games mentioned above.

The Arkanoid and Thexder cheats install as classic desk accessories (CDAs).

When you're down to your last vaus in Arkanoid, for instance, press Control-Open apple-Escape for salvation: The CDA menu appears, where you can select *Arkanoid helper*, then go back to the game. You won't see your extra ships right away, but after you lose that last vaus, they'll show up.

The Thexder cheat gives your energy level a much-needed boost—you can toggle into an easy mode in which you lose energy points in increments of one instead of two.

The Bard's Tale and Bard's Tale II cheats simply let you enhance the various attributes of your characters.

For Questron II, you can change the quantity of any weapon, piece of armor, or miscellaneous item you're carrying.

In The Last Ninja, you can give yourself a virtually unlimited supply of shuriken stars, smoke bombs, and lives for any saved game.

The Cheatmaster package requires a GS with 768K and at least one 3½-inch drive. You can get Cheatmaster directly from the author, Martin Hill, for $20 (U.S.). Write to 32 Chelford Road, Toronto, Ontario, Canada M3B 2E5.

If you play any of these games regularly, it'll be the best 20 bucks you've ever spent—it's worth it for the Arkanoid cheat alone.

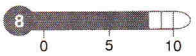
Remember, keep those hints coming. Write to Tip Sheet, c/o *inCider*, 80 Elm Street, Peterborough, NH 03458. □

—L.L.

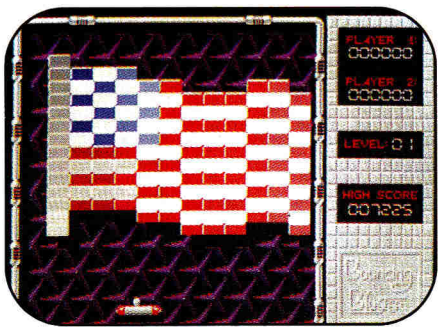
BOUNCING BLUSTER

J.M. VALLAT & J.F. DOUE,
25 Rue Bossuet, 77150 Lesigny, France

Arcade action;
512K Apple IIGS; $15 (100 French francs) shareware



This is the first time a shareware product has graced the pages of Game Room, but we'll take great games wherever we find them. When Bouncing Bluster arrived in the mail from France, we were mildly amused. When we started it up, recovering Arkanoid addicts Paul Statt and I were instantly hooked.



Hooked on the irresistible challenge.

Bouncing Bluster has the same basic premise as Arkanoid or Breakout: You break your way through a wall of bricks by bouncing a ball with a paddle. It's simple—simple and furiously addicting.

Bouncing Bluster has many of the same characteristics as Arkanoid and Arkanoid II: The Revenge of Doh. You'll find bricks that produce pills or capsules that give you certain attributes when you catch them, bricks that take a few hits to destroy, bricks you can't destroy, and bricks that regenerate after a few seconds. There's also an assortment of monsters who float about the screen, getting in your way and sending your ball bouncing in all sorts of crazy directions.

But Bouncing Bluster has a few extra tricks up its sleeve, too. Some capsules give you a jumping ball (at the click of your mouse, but beware—you can jump right over your paddle); others bring instant death, stealth (five balls, but only one is "real"), mystery, reverse (switches the direction in which your paddle responds to your mouse movements), and x-y moves (up and down as well as left and right). Some of them will help you; some will hinder you. You'll run into invisible bricks (basically the same as the normal kind, but you just can't see them) and teleport bricks, which zap your ball to any of the other teleport bricks on screen when you hit one of them.

Like Arkanoid II, Bouncing Bluster also includes a construction set. You can create your own "boards," as levels are referred to in Bouncing Bluster, and save them in groups called *scripts*. Complete documentation for the construction set and the Bouncing Bluster game is included on disk as an AppleWorks file. Because the developers are French, the documentation may not be in perfect English, but it's good enough to get you by.

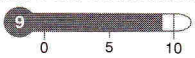
Sure, Bouncing Bluster is shareware. So it crashes occasionally and it's not as slick as something you'd pay $40 or $50 for, but if you send your $15 to J.F. Doue at the address noted above, you'll get updates. Besides, for 15 bucks you can't beat it. Bouncing Bluster is just the ticket for hopeless Arkanoid addicts.

Lafe Low
***inCider* staff**

SOLITAIRE ROYALE

SPECTRUM HOLOBYTE,
2061 Challenger Drive, Alameda, CA 94501,
(415) 522-3584

Card-game simulation;
512K Apple IIGS (768K recommended); $34.95



Solitaire's the name given to any of a number of card games you play by yourself. You play alone, but the romantic names of the games—such as Pyramid, Klondike, and Reno—let you imagine you're struggling against the same piles of cards as did the ancient Egyptians, the gold rushers, and Nevada gamblers.

According to the short but informative history of the game included with Solitaire Royale, the rules of Patience—as it's sometimes called—were first written in the 18th century. Cheating was probably easier in the old days of solitaire. It was certainly easier than it is now in the computer version.

Solitaire Royale offers eight grownup games, three simple games for children, four full decks of attractive cards, and only two ways to cheat—peeking under a pile and taking a move back.

You can't take a card from the bottom of a pile in the "tableau" and move it to the "foundation." (I just learned that there are names for the piles of cards in solitaire.)

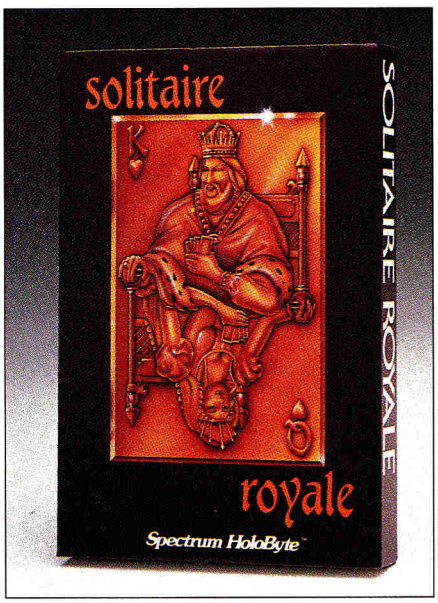
You'll win less often than you do playing

old-fashioned solitaire, but the good news is that you'll have many more chances to play. Solitaire Royale deals fast and keeps the cards in neat piles, even if you have a cat in the house.

Perhaps the ease of dealing and playing is what kept me going for hours: Solitaire Royale is as hard to quit as Shanghai (Editors' Choice, June 1987, p. 112).

In fact, it looks and plays a great deal like Activision's mah-jongg simulation. Both games were produced by Brad Fregger, who has an eye for the addictive.

The eight games included here—Pyramid, Klondike, Canfield, Golf, Corners, Reno, Calculation, and 3 Shuffles and a Draw—should provide hours upon hours of stimulating entertainment.



A new format for an old favorite.

I'd never heard of 3 Shuffles and a Draw, but I was able to get the hang of it with some excellent help from the program. There's no need to read the instructions—which is high praise, especially in an unprotected game.

Rounds of Solitaire Royale are purely games, but adventurous teachers might give some bright sixth-graders a crack at some of them. For instance, 3 Shuffles and a Draw is ever so mildly educational.

Solitaire is a classic game of the struggle of order against chaos. Solitaire Royale keeps the game itself neat, and lets you concentrate on the fun.

Paul Statt
***inCider* staff**

THE LEGEND OF BLACKSILVER

Epyx,
limited quantities available through mail-order dealers

Fantasy role-playing;
128K Apple II; $39.95

7
0 5 10

Bantross is a cruel and more-than-occasionally hazardous world. Danger is all around you, so you can't take things lightly. You'll have to master the skills and purchase the weapons you'll need to deal with various foes. The game features a marvelous interface; whether you command your character with a joystick or the keyboard, simple menus are always available to offer a variety of combat and exploration options.

The journey through Bantross begins with a dream. Aylea, Princess of Thalen, begs for your help. She has selected you to battle the evil Baron Taragas. Taragas has not only kidnapped her father, the king; he has also discovered *blacksilver*—the stuff of which magic is made. Blacksilver will give Taragas the power to conquer the kingdom of Thalen today and all of Bantross tomorrow.

Aylea tells you that only one hero can succeed and defeat Taragas. She drops a feather into your hand as you sleep—the key to the start of your adventure. When you awaken, it becomes your destiny to rescue the king of Thalen and destroy Taragas.

Plan your route carefully before traveling. Stay on the grassy plain if possible; the denizens of the plain aren't quite as vicious as those in the swamps, forests, and deserts. With 82 species of creatures to encounter, you'll soon learn the ones to avoid at all costs. You should also map your progress; you'll want to keep track of where the 16 cities, five dungeons, and an assortment of castles and temples are located.

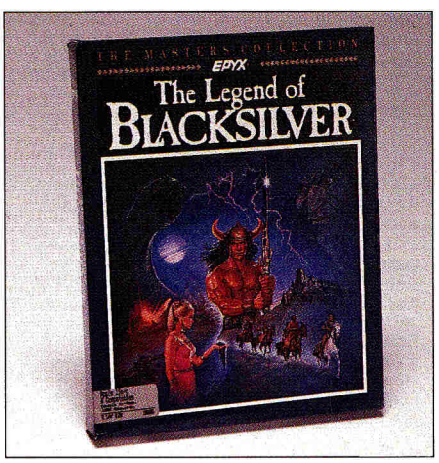
Look for the castle where the wizard Seravol resides. You and the wizard may be able to help each other in some way; you might also get your hands on some gold. As you may be bereft of substantial equipment, it's a good way to purchase protection and armament.

You'll visit temples and archives in your travels, too. Temples are great for donating money to "the Brotherhood," who in turn can alleviate some of your physical pain by returning hit points to you. You'll also find ways to improve your character's attributes by playing with the Gamemaster. These arcade-style games are fun, and you should consider brushing up on your skills at various times throughout your quest.

There are all sorts of shops in the towns where you can spend your cash on games of chance, magic, weapons, and armor. Some towns have manufacturing shops—such as a coppersmith's—where you can earn a fair wage for a day's work.

Take extreme care in the dungeons; they're the "pits." Dungeons range from four to 12 levels in depth. The creatures are as varied and villainous as you'd expect and there are vast amounts of treasure waiting to be found. And keep in mind that the deeper you travel into a dungeon, the more bountiful the treasures become and the more perilous your quest.

The game screen keeps you informed of your current status—hit points, number of food units, and number of gold pieces. When your food or hit-point level is dangerously low, the screen flashes to alert you: You'd better find food or a temple of healing.



In quest of might and magic.

The Legend of Blacksilver is a highly enjoyable fantasy that will offer you hours of gaming. Perhaps it isn't on a par with Ultima V or Might and Magic, but it will certainly win its way into your library as one of the better adventures on the market.

Hartley Lesser
Cupertino, CA

Editor's note: Epyx is no longer marketing and distributing its own titles. Previously released Epyx titles, such as The Legend of Blacksilver, should remain available through various mail-order distributors until further notice. □

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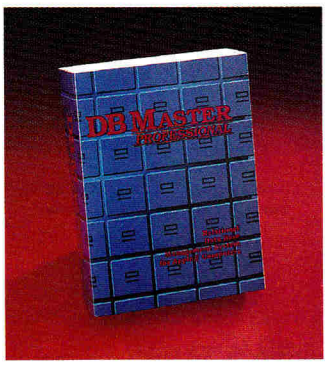

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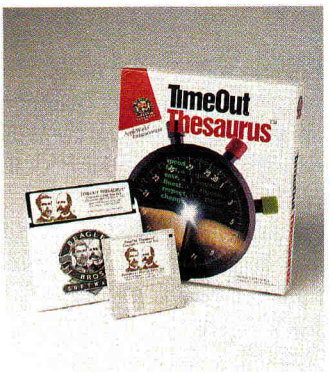

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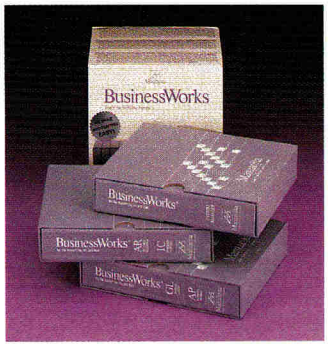

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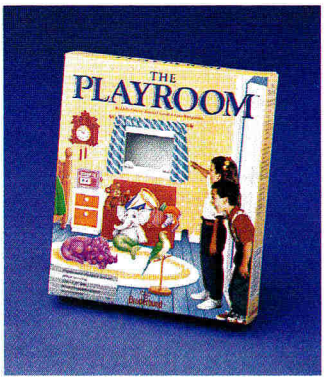

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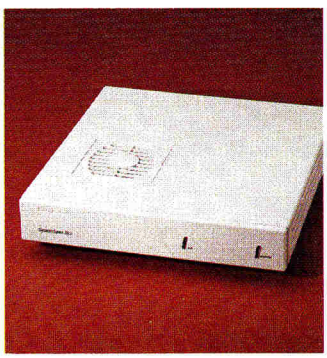

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Electronic Drawing. . . . . 32.
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ACTAsoft
Alpha Check v3.0. . . . . 32.
Addison-Wesley
Wordbench (AP + GS). . . . . 99.
Beagle Bros.
Timeout MacroTools or MacroTools II. . . . . 19.
Beagle Write Desk Accessories or Font Pack/1 or 2. 23.
Beagle Write Picture Manager. . . . . 25.
Beagle Bros. Clip Art/Vol 1 & 2(GS). . . . . 29.
Timeout SideSpread, FileMaster, or DeskTools. . . . 29.
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or PowerPack. . . . . *SPECIAL* 29.
GS Font Editor or Program Writer. . . . . 29.
Timeout UltraMacros or SpreadTools. . . . . 37.
Beagle Bros. Desk Accessories(GS). . . . . 37.
Timeout SuperFonts or QuickSpell. . . . . 45.
Timeout ReportWriter or Beagle Write. . . . . 48.
Timeout Graph. . . . . 52.
Beagle Write(GS). . . . . 59.
Broderbund
On Balance. . . . . 39.
Bank Street Writer *Plus*(AP or C+). . . . . 50.
Claris
Apple Works v3.0. . . . . 175.
Apple Works(GS). . . . . 209.
Dac Software
Dac-Easy Accounting. . . . . 65.
Intuit
Quicken v1.5. . . . . 39.
Manzanita
BusinessWorks Payroll (AP & GS). . . . . 109.
BusinessWorks Bundle AP & GS *(Sys. Manager, G/L, A/P, A/R, Inventory)*. . . . . *SPECIAL* 269.
MECA
Managing Your Money 4.0 (AP & GS). . . . . 95.
Mecc
Calendar Crafter School(GS). . . . . 59.
Micca Soft
Invoicer w/ A/P & Sales Tracking/Inventory. . . . 139.
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SoftSpoken
Cross-Works. . . . . *SPECIAL* 55.
Stone Edge
DB Master Professional. . . . . *SPECIAL* 199.
Timeworks
People, Places and Things (IIe & GS), Design Ideas (IIe & GS), Symbols and Slogans (IIe & GS), Education Graphics (IIe & GS), Font Pack 1 or 2 (IIe & GS). . . . . 27.
Graph It! or SwiftTax. . . . . 45.
Art Portfolio 4 in 1. . . . . 69.
Publish-It 3.0(IIe & GS). . . . . 74.
Word Perfect Corporation
WordPerfect(GS). . . . . 109.

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Activision
Music Studio 2.0(GS). . . . . 45.
Barron's
Computer SAT Revised Version. . . . . 34.
Britannica
Designasaurus(GS) or Revolution '76(GS). . . . . 29.
Algebra 1: 1st & 2nd Semester. . . . . 48.
Broderbund
Where in the World is Carmen San Diego?. . . . . 25.
Science Tool Kit Module I, II or II. . . . . 26.
Where in the USA is Carmen San Diego?. . . . . 29.
Where in Europe is Carmen San Diego?(AP or C+). 29.
Where in the World is Carmen San Diego?(GS). . . . 29.
Where in Time is Carmen San Diego(AP or C+). . . 29.
Playroom. . . . . *SPECIAL* 31.
Science Tool Kit Master Module. . . . . 55.
Geometry(GS). . . . . 55.
The Family Software Library. . . . . 69.
ByteWorks
Ugly Duckling(GS). . . . . 32.
Compu-Teach
Joshua's Reading Machine(AP or GS & C+). . . . . 27.
See the U.S.A. or Once Upon A Time II. . . . . 30.
Once Upon A Time(GS Talking). . . . . 35.
Davidson & Associates
Math Blaster Plus(GS) or Word Attack Plus(AP or GS) 29.
Alge-BlasterPlus(AP or GS) or Math Blaster Plus. . . 29.
Grammar Gremlins or Read 'N' Roll. . . . . 29.
Spell-It Plus(AP or GS)
or Math Blaster Mystery(AP or C+). . . . . 29.
Talking Math & Me(GS) or Talking Reading & Me(GS) 29.
Talking Math Blaster Plus(GS). . . . . 29.
Word Attack Plus Spanish or French. . . . . 29.

First Byte/Electronic Arts
The Rhyming Notebook. . . . . 29.
Grade Busters Corp.
Grade Busters 4,5,6. . . . . 42.
Grade Busters 1,2,3. . . . . 75.
Great Wave
Kidstime II *(IIGS)*. . . . . 24.
Learning Company
Magic Spells(GS), Math Rabbit
or Gertrudes Secrets(IIGS). . . . . 24.
Reader Rabbit, Magic Spells or Math Rabbit(GS). . . 24.
Think Quick or Writer Rabbit. . . . . 30.
Writer Rabbit(GS) or Think Quick(GS). . . . . 30.
Reader Rabbit(GS). . . . . 36.
Writing and Publishing Center(AP or GS). . . . . 47.
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Mavis Beacon Typing(GS). . . . . 33.
Spinnaker
Facemaker: Golden Edition or Kidwriter. . . . . 27.
Atlas Explorer. . . . . 32.
Kidwriter Gold(GS). . . . . 35.
Terrapin
Terrapin Logo Plus. . . . . 79.
Tom Snyder Productions
Reading Magic Library: Jack and the Beanstalk
or Flodd, the Bad Guy. . . . . 19.
Weekly Reader
New Talking Alphabet (3½)
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New Talking Shapes (3½). . . . . 30.

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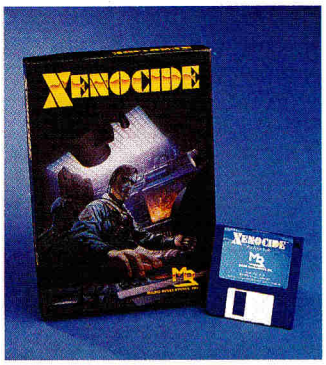

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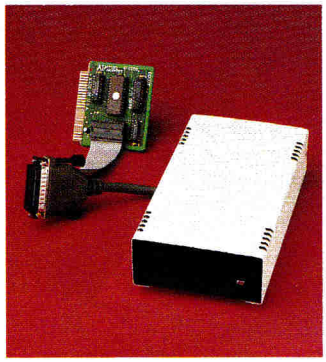

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Practical Modem 2400 SA. . . . . 179.
Prometheus
Pro Modem 2400A (Single Card). . . . . 129.
Supra Corporation
SupraModem 2400 (Hayes Compatible). . . . . 115.

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MouseStick ADB(GS). . . . . 69.
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Apple Mouse *IIc*. . . . . 85.
Apple Mouse *IIe*. . . . . 129.
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Sonic Blaster(GS). . . . . 109.
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Audio Animator(GS). . . . . 179.
Applied Ingenuity
Keyboard X(GS). . . . . 135.
Big Red Computer
Labels,Labels,Labels. . . . . 27.
CH Products
Hayes Mach III Joystick. . . . . 33.
Hayes Flight Stick. . . . . 49.
Roller Mouse ADB(GS). . . . . 119.
Cutting Edge
EADB-105 Extended Kybd w/ Macromate(GS). . . 129.
Digital Vision
Computer Eyes GS. . . . . 195.
Kalamar
Kalamar roll top 3½ (holds 45). . . . . 14.
Kalamar roll top 3½ (holds 90). . . . . 21.
Kalamar roll top 3½ (hold 135). . . . . 31.
Kensington
Mouse Pocket *(Reg. or ADB)* or Mouseway *(Mousepad)* 8.
Apple IIE, IIC or GS Dust Cover Imagewriter II Cover. 9.
Apple Security System. . . . . 34.
AntiGlare Filter GS. . . . . 39.
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Mouse Systems
A+ Mouse *(IIc)*. . . . . 63.
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ImageWriter Ribbon-Black six pack. . . . . 20.
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Echo IIB (AP & GS). . . . . 105.
Echo IIC (IIC & IIC+). . . . . 129.
Triad Venture
GDL Graphic Disk Labeler-GS v2.0. . . . . 25.

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Apple
ImageWriter II. . . . . 459.
Brother
M-1109AP *(ImageWriter Compatible)*. . . . . 225.
Laser Computer, Inc.
Laser 190A w/ Serial Interface. . . . . 239.
Seikosha
Seikosha SP 1000 *(ImageWriter Compatible)*. . . . 229.

Disk Drives & Hard Disk SubSystems

American Micro Research (Micro Sci)
Micro Sci C3 Controller. . . . . 52.
A.5 Half Height *(II+ & IIe)* or A.5C Half Height *(IIc)*. . . . . 135.
A5D Half Height 5¼" Drive *(IIGS Daisychain)*. . . 155.
AS800K 3.5 Ext. Drive. . . . . 195.
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AMR D20/APS 20MB HD w/SCSI(IIe & GS). . . . 569.
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Transdrive Dual 360K. . . . . 329.
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CDrive 40 Internal C & C+. . . . . 689.
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CT-20 Hard Drive(AP & GS). . . . . 505.
CT-20c Hard Drive IIc. . . . . 619.
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CT-80 Hard Drive(AP & GS). . . . . 965.
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SCSI Rom Upgrade. . . . . 25.
"SDUSeries - Stack" Platinum IIe, IIGS
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60 MB w/ SCSI II card. . . . . 709.
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DF4 40 Compact MB HD(IIe & GS). . . . . 895.
D7/T 70 MB HD(IIe & GS). . . . . 965.
DF7 Compact 70 MB HD(IIe & GS). . . . . 989.
Laser Computer, Inc.
Universal Disk Controller. . . . . 45.
Laser DiskDrive(GS). . . . . 95.
Laser 800KB Drive. . . . . 189.
Laser 800KB Drive Bundle. . . . . 215.
OHIO Kache
Multi-Kache SCSI Option. . . . . 69.
Multi-Kache w/ 1 meg. . . . . 379.

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Making Movies with Your Apple IIe: Part 1

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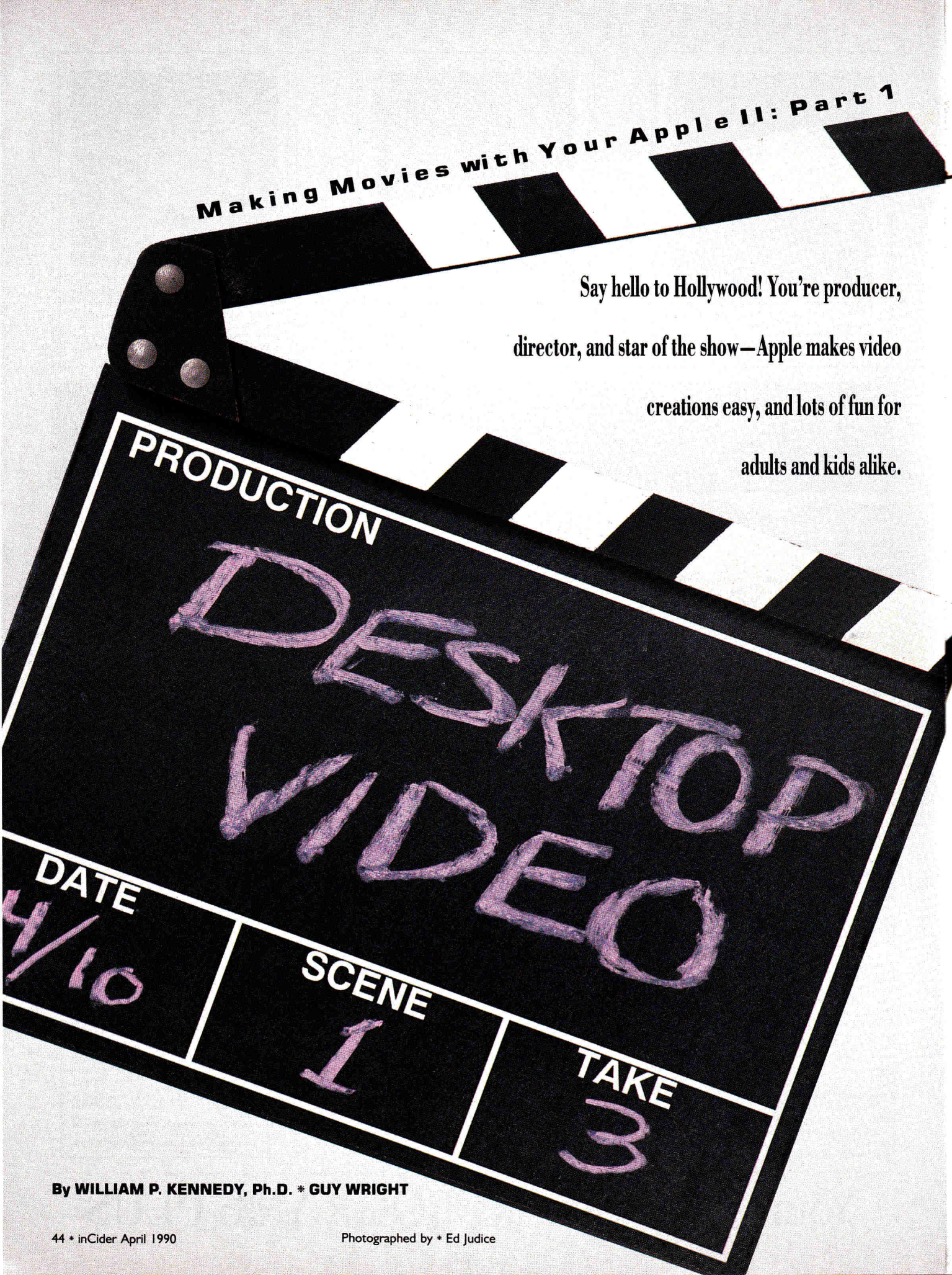


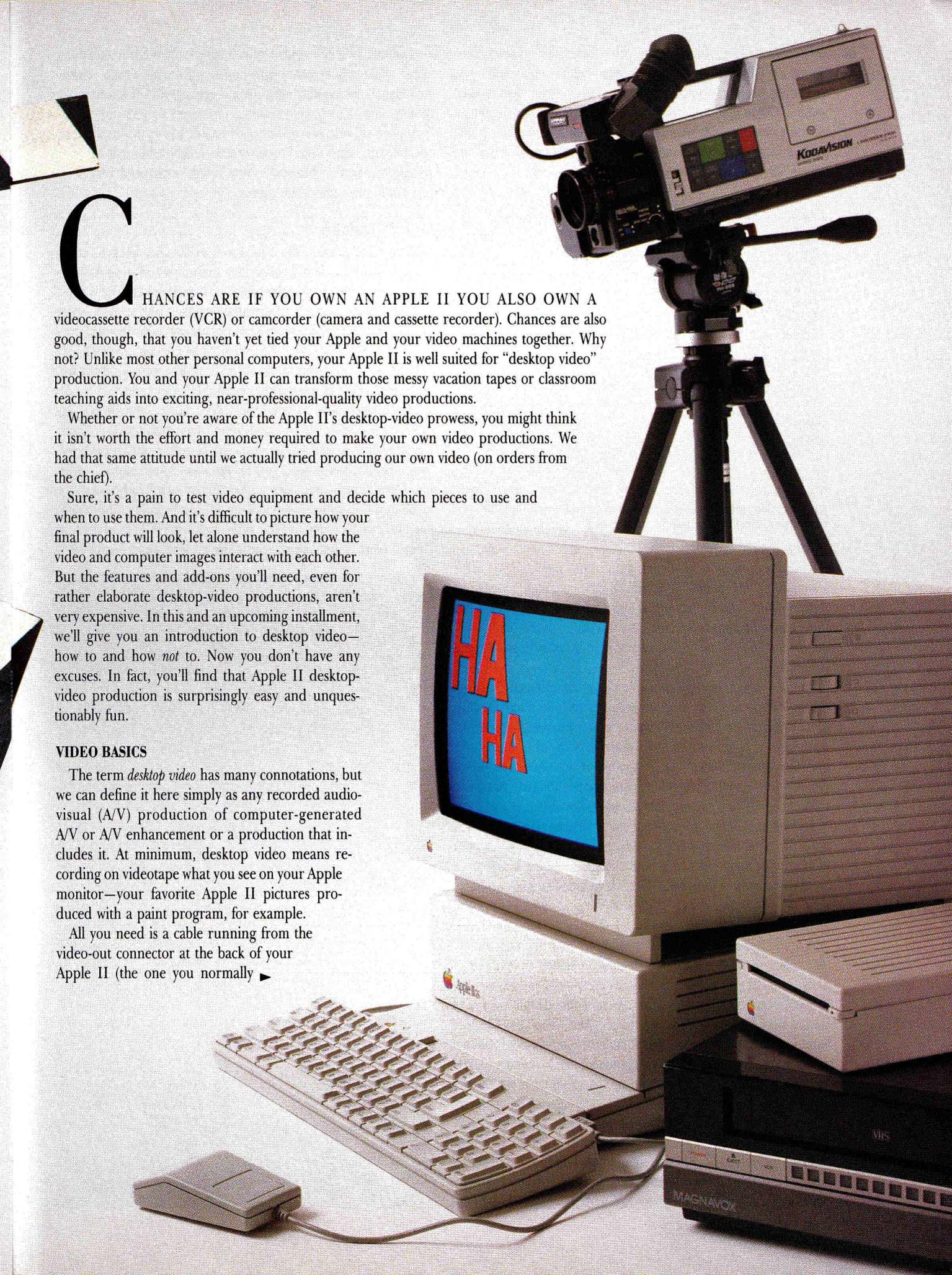
By WILLIAM P. KENNEDY, Ph.D. * GUY WRIGHT

Photographed by * Ed Judice

CHANCES ARE IF YOU OWN AN APPLE II YOU ALSO OWN A videocassette recorder (VCR) or camcorder (camera and cassette recorder). Chances are also good, though, that you haven't yet tied your Apple and your video machines together. Why not? Unlike most other personal computers, your Apple II is well suited for "desktop video" production. You and your Apple II can transform those messy vacation tapes or classroom teaching aids into exciting, near-professional-quality video productions.

Whether or not you're aware of the Apple II's desktop-video prowess, you might think it isn't worth the effort and money required to make your own video productions. We had that same attitude until we actually tried producing our own video (on orders from the chief).

Sure, it's a pain to test video equipment and decide which pieces to use and when to use them. And it's difficult to picture how your final product will look, let alone understand how the video and computer images interact with each other. But the features and add-ons you'll need, even for rather elaborate desktop-video productions, aren't very expensive. In this and an upcoming installment, we'll give you an introduction to desktop video—how to and how *not* to. Now you don't have any excuses. In fact, you'll find that Apple II desktop-video production is surprisingly easy and unquestionably fun.



VIDEO BASICS

The term *desktop video* has many connotations, but we can define it here simply as any recorded audio-visual (A/V) production of computer-generated A/V or A/V enhancement or a production that includes it. At minimum, desktop video means recording on videotape what you see on your Apple monitor—your favorite Apple II pictures produced with a paint program, for example.

All you need is a cable running from the video-out connector at the back of your Apple II (the one you normally ►

use to connect a monitor) to the video-input jack on your VCR. Set your VCR to *record* and use its pause button to stop and start recording while you select and view your Apple graphics masterpieces. Add a sound track coming from either the Apple or an audiocassette. You've just finished your first desktop-video project: Now others can enjoy your work—most of your friends have VCRs, but not necessarily Apple IIs.

Apple's Video Overlay Card lets you add graphics and animation to a video background.

Creating and recording computer-graphics sequences and animations is even more challenging and fun. (See "A Fish Called Herman," p. 51 in this issue, for a good example.) Apple II desktop video means everything from inserting electronic titles into your education videos to incorporating special digital A/V effects into your home version of *Star Wars*. The list of possibilities is endless.

Note, however, that except for the simplest videos such as the examples above, the best desktop videos include a fair amount of editing: transferring and merging selected A/V segments from computer or tape to some final "master." And, unless you have very low expectations about the quality of that final tape, you'll need to know something about equipment and what you have to do to produce a high-quality, trouble-free video.

In this installment we'll construct an Apple II-based system with the hardware and software best suited for even the most elaborate desktop-video creation. Building on this foundation, we'll describe how to produce your own video in May's part 2.

A VIDEO PRIMER

A video picture is electricity in motion. Your monitor or TV needs many different electrical signals to position its "gun" precisely and "spray" (literally) millions of minute points of light onto the screen—30 or more times per second, so that your eyes and brain perceive a fluid, apparently "live" display. The most important electrical signals of the many required to produce a video image are the actual picture and the synchronization (*sync*, for short) pulses that communicate, at minimum, where the picture is to appear on screen.

The complexities of a video signal also demand that each device, from camera to computer to monitor, adheres to a common set of electronic rules or standards. In the United States and a few other countries, a common standard for broadcast television was established by the National Television Standards Committee (NTSC). Your Apple II generates NTSC-compatible video. That means that to produce desktop video, your equipment must also be able to accept and generate NTSC-compatible video.

Almost all video-recording equipment incorporates another special sync signal called the *control track*, which adjusts playback speed "on the fly," because tape slippage and speed variations are common in most tape drives.

LIGHTS, CAMERA...

Before you launch into your own production, keep in mind some limitations. First realize that the quality of a video production is fragile; each subsequent link in the video chain can't improve on its source, and the final picture is only as rich as the poorest component in the chain. Consumer-type video cameras, recorders, and so on are nowhere near as good as professional, pricey broadcast equipment. Don't expect broadcast-quality video and you'll be pleasantly surprised.

The first link in the desktop-video chain is hardware. In general, purchase the best equipment your budget can afford. Four heads in your VCR or camcorder are better than two, for example. And don't forget to *maintain* your equipment—check cables for worn spots, and clean the tape heads and drive mechanisms in your VCR regularly, for instance. It's interesting, however, that except for the very cheapest, VCR tapes are of fairly consistent quality; purchase the most reasonably priced.

Table. Shopping list for Apple II desktop-video system. Prices of hardware vary and increase with additional features and accessories.

HARDWARE	APPROXIMATE COST
4-head VCR with flying erase heads, video/audio dubbing, freeze frame, frame search, stereo sound	$450
camcorder with zoom/macro lens, low light requirement, fade control	$1000
Apple IIGS, IIe, IIc, or IIc Plus system GS provides more video options at higher resolution	$2500
Video Overlay Card	$549
audio tape deck	$100
audio mixer	$40
accessories microphone, cables, video- and audiocassettes, lights	$50
SOFTWARE	**RETAIL PRICE**
Art & Film Director	$79.95
Home Video Producer	$49.95
VCR Companion	$49.95
Fantavision/Fantavision GS	$49.95/$59.95
Video Title Shop	$29.95
Take One!	$59.95

The accompanying **Figure** shows a suggested desktop-video system; the **Table** includes a shopping "wish" list. Basically, you'll use a camcorder (or separate camera and VCR) and audiocassette (or reel-to-reel) recorder (the *slave* elements) to store live A/V events.

You then edit those events together with Apple II-generated A/V enhancements and special effects (titles, graphics, and so on) onto videotape in a second VCR, the *master*. Keep in mind that the master is, by necessity, a videocassette recorder, although the slave can be any of a variety of video sources: a camcorder (as depicted in the **Figure**), another VCR, or a videodisc player or video camera, for example.

Audio effects for typical desktop productions are secondary to video; degree of precision in timing and editing incidental or background music or even voice-over narration isn't critical. In terms of equipment, audio is the simplest and least worrisome link in the desktop-video chain. And because audio isn't as complicated as video—particularly as it doesn't require sync signals—you can readily mix and tape several sound sources, including special effects from your Apple II or a microphone for voice-overs, onto a master audio tape and eventually onto the master videotape. An audio *mixer* (about $40 from Radio Shack) is the only special equipment you might consider, although it's not essential; it adjusts individual source volumes for desktop-video productions.

If you don't already own a VCR or camcorder, you'll be hit with a barrage of special features as manufacturers attempt to prove that their equipment is better than the competition's. Many of these bells and whistles aren't necessary, but there are a few critical features you should look for—without them desktop-video production can be difficult or even impossible.

One of these features, particularly important for the master recorder, is *"flying" erase heads*. They let you perform nearly seamless video editing by tracking those sync pulses we mentioned earlier and starting a new recording at just the right moment—just the right place on the tape. Without flying erase heads, transitions between scenes will "break up" the picture. It can take several seconds to stabilize, resulting in a less-than-satisfying visual experience.

Another feature you'll find almost essential for the master is audio and/or video insertion, or *dubbing*. Audio dubbing lets you change the sound in a prerecorded scene without altering the video. Similarly, video dubbing retains the original audio portion of a scene. Dubbing is particularly important because it removes the need for additional "generations" of tape. (We'll talk more about dubbing in next month's installment.) If you can afford them, *jog-shuttle* controls, *fade to black*, and *fade to white* are useful video features you can't simulate very well with a basic Apple II desktop-video system. *Freeze-frame* and *frame-search* features are also useful. You'll need freeze frame if you want to transfer a video frame into your Apple with digitizing software and hardware; just don't expect miracles. Frame search helps you find ►

Further Reading

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"Reel-World Images," July 1989, p. 40
"IIc Videotapes," Apple Clinic, March 1990, p. 26

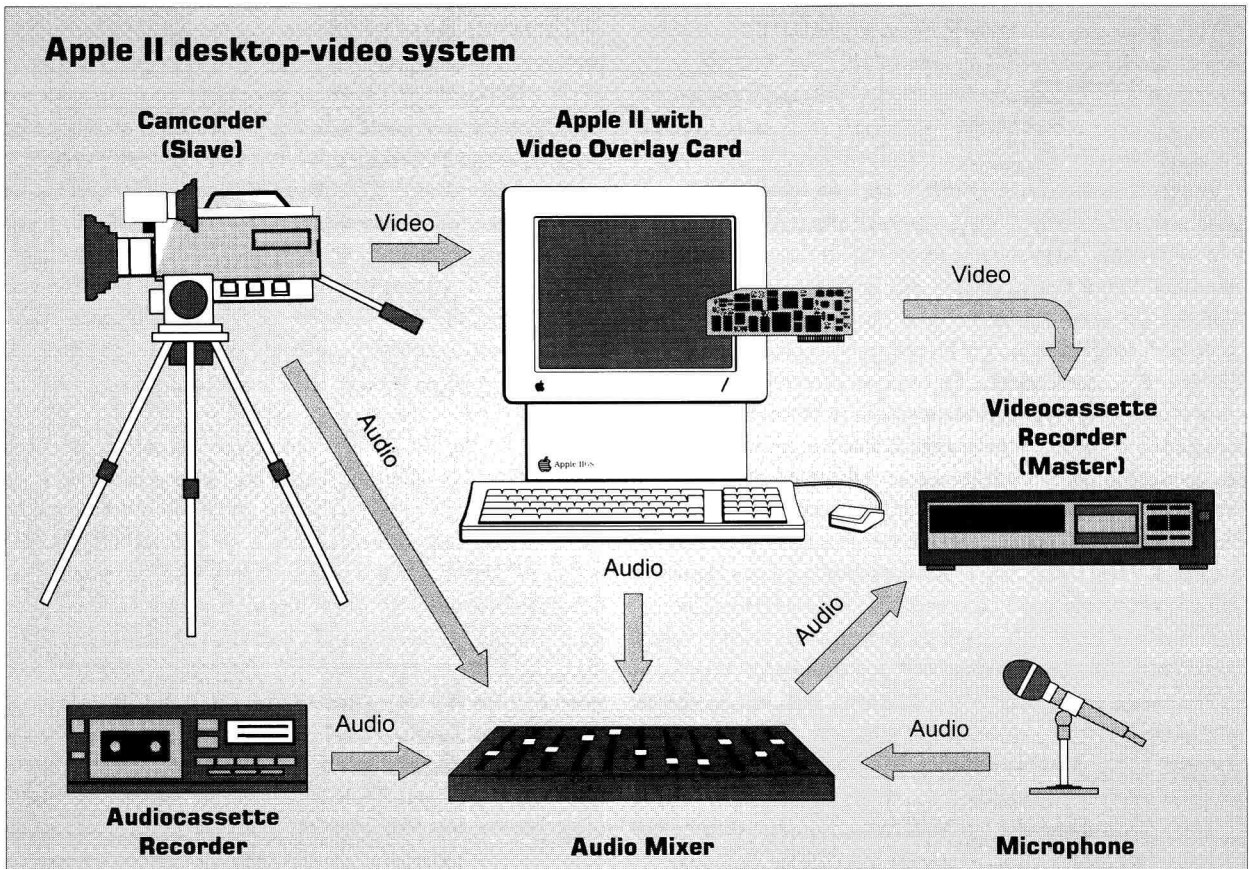

Figure. Components and connections of the basic desktop-video system described in the text. Not all components are essential; the most rudimentary desktop-video system includes the Apple II and a videocassette recorder only. An editor/controller device, not shown here, is also recommended, although not essential.

the beginning and ending frames of a video sequence as you edit. Both features are helpful, if not essential, when finding and displaying the video background onto which you're creating overlay text, graphics, or animation with an **Apple II Video Overlay Card** (more on that later).

What about video formats—VHS, beta, and 8-millimeter? Your camcorder and VCR don't have to share the same format; in fact, beta, 8mm, and certain others generate better video than VHS. But VHS is the most common, and by having a consistent format, you can "load up" the features on your camcorder and purchase a relatively inexpensive (and featureless) VCR. For desktop-video editing, then, use the camcorder to record live events, but then use it again as the master to rerecord the material from the VCR (now the slave); that's the opposite of the configuration shown in the **Figure**.

Another important, but not critical, piece of desktop-video equipment is an *external controller* to start and stop taped portions at precise locations. Controllers are relatively inexpensive (around $200) and make video editing a great deal easier. They work by electronically "marking" one or more scenes on the slave videotape, then cueing up those scenes automatically on the slave and inserting them on the master for precise editing.

That's a process not easily reproduced with the play, record, and pause controls on the typical VCR or camcorder. Few camcorders and VCRs can be controlled externally, so shop carefully. One commercially available system uses the GS' modem and printer ports to control up to two VCRs. Unfortunately, the system works only with specific machines and is primarily used for video presentations, not editing. We can't recommend any current Apple II-based editor/controllers, but let's hope one will appear soon.

An Apple II Video Overlay Card is a central feature in a desktop-video system because it serves two purposes: First, it lets you combine two video sources into one. That's something you can't do by twisting two wires together as you might with two audio sources; the video syncs from each source will conflict and destroy the picture. The Overlay Card *genlocks*, or automatically synchronizes, the video from your VCR or camcorder with the Apple's so that you can display computer text and graphics over a live or recorded scene. For instance, you might have an Apple-animated character appear to tweak the prerecorded nose on your face.

The Video Overlay Card includes software through which you control the level of mixing between the video source and the Apple's screen, and choose a *key color* (the color your video picture should "show through") from the 16 available. That software complicates the recording process, however: You must exit your current program to run the Overlay software and change the card's settings—unless you have a GS and you're running an application that lets you access the Overlay's new desk accessory (NDA), which you'll find under the apple menu on the main menu

bar. Even the NDA interferes with the screen, however, by displaying the control setting—so that you can't alter the Overlay Card "on the fly" during a recording for smooth special effects.

It's too bad Apple didn't hard-wire controls directly to the Video Overlay hardware, as you find on some genlock boards for other computer systems. At least the company could have provided technical documentation so that you could program your own software controls.

Nonetheless, the second, and perhaps best, reason for using the Overlay Card, despite its drawbacks, is that it greatly improves the video quality coming from your Apple II. The card generates a signal closer to NTSC standards than the Apple's native system; it nearly eliminates the washed-out horizontal color bleeds and warped edges endemic to Apple II video recordings.

There are also a number of hardware options you can add to your Apple and your video equipment to further embellish your desktop-video productions: stereo and sound-digitization cards for computer-generated audio special effects, video-digitization hardware/software systems for converting live images to computer graphics you can alter with a drawing or painting program, and so on. The list is almost inexhaustible; your finances, however, probably aren't. So be creative and try using whatever hardware you've acquired for other purposes. It might just work. (For more information from the pages of *inCider* on audio and video hardware, see the accompanying sidebar, "Further Reading.")

. . . ACTION

As mentioned earlier, you can record on videotape anything you'd normally view on the Apple monitor, including simple text screens such as those from an AppleWorks document, pictures you've created with any of the many paint programs available for the Apple II, or even computer animations designed with special software.

The simplest and most popular form of desktop video is *titling*—inserting Apple-generated text frames into your video to document the proceedings. You can type *Billy's Birthday* or *Produced and directed by. . .* on your Apple screen or create screens with any of a variety of graphics programs. Then simply record that screen onto your videotape before the appropriate video sequence. Better yet, combine the title frame with live action or a "real" frame with the Video Overlay Card.

Graphically rendered text is more appealing than simple computer text for titling. You can use a variety of colors, for instance, and, more importantly, you can vary text size to create a more readable screen. You can also add borders and icons to the graphics text. Special titling software—such as **Video Title Shop** from Datasoft, **VCR Companion** from Broderbund, or **Home Video Producer** from Epyx—is recommended over generic text or graphics programs because of the ease of use you find in software dedicated to a single purpose.

The next level of desktop-video production is rendering a sequence of Apple screens with or without live video pictures—also known as *presentation video*. Many Apple II software packages are available to help you prepare a presentation or computer slide show by pre-arranging your Apple screens on disk in a selected order and then loading and displaying them automatically. Rather than manually loading text or graphics screens within or outside their applications and then manipulating the record and pause buttons on your VCR, you can plan and prepare the computer show in advance and record the sequence all at once. Indeed, reviewing the sequence on the computer screen before recording is preferable to later video editing. (See "A Fish Called Herman," p. 51, for one such project.)

Advanced presentation software improves that automatic screen-load and -display process by letting you create special graphics and title screens. It also lets you select a variety of screen *transitions*—the ways in which the computer moves from one screen or frame to another. VCR Companion from Broderbund is currently the *crème de la crème* of presentation-software packages. Styled after Broderbund's familiar Print Shop program, but unlike it or most other presentation software, VCR Companion is designed specifically for video recordings; for example, its titling utilities use well-defined fonts that minimize color bleeding. VCR Companion also offers some of the best screen transitions available.

Desktop video is at its best when incorporating Apple animation, and there's a wealth of special software available. **Art & Film Director** from Epyx is perhaps the best, although it can be quite complicated to use and runs only on an Apple IIGS. (Not only is the program difficult to use, it's also difficult to buy. At press time, Epyx, now strictly a software developer, was looking for a company to take over sales and support of the program.) Using Art & Film Director, however, is worth the effort: Its animations are the crispest and cleanest around. And it's set up to give you the look and feel of real movie making, the mark of an excellent video production, script and all. Other animation options include **Fantavision** and **Fantavision GS** from Broderbund and **Take One!** from Baudville. (See the sidebar "Further Reading" for a list of reviews and features focusing on video and animation software.)

CUT TO THE CHASE

This is a good place to "take five" and give you a chance to set up and play with your own Apple II desktop-video system. Next month, we'll stop *talking* about video and get down to some serious video *production*. Roll 'em. . . . □

WILLIAM P. KENNEDY IS *INCIDER*'S SENIOR TECHNICAL EDITOR AND THE AUTHOR OF OUR COLUMN APPLE CLINIC. GUY WRIGHT IS A CONTRIBUTING EDITOR TO *AMIGA PLUS* MAGAZINE AND HAS BEEN A PRODUCER/DIRECTOR FOR CABLE-TELEVISION STATIONS. WRITE TO THEM C/O *INCIDER*, 80 ELM STREET, PETERBOROUGH, NH 03458.

PRODUCT INFORMATION

Apple II Video Overlay Card
Apple Computer
20525 Mariani Ave.
Cupertino, CA 95014
(408) 996-1010
$549

Art & Film Director, $79.95
Home Video Producer, $49.95
Epyx
limited quantities available
through mail-order dealers

Fantavision, $49.95
Fantavision GS, $59.95
VCR Companion, $49.95
Broderbund Software
17 Paul Drive
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(415) 492-3200

Take One!
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Grand Rapids, MI 49508
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Video Title Shop
Datasoft
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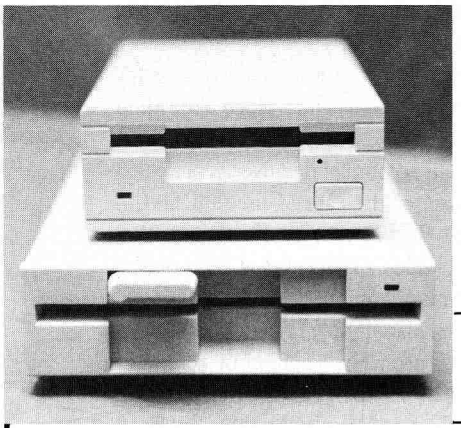
(800) 245-4525
$29.95



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By STEPHEN W. POLITZER

A Fish Called

Reading and writing take on new dimensions when kids take the director's chair in a classroom video project for all ages.

STUDENTS BECOME READERS BY READING, AND THEY become writers by writing. The new California Language Arts Framework says it, research documents it, and educational programs across the country echo it. But in an age of eyes and ears glued to "the tube," how do we get students to try harder—to practice reading and writing? Can we turn television's hypnotic attraction to our advantage?

One way to do just that is through "talking video books"—**Dazzle Draw** story slide shows, complete with text, created on the Apple II and recorded on videotape with student narration. Young people from preschool through junior high plunge willingly into writing and reading when computers and video team up. Productions can range from one-time-only projects to four-week, 18-session courses. Experience has shown that the most important element is the willingness to try.

HARDWARE/SOFTWARE NEEDS

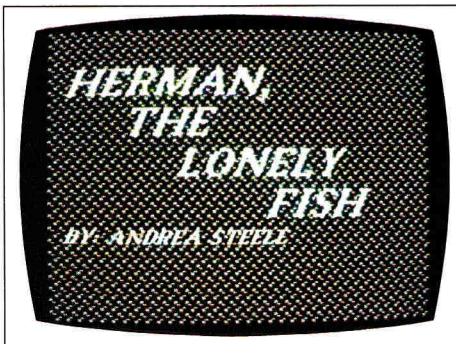
A little planning and preparation up front when you assemble your equipment will pay off later. Most items are readily available. You'll need an Apple IIGS, IIc, IIc Plus, or IIe with color monitor and mouse, plus the program Dazzle Draw, from Broderbund. Set aside some clean data disks (either 3½- or 5¼-inch) you'll designate later as Slide Show disks.

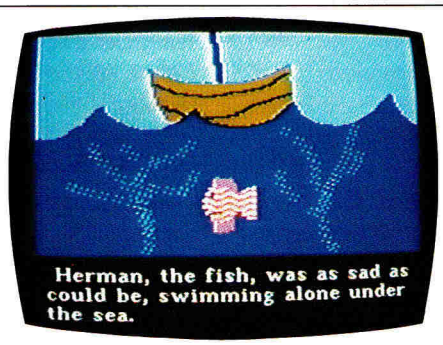
Your VCR/monitor setup must have audio and video inputs. For sound, use a tape recorder with microphone and line-out or headphone-out jack, or a microphone mixer with microphone and line-out jack. You'll also need two male RCA connecting cables, quarter-inch and eighth-inch RCA adapter plugs (**Figure 1**), and videotape.

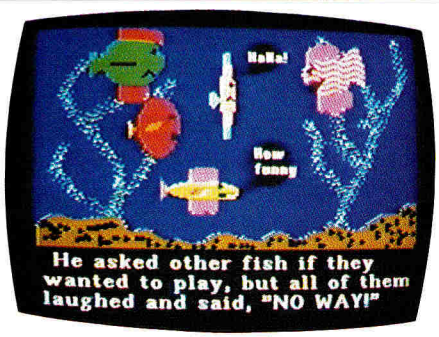
As a prelude to producing talking video books, students will need to become familiar with Dazzle Draw and its Slide Show module. For kindergarten, that may mean following the teacher's directions and creating colorful "snowflake" patterns with the program's mirror and paintbrush tools. For upper primary grades, students may create individual, group, or class pictures; fourth- through eighth-graders are often quite successful at independent work. Should you have the opportunity for an extended series of sessions, see the accompanying sidebar for a suggested guide to introducing Dazzle Draw in grades 4 and up through a series of one-hour sessions.

TURN THE PAGE

Start your movie-making session by formatting a data disk with the Slide Show option. (Be aware that formatting destroys any picture currently on screen, as well as the clipboard contents.) Just choose *Make Slide Disk* from Dazzle Draw's File menu and follow the screen prompts. (If you don't see the prompt, "Would you like to make a ►







Excerpts from the saga of *Herman, the Lonely Fish*: Creating narrated videos gets kids excited about reading and writing.

Slide Show disk for a 3½-inch disk?" you're using an older version of the program, which uses only 5¼-inch disks.)

Next decide on the number of "pages" for your book. If the total number is seven or fewer, you can use Dazzle Draw's *Easy File* system (the only file system in earlier versions of the program). Include in your page total a cover or title page if you like, plus a blank page (the black, unused screen), which you'll need when you set up the Slide Show loop later on. For eight or more pages (up to 46), you'll need Dazzle Draw's *Professional File* system (available only in the updated program). More on these two filing systems later when we discuss saving pictures.

The cover page, and any other pages without story text, such as young children's picture books, should be full screens. Use Dazzle Draw's scroll bar to allow painting on the entire screen. Click and drag it to the top or bottom to access the whole display. Choose *View Picture* from the Goodies menu to see whether you're using the full screen.

For pages with story text, make sure the scroll bar is at the top before making pictures. If you accidentally create a picture without

Table 1. Professional File timing options.

1 = 1 second	6 = 20 seconds
2 = 2 seconds	7 = 30 seconds
3 = 5 seconds	8 = 45 seconds
4 = 10 seconds	9 = 60 seconds
5 = 15 seconds	0 = wait

the scroll bar at the top, you can *Capture* it, *Cut* it, click and drag the scroll bar to the top, and then *Paste* it back. (Look for these options on the Edit menu.)

After you finish drawing an image on a page that will have text,

Table 2. Professional File transition options.

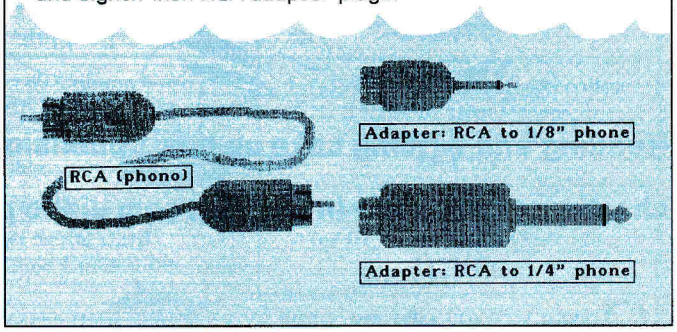
1 = random	6 = right to left
2 = no fade	7 = scroll left
3 = top down	8 = scroll right
4 = bottom up	9 = dissolve
5 = left to right	0 = random/weird

click and drag the scroll bar to the bottom. You'll find an unused black strip; click on the text tool and type your script there. Plain 24-point *Serif* font looks best when transferred to videotape. If you need to fit in more text, use the program's 18-point *Modern* font in boldface. In this smaller size, boldface will make the letters clearer on the videotape recording.

For younger students, the teacher may want to type in the text. For students, writing and editing on paper before typing is often helpful. Dazzle Draw's text tool isn't a word processor; you can't edit, so you must enter your text in one shot. Now *Capture* (Edit menu) the finished text and center it by clicking and dragging with the mouse.

If you're using Dazzle Draw's *Easy File* system, saving pages is simple. Choose *Save* from the File menu and click on *Picture*. When you see

Figure 1. Left, RCA connecting cable. Right, quarter-inch and eighth-inch RCA adapter plugs.



the prompt "Save Picture as," type in the name and click on *Okay* to save it on the 5¼-inch Slide Show disk you prepared in advance. Remember, the *Easy File* system limits your book to seven pages.

For *Professional File* users, saving pages requires several steps. First, insert the 3½-inch Slide Show disk you prepared in advance. Now choose *Save* from the File menu, but instead of saving at this time, click on *On Line*. Your computer will list the disk(s) in your system's drive(s), one of which will be */Slideshow*. Click on *Prefix*, */Slideshow*, and *Okay* to tell the computer what disk to look for (*/Slideshow*).

Now respond to the prompt "Save Picture as" by typing in the name of the picture and clicking on *Okay* to save the image to the 3½-inch Slide Show disk. Note that you have to set the prefix only the first time you save; from then on it will remain that way until you change it or reboot.

You can create pages in any order, but as you do, save them under names that include page order in the titles—*page.1*, *page.2*, *P1*, or *P2*, for instance. And if more than one student is using a slide disk, use names or initials, too, such as *Stephen.P1*. (Page names are for reference only and don't affect the actual images on your slides.) Name the black page *Black* to avoid confusion later on.

Once you've finished your pages, load each one and *View* it to check for misspellings or incomplete pictures. This step avoids rebooting Dazzle Draw to make corrections. Should any text require corrections, remember that Dazzle Draw isn't a word processor; you'll have to *Capture* the text area and *Clear the Section* (Edit menu), then retype the words.

ON WITH THE SHOW

Now boot the Slide Show disk; you're going to set up the order of your pages, the transitions between them, and the timing from one page to the next.

As Dazzle Draw's manual notes, "You'll be prompted on how to set up the order, transition, and timing of your Slide Show." For the *Easy File* system, that's fine, and the prompts are easy to follow. The *Professional File* system is quite another matter, however.

To set the order of the pages, use the up- and down-arrow keys to

move the highlighted block to the first book page, the picture named *Black*. Press the spacebar to select it; the name will appear on the right-hand side of the screen. Now move to the next picture in book-page order and press the spacebar to select it. Continue until all the pages you want are in order.

Now press Return to move to the *Timing/Transitions* screen (**Figure 2**), where you'll see the names of pages in the order in which you set them up. To the right of each page name are two columns—the first for timing, the second for transition. Timing is preset at one second. Press 0 (zero) and the timing will change to *wait*. On this setting, you control when to move on to the next page by pressing the spacebar. (For other timing settings not used in this application, see **Table 1**.)

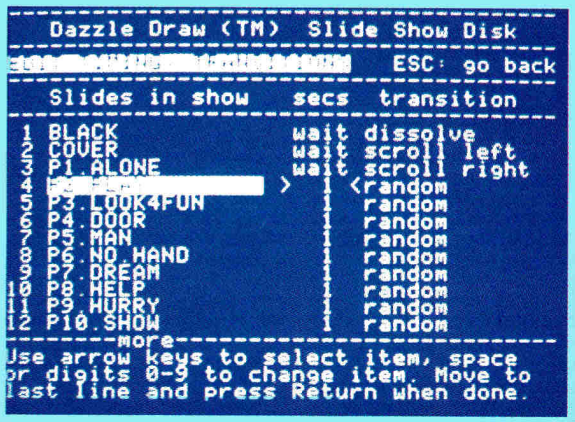
Press Return to move to the transition column. Set the *Transition Into* the picture named on the left by pressing a number, 0 through 9. (See **Table 2**.) For the *Black* page, choose 9 (*dissolve*) and press Return. Transitions that seem to work particularly well are 7 (*scroll left*) and 8 (*scroll right*). Others are faster, and less like turning pages, but may also be effective. You might try rotating through a sequence of 3, 4, 5, and 6 (*top down*, *bottom up*, *left to right*, and *right to left*).

Repeat the timing/transition process for each page. Now press Return to save all that information to the Slide Show disk. Should you need to change any of the setup information, press Escape to return to that menu.

IN STUDIO ONE

Your show is now ready to videotape. Connect the computer and the audio equipment to your VCR. Use a cable with male RCA plug ends (**Figure 1**) to connect the computer's video-out to the VCR's video-in. If you're using a GS, the video-out plug is in the back, between the keyboard and monitor plugs, and shows an icon of a monitor screen. The IIe's video-out plug is at the back of the CPU with the cable to the monitor; the IIc and IIc Plus are similar. Unplug the computer monitor to make the connection.

Figure 2. Timing/Transitions screen.



Now turn on the VCR and set it to *Video*; you should see the computer picture on the TV monitor. You may need to switch the input to *Line*, *AUX (auxiliary)*, or *External Source* to see the computer picture. Check your VCR manual. ►

A Dazzle Draw Tutorial

Session 1

1. **Disk handling/care**
2. **Booting Dazzle Draw options screen: Choosing *Easy* or *Professional File System***
3. **Using mouse/pull-down menus**
4. **Tools: paintbrush (choosing size, shape, color)/undo function**
5. **Tools: flood fill/scroll bar**
6. **Goodies: *View Picture/Clear Picture***
7. **Ending the session: Crown: *Quit Dazzle Draw***

Session 2

1. **Review disk handling and care/booting**
2. **Review tools: paintbrush/flood fill/scroll bar**
3. **Review Goodies: *View Picture/Clear Picture***
4. **Tools: shapes (make an abstract art picture), *View/Clear***
5. **Tools: lines (make a spider web using corner, then spiral), *View/Clear***
6. **Student independent painting/art time**
7. **Ending the session: Crown: *Quit Dazzle Draw***

Session 3

1. **Review disk handling and care/booting**
2. **Review: Create a picture with paintbrush, flood fill, shapes, and lines**
3. **Tools: spray paint (add to review picture) and *View/Clear* (Goodies)**
4. **Goodies: Mirrors (use with paintbrush)**
5. **Assignment: Write name with horizontal *Mirrors* on**
6. **Edit: Capture (*Capture* name, *Invert/Flip*)**
7. **Ending the session: Crown: *Quit Dazzle Draw***

Session 4

1. **Boot Dazzle Draw**
2. **Review tools (paintbrush, flood fill, shapes, lines) and Goodies (*Mirrors*, *View*, *Clear*)**
3. **Slide scroll bar to the top/create a picture (10 minutes)**
4. **Slide scroll bar to the bottom**
5. **Tools: text (choose *Modern* or *Serif*)/type 1–2 sentences that go with the picture**
6. **Edit: *Capture* sentences and center with mouse/*View*, *Clear***
7. **Ending the session: Crown: *Quit Dazzle Draw***

Session 5

1. **Boot Dazzle Draw**
2. **Student independent picture time (15 minutes)**
3. **File: *Save* (Saving pictures on 3½-inch Slide Show disk: Choose *Save*, click on *Prefix*, set *Prefix* to */Slideshow*, click on *Picture*, name the picture, click on *Okay*)**
4. **Create and *Save* another picture**
5. **File: *Delete* pictures from the Slide Show disk**
6. **Ending the session: Crown: *Quit Dazzle Draw*□**

—S.P.

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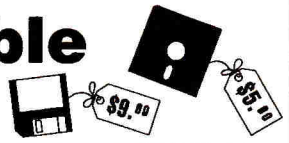

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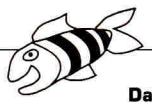
If you're using an audio tape recorder, connect the cassette's line-out RCA plug (if there is one) to the VCR's audio-in with another male RCA cable (**Figure 1**). If there's no line-out, connect the headphone-out to the VCR's audio-in with the cable; use the correct adapter plug for the cassette-headphone end (**Figure 1**).

Put a cassette tape into the audio recorder, and set it to *Record*. The tape lets the recorder access the microphone, sending the sound to the VCR. The cassette tape itself has no other function in this process. You can play a second cassette in the background to provide music while recording the voice.

If you have a microphone mixer, plug in the mike and connect the mixer's line-out RCA plug to the VCR's audio-in with a male RCA cable. If the line-out requires a quarter-inch phone plug, use the correct adapter (**Figure 1**).

It's book-taping time. If you're using a GS, enter the Control Panel before taping, choose *Display*, and set the screen border color to *Black*. The border goes onto the tape, and blue can conflict with the page illustrations. If you're using a tape recorder to send sound to the VCR, make sure a cassette is in and the machine is in *Record* mode. If you're using a microphone mixer, make sure it's turned on and ready.

Boot the Slide Show disk, and the book will automatically begin with the *Black* picture. With that screen showing, put the VCR into *Record* and begin videotaping. Press the spacebar to advance pages. As each picture comes onto the screen, a student reads the text into the microphone. If the book is composed of pictures only, students can still come to the microphone and describe the images. After the last page, press the spacebar to return the Slide Show to the *Black* picture, completing the loop. Stop the VCR. That's all there is to it.



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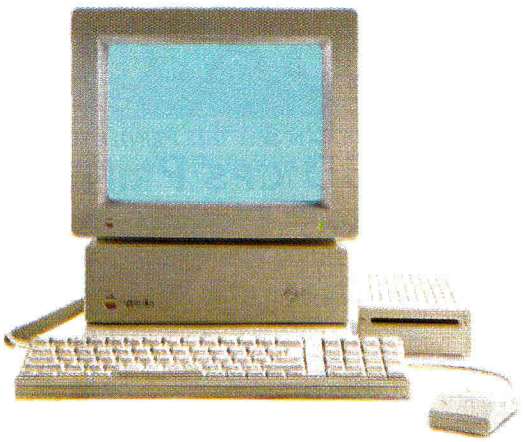

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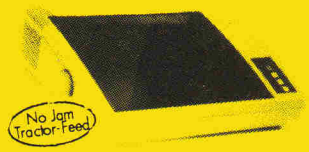

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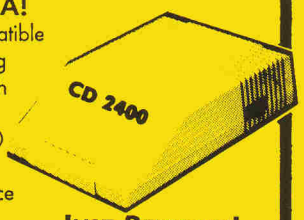

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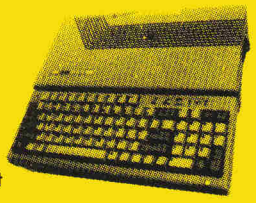

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Environmental ISSUES

By MARC APFELSTADT

What can a graphics environment offer a diehard fan of AppleWorks Classic? Energy conservation, for starters—maximum ease of use with a point-and-click interface. For activists thinking of making the switch, *inCider* profiles GEOS and AppleWorks GS.

IF THERE'S A DIVIDING LINE BETWEEN GROUPS OF APPLE USERS, IT PROBABLY SEPARATES those who prefer a graphics-based environment from those who want to work primarily with a text-based system. Currently on the market is a range of powerful software that can satisfy the needs of either type of Apple enthusiast, so the problem is deciding which segment of the II population you fall into.

The roots of Apple II computing are solidly in the 8-bit text environment. As our computers gained features like MouseText, however, even text screens took on some fairly sophisticated graphics-like features, while users of earlier text-based products had to learn completely different sets of commands for each program ("Let's see, was it Control-D to *delete* the word, or to move *down*? Oh, yeah, *do* format the *disk*!").

Of course, there are a number of single programs that can meet your needs if you're primarily a "single-function" computerist who does only word processing or spreadsheet manipulation. It's also worthwhile to look at integrated ►

Illustration • Nicholas Wilton

packages that let you learn one set of commands and do a variety of tasks. **AppleWorks 3.0** is the standard against which integrated text programs are measured, and it's adept at carrying a somewhat consistent set of commands from one module to another. (See "AppleWorks 3.0: A New Classic," August 1989, p. 44, and "Life with AppleWorks," December 1989, p. 90, for details.)

The 16-bit GS introduced a whole new concept of the II environment, following the Macintosh's tradition of standardized graphics interface and commands. What are the benefits of "going graphic"? First, you can use customized fonts to create a sophisticated finished product. In addition, you can incorporate pictures right into your documents and preview the finished product without guesswork—no more physical cut and paste. Related to that is the visual ease of menu structures and built-in support for the mouse as a pointing device. For many people, the point-and-click interface is the most natural link between mind and computer.

What are the potential problems of a graphics interface? To begin with, software that must update a picture-screen image will be inherently slower than a text-based program. Adjusting thousands of memory locations takes more time than adjusting a few hundred, and the screen is just a special display of a reserved set of memory locations in the computer. As a result, graphics programs often feel more sluggish in general. Another possible drawback is the use of graphics representation for file storage. When you get a file structure that contains multiple folders and layers of folders, finding the one you want can be time-consuming. Finally, for some people, using a mouse just doesn't feel natural.

For II users ready to make the transition, two sophisticated graphics environments furnish productivity capabilities and integrated data exchange. Berkeley Softworks' **GEOS** (Graphic Environment Operating System) is an 8-bit program that provides all Apple users with a graphics-based interface, while **AppleWorks GS** brings a solidly functional group of program modules to the 16-bit machine and its Mac-style environment. (For further reading, see "AppleWorks GS: Worth the Wait?" March 1989, p. 34; "Ten Tips & Hints," June 1989, p. 52; "A New Environment," Reviews, September 1988, p. 31; and "Brave New GEOS," June 1989, p. 67.)

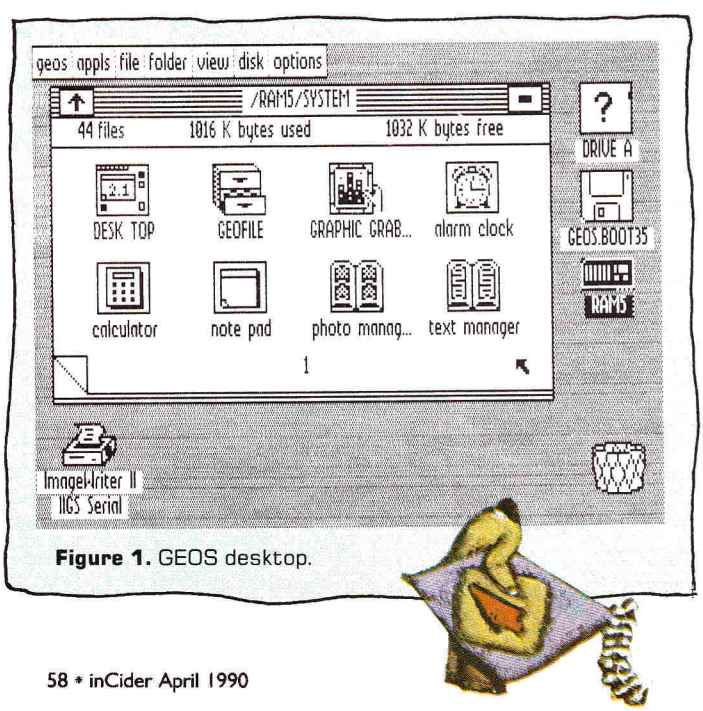


Figure 1. GEOS desktop.

SMOOTH OPERATOR

GEOS is a fairly recent addition to the multifaceted 8-bit software arena—and it's an important one. In fact, it's a whole new operating system, treated as an overlay on the ProDOS file-storage standard. It's ProDOS compatible, with the following exception: An extra single data block of header information, outside the standard ProDOS file definition, provides quick access to certain file information for fast updating of menu-screen graphics. Copying the file from one place to another within GEOS moves both the file and the header block, while copying the file from ProDOS moves only the main file blocks, leaving the header information behind.

In addition, several standard ProDOS-disk check-and-repair routines will flag the header blocks as "unused disk blocks marked used" and remove them, rendering the file inaccessible to either GEOS or ProDOS. This feature was a conscious choice on the part of the software's authors, and it doesn't weaken the system in any way as long as you understand what *not* to do. On the positive side, GEOS gains a significant speed enhancement for certain functions as a result. One tip on data integrity: Configure dedicated GEOS disks and label them as such, and avoid mixing information between GEOS and ProDOS.

What exactly is GEOS? To begin with, GEOS is an integrated system of programs for the 128K IIe, IIc, IIc Plus, or IIGS. The product line includes the main GEOS module, with geoPaint, geoWrite (with geoSpell), an array of desk accessories, and the GEOS desktop equivalent, plus the spreadsheet program **geoCalc** (reviewed in March 1990, p. 30), the database manager **geoFile** (February 1990, p. 30), and the versatile page-layout application **geoPublish** (February 1989, p. 88).

Figure 1 shows the GEOS desktop, from which all programs are launched. As you can see, the graphics interface (displayed in double hi-res) lets you integrate text with graphics material, but the highest-quality printout is forced into graphics mode (excellent, but slow). In all fairness, printouts from GEOS are often much faster than equivalent page counts from GS-specific programs.

The desktop shown in **Figure 1** serves as the basic file manager for the system. If you've run other GS or Apple IIe/IIc desktop software, GEOS might take just a bit of getting used to. As a port from the Commodore GEOS environment, some features work differently on Apple systems.

For example, pull-down menus stay down until you click to select an option or click outside the menu area. (With GS software, menus roll back up when you release the mouse.) In addition, the file-selector system is set up like a stack of file cards. By clicking on the corners, you can scroll through the files in sets of eight, but you can see only eight at a time.

While the GEOS desktop is somewhat different from the Finder and similar program launchers, it's certainly cleanly implemented and efficient. There are a few minor limitations on large systems, however. The desktop can look at only one device at a time for catalogs or file lists, and a single system can access a maximum of four storage devices. In practice, GEOS grabs the first four valid devices it finds, working down from slot 7. While there are procedures to change the active devices, you're still faced with a maximum of four at any one time. On most systems, that restriction won't pose a problem. (S6 D1, S6 D2, and a RAM disk would be a typical setup.)

In a parallel limitation elsewhere within the system, a number of

GEOS fonts are present, but only the first eight in the Font subdirectory are available for use. To change the usable fonts, the suggested method is to make up individual "application disks" containing the eight fonts you plan to use; you can then run the application from a disk on which the fonts are available.

The printer icon in the lower left corner of **Figure 1** is onesign of forethought and planning in this environment: Your choices for printer, RAM expansion, and pointer device are stored as part of the system configuration. That way each new application you boot already knows how to access your system's equipment.

In addition, the software offers a large variety of options for printers and interfaces. If you've ever felt locked in and constricted by the ImageWriter/Super Serial Card combination, GEOS can certainly ease your mind. The system software currently supports more than 25 common printers and a variety of interfaces.

One of the first questions you ask about any complex environment is "How fast is it?" GEOS is, in fact, disk-based in its most basic implementation; much of your work will involve disk access for storage of temporary files. The code is efficiently written, however, and the program is bearable on a two-drive system. The recommended procedure is to assemble a GEOS "work disk," containing the applications you use most frequently. Omitting unused modules preserves disk space for file storage.

For optimum use, a 1-megabyte memory-expansion board lets you run several application programs from RAM. In fact, when you run GEOS from a RAM disk, you'll think you're moving between components of a single program instead of switching applications.

Another aspect of the environment also contributes to GEOS' integrated feel: GEOS programs use a standardized clipboard format, so that you can pass information back and forth easily among modules. In addition, you can assemble clipboard "scraps" of information or illustrations you use often and save them as "albums" or libraries for easy access.

Printed output from GEOS surpasses that of many IIe-based font programs. **Figure 2** shows a representive sample from an ImageWriter II, utilizing the software's various stylistic features. As an added bonus, you can use your printer's built-in type styles in draft and near-letter-quality modes. Many of the formatting options of graphics mode are dropped, but the chance to use text-based output is a true advantage when you need the speed for large print runs. Incidentally, GEOS supports the LaserWriter, with an added twist: At least one commercial vendor, **LaserDirect**, will accept GEOS files on disk and mail LaserWriter-printed output back to you. If you need it in a hurry, the company even offers Federal Express or UPS return shipment, so there's no need to invest in hardware megabucks to get top-quality final output. **Figure 3** shows another document printed on a laser printer; you can see just how much difference the output device can make.

What about using information from other programs? The public-domain programs **BIN.to.GEOS** and **GEOS.to.BIN** convert fonts and graphics images from any of the thousands available for GEOS in the Commodore environment. In addition, GEOS offers translators to import data from AppleWorks and text-file formats, as well as graphics from Springboard's Newsroom and Broderbund's Dazzle Draw and Print Shop. On the whole, these built-in conversion utilities are efficient. One caution: The current AppleWorks translator doesn't handle files from version 3.0 well. Save your data as a text file and import it into GEOS.

This is a sample of GeoWrite printed output. BSW typeface is shown here in plain, **bold**, *italic*, outline, underline, super and sub script. There are eight fonts provided with the system, but Berkeley Softworks has a utility to allow conversion of any font or graphics file downloaded from the massive libraries of Commodore GEOS files available.

Figure 2. GEOS' ImageWriter output.

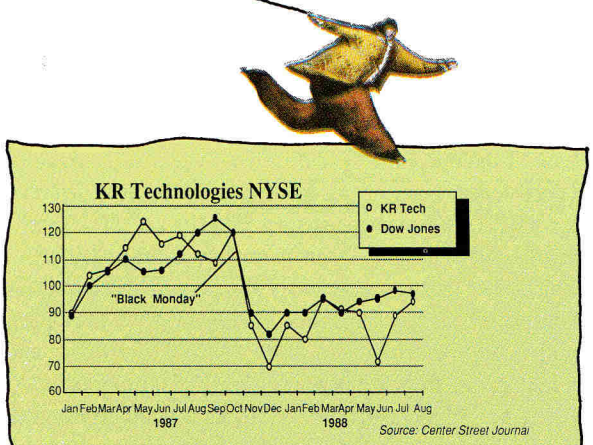


Figure 3. GEOS' LaserWriter output.

What's missing? Really only two things. The first is true export capability. While you can get anything *into* GEOS format, it's virtually impossible to share information with non-GEOS users. If you enter your document under GEOS and need it in IBM or Mac format (or ProDOS, for that matter), you'll have to retype it or try to scan it from printed output. Exported files lose many of their special features, such as fonts and graphics; perhaps it would be counterproductive to offer an export option at this time.

The other major function not currently available is a telecommunications module. Berkeley offers a file compactor/translator, which compresses files for modem transmission by ProDOS communications packages. If you're on the receiving end, you "detranslate" the file, restoring the critical extra information block necessary for GEOS to use the file.

On the whole, the niche for GEOS would seem to be IIe and IIc owners who want to run an "integrated graphics environment" without investing a lot of time and money in new hardware. GEOS makes a fine stand-alone environment for certain users of IIe and IIc systems with at least 512K of RAM—those who aren't concerned with sharing information through on-line systems or with other hardware configurations.

While you can't have multiple documents open at the same time, ►

the clipboard makes data transfer among modules relatively seamless. The interface is powerful yet easy to negotiate. Given its comparatively low cost, GEOS is an appropriate option, particularly as an entry-level system, for many users. It certainly gives you the opportunity to run some of the latest developments in software technology, even if your equipment isn't a GS.

RIGHT OUT OF THE BOX

AppleWorks GS has now been around for almost two years and offers IIGS users a multifaceted 16-bit environment. The package's various component modules (word processor, spreadsheet, database manager, graphics program, page-layout software, and communications utility) can easily meet the needs of many users, and a broad base of user support is available from dealers and on-line networks. Like GEOS, AppleWorks GS is graphics-based, with the added benefits of color display and printout support. In addition, as a standard GS program it fits most of Apple's Human Interface Guidelines for command structures and sports a user interface compatible with almost all standard GS software.

Version 1.1 of the program, a major upgrade, benefits from the release of the operating system GS/OS System 5.0.2. A significant enhancement in speed of graphics display makes the program much more feasible as a solitary productivity platform. Boot time is significantly reduced, and screen redrawing is much faster in most instances. The new system software also permits access to extra font characters for foreign languages. The new version of AppleWorks GS offers an updated edition of the ImageWriter driver and can also import files from the new AppleWorks 3.0 program.

Given the common practice of enhancing 8-bit AppleWorks Classic with utility programs, is AppleWorks GS limited by comparison? Not really; in fact, many users have asserted during CompuServe's on-line discussions of the subject that AppleWorks GS is not just six modules, but seven. What's the extra function? All the new and classic desk accessories (NDAs and CDAs) you can add. With everything from alarm clocks to "meltdown" (a screen-saver utility) available from vendors and public-domain libraries, the concept is certainly valid. In fact, installing your favorite accessories on the boot disk is much like running AppleWorks Classic with Beagle Bros' **TimeOut** modules; just add the features, enhancements, and utilities you use regularly.

How does AppleWorks GS stack up against AppleWorks 3.0 and GEOS, its closest 8-bit rivals? One big advantage is AppleWorks GS' flexibility in printed output. Specifically, the wide variety of GS fonts available within the program, coupled with high-quality print drivers, produce the most professional-looking output, even on an ImageWriter II. (**Figure 4** shows a sample from letter-quality mode.) Of course, as print quality goes up, speed goes down; AppleWorks GS can prove to be a slow way to handle mailing labels, for example. To get maximum use out of AppleWorks GS, an accelerator board with substitute microprocessor, such as Applied Engineering's **TransWarp GS**, is a must. (See "Fast Company," Editors' Choice, March 1989, p. 104; "Breaking the Speed Limit," August 1989, p. 50; and "Faster TransWarp," What's New, p. 18 in this issue, for details.) Even graphics print speed picks up. Your GS calculates graphics information "on the fly" during the printing process, but those pauses between printhead passes virtually disappear when you use an accelerator. And when you combine TransWarp GS with System 5.0.2 software, the gain in speed is particularly significant.

AppleWorks GS is perhaps the most integrated program currently available; unlike GEOS, it even lets you keep multiple documents open at the same time. (**Figure 5** shows a sample screen with both word-processing and graphics windows open.) What about the size of those files? The documentation's only reference to restrictions says that file size is "limited by system memory." In practical terms, the more expanded memory you add, the larger your files can be. As a point of interest, AppleWorks GS files may sometimes be larger than equivalent files in AppleWorks Classic. The reason is the extra information regarding font data, region coordinates, and sizes; graphics data always take up more space than text.

In fact, the optimum system to run AppleWorks GS would probably have 2 megabytes of RAM or more, and either two 3½-inch drives or a hard disk. Cutting to a single 3½-inch drive would instigate massive amounts of floppy shuffling, and operating the software with 1 megabyte of RAM would leave a surprisingly small work area for your files. You could get more usable RAM by loading only one or two of the modules into memory, but in a way that defeats the purpose of having a fully integrated environment.

PRODUCT INFORMATION

AppleWorks 3.0, $249
AppleWorks GS 1.1, $229, $29 upgrade from 1.0
Claris Corp.
5201 Patrick Henry Drive
Santa Clara, CA 95052-8168
(408) 727-8227

GEOS, $69.95
geoCalc, $69.95
geoFile, $69.95
geoPublish, $99.95
Berkeley Softworks
2150 Shattuck Ave.
Berkeley, CA 94704
(415) 644-0883

LaserDirect
6831 West Howard Ave.
Milwaukee, WI 53220
(414) 543-9923

Publish It! 3
Timeworks
444 Lake Cook Road
Deerfield, IL 60015-4919
(708) 948-9200
$129.95

TimeOut DeskTools, $49.95
FileMaster, $49.95
Graph, $89.95
MacroTools, $25
MacroTools II, $25
QuickSpell, $69.95
ReportWriter, $79.95
SideSpread, $49.95
SpreadTools, $59.95
SuperFonts, $79.95
Telecomm, $69.95
UltraMacros, $59.95
Beagle Bros
6215 Ferris Square
Suite 100
San Diego, CA 92121
(619) 452-5500

TransWarp GS
Applied Engineering
P.O. Box 5100
Carrollton, TX 75011
(214) 241-6060
$399

How do the individual modules measure up? AppleWorks GS' graphics program is relatively powerful for producing flat-plane drawings with color fill. One interesting feature is the program's ability to mix "paint" segments with "object" segments (movable and sizable), but it lacks some of the fine points you find in stand-alone paint programs—3-D rotation and scaling, for instance. Trade-offs are inevitable if an integrated package is to fit into a single computer; on the whole, you can perform a significant portion of your artwork here. You could handle details with a dedicated program and import the screen image as an alternative.

Here's a big plus: AppleWorks GS is the one integrated package that comes equipped with telecommunications features. The software maintains a directory of frequently dialed numbers as part of a communications document, and each number can have its own

distinct array of parameters (baud, parity, and so on).

Two features of fully implemented telecommunications packages are lacking, though. The first is *terminal emulation*—the ability to make your GS mimic another kind of computer when talking to a remote machine. You need this feature most often when dealing with minicomputers such as the VAX; if the software can pretend to be a standard terminal, then you may be able to edit text in a page-oriented mode instead of line by line. With AppleWorks GS, you can log onto a VAX just fine, but with an "unknown" terminal specification you can't use full-screen text editors.

The other feature that would be a nice addition is *log-on scripting*. In essence, you can instruct some terminal programs to follow a prescribed set of steps, answering prompts and logging onto a remote site automatically. In the most powerful setups, the software is semi-intelligent, reacting to prompts and branching to new instructions based on the information received. With AppleWorks GS' communications module, on the other hand, you must enter all commands and respond to the host computer's prompts. One option to meet this need in lieu of a change in the program might be a macro desk accessory. (A *macro* is a comparatively short string of keystrokes that substitutes for a longer series.) Still, the communications module does offer a sign-on function for many of the major networks and bulletin boards. For most people, it's certainly adequate.

AppleWorks GS also contains a page-layout module, for moderately sophisticated desktop-publishing projects that can include information from all the other modules. While the program lacks the full palette of features found in Timeworks' **Publish It!** and certain other dedicated page-design programs, it does provide a means to combine text and graphics elements into a single printed page.

The program offers some unique aspects, as well. Specifically, many desktop-publishing products let you import clip art, but you can't change the size of the images. With AppleWorks GS, however, you can resize in a number of ways. The software also offers linked text flow among multiple regions, the option of using both left and right master pages, and support for headers and footers.

One feature missing is the ability to wrap text around graphics objects. While you can specify foreground and background placement, text won't adjust automatically to surround pictures. The only way to work around this problem is to create multiple linked text regions and place them manually against the graphics. The update documentation explains this process clearly in a step-by-step format.

What else has changed? Database file format in the most significant shift—different enough that you must use a special conversion program to import files from version 1.0. In general, you can't move database files from 1.1 back to 1.0. If you share files with someone who is still using version 1.0, encourage him or her to upgrade to the new release. The speed enhancements and bug fixes alone are well worth the expense.

AppleWorks GS print samples in the highest quality mode.

Figure 4. ImageWriter II letter-quality with AppleWorks GS.

THE BOTTOM LINE

Is the lure of the graphics interface strong enough to make an AppleWorks Classic fan try either GEOS or AppleWorks GS? If you're running a IIe or IIc and want sophisticated font-based output, GEOS is definitely less expensive than the comparable combination of AppleWorks 3.0, TimeOut SuperFonts, TimeOut Graph, Publish It!, and related clip art. The ability to mix text and graphics freely and easily, coupled with a lower price for the whole shootin' match, makes GEOS very competitive. If you want to get disk information to non-GEOS users, however, or if you do a lot of telecommunications work or were hoping to get multiple windows on your desktop from a graphics-based program, GEOS isn't going to meet your needs.

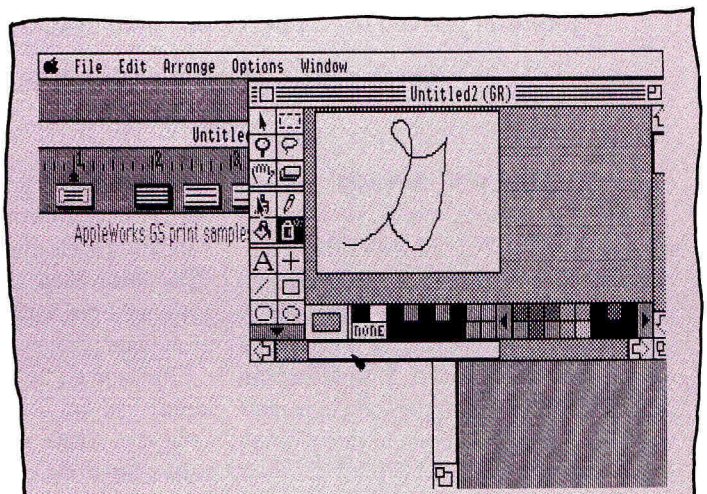
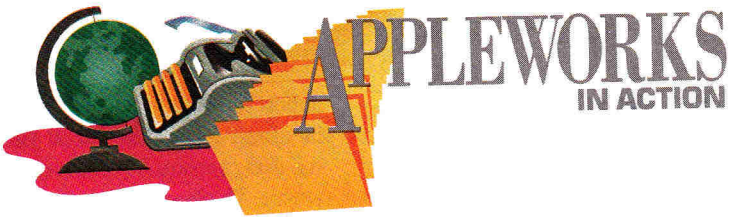


Figure 5. AppleWorks GS' multiple windows.

AppleWorks GS is the logical solution if you have a GS and if color, graphics, and font-based output are more important than print speed. Don't ignore the advantages of an established network of support, either: Compared with GEOS, AppleWorks GS shares a fairly standard format for uploaded files and public-domain data, and you'll find a wider range of accessories, advice, and special-interest groups on the various on-line services and bulletin boards. Most significant for GS users: The basic modules right out of the box, although slower than either AppleWorks 3.0 or GEOS, include a great combination of features that will make immediate use of the full potential of your machine.□

MARC APFELSTADT IS A PROFESSOR OF MUSIC AT THE UNIVERSITY OF NORTH CAROLINA/GREENSBORO. WRITE TO HIM AT 2119 TARRYWOOD DRIVE, GREENSBORO, NC 27408. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.



ROOM AT THE DESKTOP

With a little perseverance, some creative formatting, and a few graphics, you can use AppleWorks' basic text tools to produce an attractive, informative newsletter.

By RUTH K. WITKIN

IF YOU THINK YOU CAN DO DESKTOP publishing only with software designed specifically for that purpose—well, think again. A case in point: the front page of *The Babyshoes Gazette*, shown in **Figures 1**, **2**, and **3**, a publication produced with AppleWorks by parents in Abner County and given to sitters caring for their children.

It's not the fanciest publication around, but it gets the message across at minimum cost. You can also update it quickly and easily—again, at minimum cost. The key to success is three-column formatting and careful positioning of the paper so that each column prints at about the same distance from the top of the page.

THE FRONT PAGE

The front page also features these post-printing elements (none of which is required to complete the template):

- *Vertical lines between columns and between graphics in the middle column.* I cut these lines out of a magazine and pasted them in with *art wax*, which lets you lift and shift to your heart's content. Clearly, you can also draw these lines with a black felt-tip pen.
- *Gazette title.* I pasted over (by hand) the AppleWorks-produced title with one printed in *los.angeles.24* (with shadowing), one of Beagle Bros' **TimeOut SuperFonts**.
- *Three Print Shop graphics (babyshoes, baby, and kids).* I imported these graphics to an AppleWorks file from Broderbund's program **The Print Shop** via **TimeOut Paint**. After printing from AppleWorks, I pasted them by hand into position.

Formatting's the thing this month, so you won't find lots of detail on how to enter or edit text. That's something I'll assume you know how to do really well. Again, a reminder that I'm using AppleWorks 3.0, which makes a difference in tabbing to the bulleted paragraphs and in using boldface.

Start up AppleWorks and create a new word-processor file. Name it **BABYSHOES**. You should now see the Review/Add/Change screen with the cursor in line 1 column 1.

ENTERING AND EDITING TEXT

Figures 1 and **2** contain the text, line numbers, and "blots," which show you where to press Return. Sure, it's a lot of typing, but you need enough text to fill three columns. Press Open apple-Z (OA-Z) to keep the blots visible as you work.

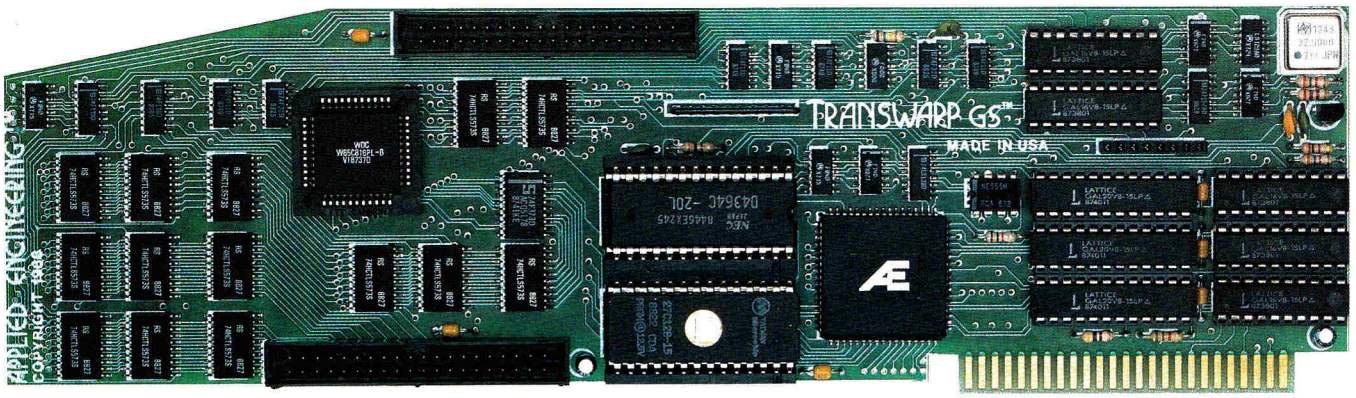
Before you type anything, modify the tab ruler so that the bulleted paragraphs (lines 24 through 35) can start at the proper place: Press OA-T to start the Tab command and hit Return to confirm *Modify current*. Press the right-arrow key three times to move the cursor along the ruler to *Column 4*. Now type **L** to set a *Left* tab stop. Press Escape to leave the tab ruler.

To be sure your results match mine, press the spacebar only *once* between sentences. Here are some other helpful hints:

- In line 5, hold down the equal-sign key until the cursor reaches line 6 column 46. In line 10, hold down the equal-sign key until the cursor reaches line 11 column 46.
- In line 7, type the sentence **Written and Published by**... (and so on), press the spacebar 20 times, then type **Summer/Fall 1990**.
- In lines 24, 27, 30, and 35 (bulleted paragraphs), type a lowercase letter *o*, press the tab key, and type the text. The indentation you'll enter shortly will give the text the proper wraparound.
- In lines 69 and 79, hold down the underline key until the cursor reaches column 23. In lines 81 and 91, hold down the underline key until the cursor reaches column 22.
- In lines 85 through 90 (contents lines), press the spacebar twice before typing the page number.
- In line 118, hold down the right-arrow key until the cursor reaches column 46, then type the page number, **1**. AppleWorks' automatic page numbering is out of bounds because the front page (and every other page created this way) actually consists of **three** pages. To AppleWorks, each column is a page.

Now enter the text shown in **Figures 1** and **2**, paying careful attention to line numbers and blots. If you make a typographical error, press the delete key to back up the cursor. When you've finished, the cursor should be on line 118 column 47.

Before moving on to formatting, check your text. If something's missing, place the insert cursor (a blinking bar) on the character to the right of the spot where the insertion belongs. If you discover a typo, place the overtype cursor (a blinking rectangle) atop the character you want to replace. (Pressing OA-E switches between the cursors.) To erase, place either cursor on the doomed character ►



Fan mail GS

"TransWarp GS has performed flawlessly ... I've become addicted to computing at warp speed ... once you get a taste, you'll wonder how you ever got anything accomplished with your IIGS lumbering along at an unaccelerated pace ... it's an improvement you're going to appreciate every time you place your fingers on the keyboard."

— Owen Linzmayer, Technical Editor, A+

"I'm stunned ... bordering on speechless. I used to dread waiting and waiting to run GS/OS. I don't anymore. TransWarp GS breathes new life into my computer. Thanks AE, you guys are in a class by yourselves."

— Joe Kohn, The Source

"Once I started using the original TransWarp in my old IIe, I found I couldn't do without it, TransWarp GS promises to be equally indispensable."

— Lafe Low, Review Editor, Incider

"This is the card you want. Sell whatever secondary peripherals you must in order to get a TransWarp GS plugged in."

— Joe Abernathy, Houston, TX

"Together with my RamKeeper, you have given me a color Mac at one-third the price. Thanks."

— Richard Artz, Ft. Collins, CO

"I have conducted some recent tests which indicate that the "little" IIGS (with TransWarp GS) outperforms the MacSE. Your engineering department should take a bow."

— George Dombrowski, Jr., Chicago, IL

"TransWarp GS will be the best $400 you ever spent."

— Dan Muse, Editor in Chief, Incider

"WOW WOW WOW! I am completely blown away with how fast it goes. Unbelievable."

— Dean Esmay, A2-Central

"TransWarp GS is by far the best money I've spent on my GS since purchasing my DataLink. Hats off to everyone at AE for another great product!"

— Greg Dacosta, GEnie

TransWarp GS is rapidly changing the way people use the Apple IIGS. Join the thousands of TransWarp GS owners who've discovered computing at Warp Speed. For more than nine years, Applied Engineering has led the way with proven, reliable products for the Apple II line. We plan to keep it that way. Thanks for the vote of confidence, folks.

TransWarp GS Accelerator $399

Order today!

To order or for more information on TransWarp GS, 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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Table. Format for **Figure 1.**

Format Group 1 sets margins around the page, pauses the printer after each page (column) so that you can align the paper for the next page (column), increases the size of the gazette title to 4 characters per inch, and centers it. The left and right margins assume that platen width is set at the standard 8 inches, which leaves quarter-inch left and right margins on 8½-inch-wide paper. Hit Escape after each group of formats, so that you can move the cursor to the next line.

Line	Type	Press	Type	Press
1	TM	Return	.8	Return
2	BM	Return	0	Return
3	LM	Return	0	Return
4	RM	Return	0	Return
5	PE	Return	—	—
6	CI	Return	4	Return
7	CN	Return	—	—

Format Group 2 cancels centering and tells AppleWorks to print proportionally spaced text. Proportional spacing gives each character (whether skinny *i* or chubby *w*) only the width it needs, unlike standard spacing, which gives each character the same width. AppleWorks has two kinds of proportional spacing: P1 and P2. P1 characters print about 13 characters to the inch; P2 characters are slightly wider, printing about 12 characters to the inch.

12	UJ	Return	—	—
13	P1	Return	—	—

Format Group 3 sets a right margin that defines the left-hand column and tells AppleWorks to print the *Welcome . . .* heading at 8 characters per inch, which defeats proportional spacing.

23	RM	Return	5.7	Return
24	CI	Return	8	Return

Format Group 4 returns the text to proportional spacing.

28	P1	Return	—	—

Format Group 5 gives the text in the bulleted paragraphs a three-character indentation at wraparound.

40	IN	Return	3	Return

Format Group 6 cancels indentation.

65	IN	Return	0	Return

Format Group 7 forces a new page, sets a top margin of zero so that there's less guesswork needed to align columns, sets margins defining the middle column, and tells AppleWorks to print the next heading at 8 characters per inch.

```
1   THE BABYSHOES GAZETTE ■
2   ■
3   ■
4   ■
5   ---------------------------------------------------------------
6   ---------------------------------------------- ■
7   Written and Published by the Community Parents Association
8   of Abner County
9   Summer/Fall 1990 ■
10  ---------------------------------------------------------------
11  ----------------------------------------------■
12  ■
13  ■
14  ■
15  WELCOME TO THE 1,000,000■
16  ■
17  When you become a babysitter, you join more than one million
18  young people enjoying the trust of parents who are out of
19  the home briefly. Babysitting is a serious, responsible job
20  but it can be fun as well. ■
21  ■
22  Here are points to keep in mind right from the start:■
23  ■
24  o  When you become a sitter you take the place of the
25  parent. This doesn't mean that you become the parent.■
26  ■
27  o  You must handle the child to the best of your ability
28  according to the rules set down by the parent.■
29  ■
30  o  You yourself are a special human being with special
31  skills and ways of your own. It pays to understand yourself
32  as a sitter, the things that work for you and the things
33  that don't work.■
34  ■
35  o  As a sitter, you're a pretty important person in the life
36  of the child. He or she will watch you closely and copy from
37  you. Be sure you're setting a good example.■
38  ■
39  The aim of this guide is to help you meet your
40  responsibility in caring for children, whether you're an
41  experienced sitter or just beginning to take care of■
42  ■
43  .....Continued on page 3■
44  SAFETY FIRST
45  ■
46  The most important part of your job is safety. The child you
47  care for must be kept away from harm. The best way to do
48  this is to remove dangers and keep accidents from happening.■
49  ■
50  Indoors ■
51  ■
52  Though a home isn't one big boobytrap, people do have
53  accidents. Here are some things to look out for:■
54  ■
55  In the kitchen, make sure that children stay away from hot
56  stoves, hot electrical appliances, and electrical cords.
57  Wipe up grease right after it's spilled. If a glass breaks,
58  use wet paper toweling to wipe it up and put the pieces in a
59  paper bag marked "broken glass."■
60  ■
```

Figure 1. Text for front page.

Line	Type	Press	Type	Press
74	NP	Return	—	—
75	TM	Return	0	Return
76	LM	Return	2.7	Return
77	RM	Return	2.9	Return
78	CI	Return	8	Return

Format Group 8 returns the text to proportional spacing.

81	P1	Return	—	—

Format Group 9 prints the next heading at 8 characters per inch.

89	CI	Return	8	Return

Format Group 10 returns the text to proportional spacing.

Line	Type	Press	Type	Press
92	P1	Return	—	—

Format Group 11 forces a new page and sets margins defining the right-hand column.

133	NP	Return	—	—
134	LM	Return	5.5	Return
135	RM	Return	.2	Return

Format Group 12 prints the next heading at 8 characters per inch.

168	CI	Return	8	Return

Format Group 13 returns the text to proportional spacing.

171	P1	Return	—	—

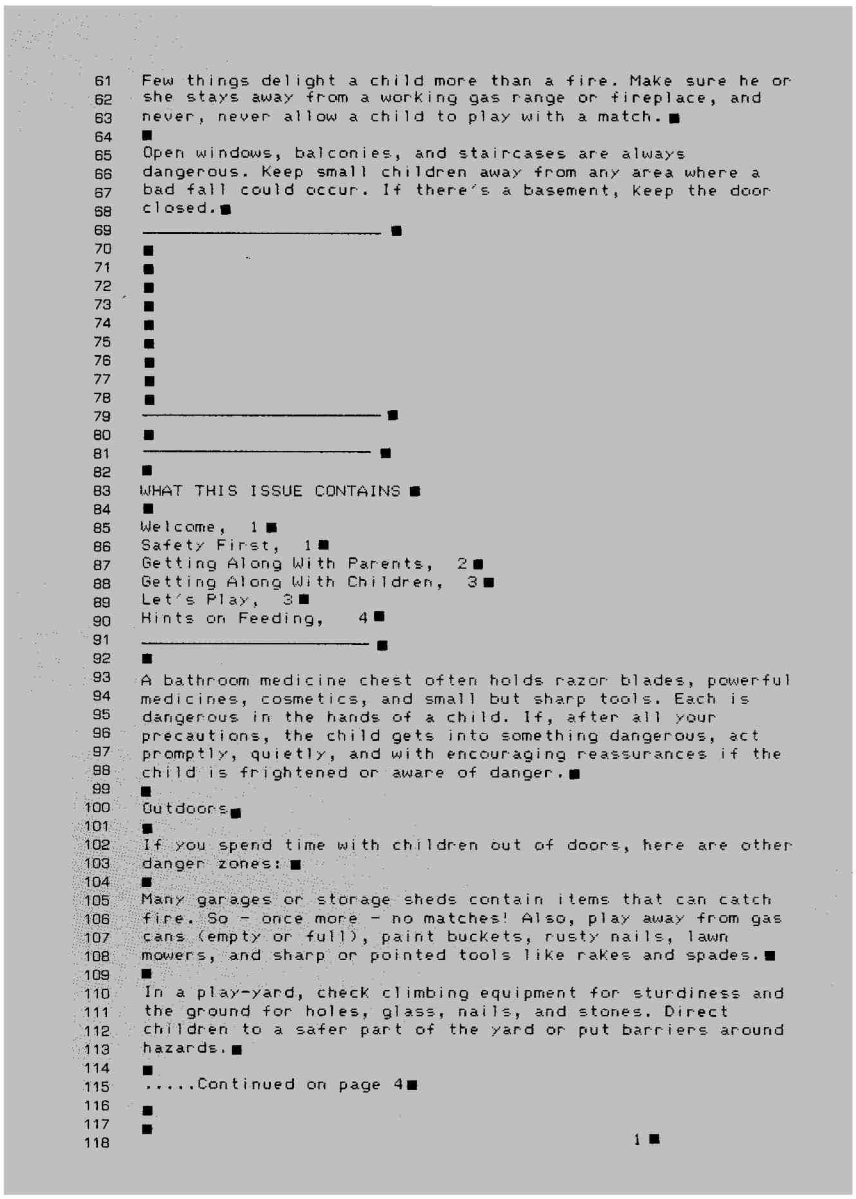


Figure 2. Continuation of front-page text.

and press OA-Delete. When everything is as it should be, press OA-S to store the document on disk.

THE UNFORMATTED DOCUMENT

Seeing how something looks before formatting can give you an idea of the tasks that lie ahead. So turn on your printer; press OA-P to start the print command. Press the return key to confirm *Beginning*. Now press the return key to select the printer (or type a printer number, then Return). Press the return key again to confirm one copy.

When the printer stops, there's your document in raw form. Arggh! Your printout is a far cry from *The Babyshoes Gazette* in **Figure 3**, but not to worry. In a short while, you'll produce the same effect.

FORMATTING THE DOCUMENT

The accompanying **Table** shows the locations of format options (a descriptor preceded by dashes—for instance, --------*Top Margin: 0.8 inches*). To enter an option, place the cursor on the line indicated, regardless of what it contains, and press OA-O to bring up the Printer Options screen. Then follow the instructions shown in the *Type* and *Press* columns.

To simplify matters, I've grouped formats wherever possible. This means you can enter several formats, one after the other, while you're in the Printer Options screen. You don't have to hit Escape after each one, then start from OA-O again. After you enter an entire group, hit Escape to return to the document. With a group that consists of only one format, hit Escape after entering the format.

BOLDFACE TYPE

Doing titles and headings in boldface will make them stand out. Press OA-1 to jump the cursor to the beginning of the document. Now place the cursor on line 8 column 6 (*THE BABYSHOES GAZETTE*). Press Control-B. The caret that appears indicates the start of boldface. Boldface will continue until you stop it, so move the cursor to the end of the title and press Control-B again.

To make the following headings bold, place the cursor on or before the first character in the following lines, and press Control-B. After the last character in the heading, press Control-B again: lines 16 (*Written and Published by...*), 25 (*WELCOME...*), 79 (*SAFETY FIRST*), 90 (*Indoors*), 138 (*WHAT THIS ISSUE CONTAINS*), and 169 (*Outdoors*).

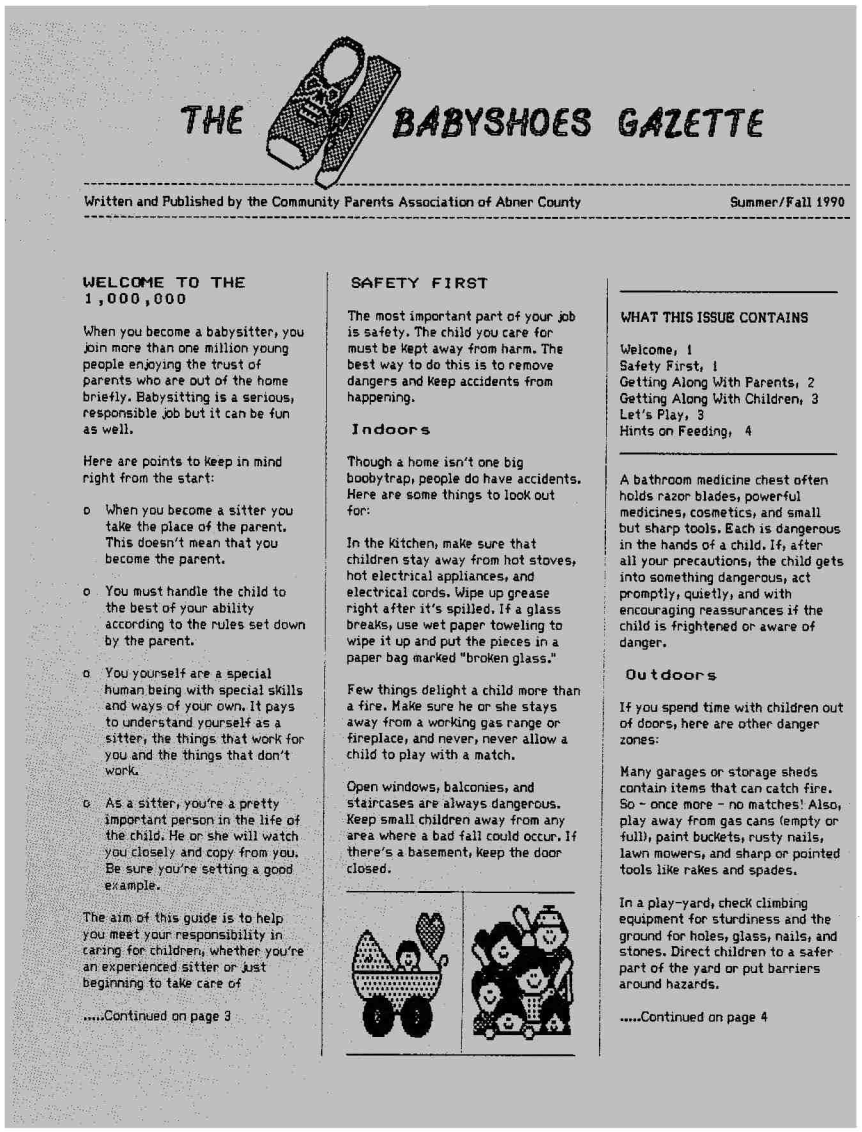
Formatting's complete, so spend a few minutes checking each format indicator on your screen with the listing here. When you're sure you've entered everything properly, press OA-S to store the document on disk.

PRINTING THE FRONT PAGE

Now print the front page. Be sure your printer is on; assuming you're using continuous-feed paper, position the top edge of the paper at the top edge of the print shield. Now press OA-P to start the Print command. Press the return key three times to confirm *Beginning*, printer, and one copy. While the printer chugs away at the first column, try to get a sense of where the printhead is striking, so that you can align the paper for the second column.

The printer pauses and awaits your instructions. Pretend you're about to print the first column again. Turn the printer knob counterclockwise to move the paper backwards. When the printhead is poised to strike the top line in the first column, press the computer's spacebar. The printhead jumps to the center of the page, busily producing the second column.

When the printer pauses again, turn the printer knob counterclockwise to align the ▸



THE BABYSHOES GAZETTE

Written and Published by the Community Parents Association of Abner County — Summer/Fall 1990

WELCOME TO THE 1,000,000

When you become a babysitter, you join more than one million young people enjoying the trust of parents who are out of the home briefly. Babysitting is a serious, responsible job but it can be fun as well.

Here are points to keep in mind right from the start:

- When you become a sitter you take the place of the parent. This doesn't mean that you become the parent.
- You must handle the child to the best of your ability according to the rules set down by the parent.
- You yourself are a special human being with special skills and ways of your own. It pays to understand yourself as a sitter, the things that work for you and the things that don't work.
- As a sitter, you're a pretty important person in the life of the child. He or she will watch you closely and copy from you. Be sure you're setting a good example.

The aim of this guide is to help you meet your responsibility in caring for children, whether you're an experienced sitter or just beginning to take care of

.....Continued on page 3

SAFETY FIRST

The most important part of your job is safety. The child you care for must be kept away from harm. The best way to do this is to remove dangers and keep accidents from happening.

Indoors

Though a home isn't one big boobytrap, people do have accidents. Here are some things to look out for:

In the kitchen, make sure that children stay away from hot stoves, hot electrical appliances, and electrical cords. Wipe up grease right after it's spilled. If a glass breaks, use wet paper toweling to wipe it up and put the pieces in a paper bag marked "broken glass."

Few things delight a child more than a fire. Make sure he or she stays away from a working gas range or fireplace, and never, never allow a child to play with a match.

Open windows, balconies, and staircases are always dangerous. Keep small children away from any area where a bad fall could occur. If there's a basement, keep the door closed.

WHAT THIS ISSUE CONTAINS

Welcome, 1
Safety First, 1
Getting Along With Parents, 2
Getting Along With Children, 3
Let's Play, 3
Hints on Feeding, 4

A bathroom medicine chest often holds razor blades, powerful medicines, cosmetics, and small but sharp tools. Each is dangerous in the hands of a child. If, after all your precautions, the child gets into something dangerous, act promptly, quietly, and with encouraging reassurances if the child is frightened or aware of danger.

Outdoors

If you spend time with children out of doors, here are other danger zones:

Many garages or storage sheds contain items that can catch fire. So - once more - no matches! Also, play away from gas cans (empty or full), paint buckets, rusty nails, lawn mowers, and sharp or pointed tools like rakes and spades.

In a play-yard, check climbing equipment for sturdiness and the ground for holes, glass, nails, and stones. Direct children to a safer part of the yard or put barriers around hazards.

.....Continued on page 4

Figure 3. Front page of three-column newsletter.

paper again the same way. Press the computer's spacebar and the printhead jumps to the right side of the page to produce the third column.

If column alignment is a tad off when you're finished, don't fret. If you feel you can do better a second time, go for it. But avoid making it your life's work. You'll find the eye quite forgiving—really.

CREATING YOUR OWN NEWSLETTER

Here are a few tips on how to go about creating your own newsletter:

- Plan the layout of text and graphics on paper. This goes for subsequent pages as well as front page.
- Try to get all writing and editing out of the way before tackling formatting.
- Enter only those formats affecting the entire document and first column (for instance, margin settings, page pause, and character size). Press OA-K to calculate page breaks. If the column continues on another page, enter a *New Page* indicator two lines above the end-of-page indicator, so you can leave a blank line and type in **Continued on page x** above the *NP* indicator. Press OA-K again. Move leftover text on the topic in the first column to the end of the document, where you can deal with it later. If you plan to continue the topic into the next column, leave the text where it is. Press OA-K.
- Scroll to the second end-of-page indicator and repeat the steps, entering formats, shifting text, and calculating page breaks. Do the same thing for the third column. Through all this, be patient with the process. Rest assured that you'll need several attempts to get things to fit and look just right. So be patient with yourself.

PRODUCT INFORMATION

The New Print Shop, $49.95
Print Shop GS, $59.95
Broderbund Software
17 Paul Drive
San Rafael, CA 94903-2101
(415) 492-3200

TimeOut SuperFonts
Beagle Bros
6215 Ferris Square
Suite 100
San Diego, CA 92121
(619) 452-5500
includes **TimeOut Paint**
$69.95

USING THE HIDDEN "UNDO"

AppleWorks has a hidden "undo" feature that can be a lifesaver during writing and editing. When you want to delete text, make it a habit to *move* (OA-M) the text to the clipboard instead of deleting it (OA-D). This way, if you change your mind and want the deleted text back, you can simply move it from the clipboard—providing you didn't copy or move anything else to the clipboard in the meantime. Remember that the clipboard is temporary storage, so if you turn off the computer, anything on the clipboard disappears.

NEXT MONTH

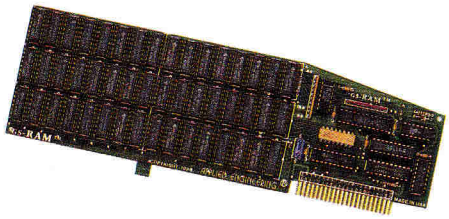
The AppleWorks spreadsheet contains many curiously wonderful twists and turns. Tune in for some of my favorite ways to bend it to your will in my next column, "Spreadsheet Shenanigans."□

RUTH K. WITKIN IS THE AUTHOR OF THE TEMPLATE/HANDBOOK SERIES *SUCCESS WITH APPLEWORKS* (*INCIDER*, IDG COMMUNICATIONS/PETERBOROUGH), *THE BEST BOOK OF APPLEWORKS* (HOWARD W. SAMS & CO.), AND *PERSONAL MONEY MANAGEMENT WITH APPLEWORKS* (JOHN WILEY & SONS). WRITE TO HER AT 5 PATRICIA ST., PLAINVIEW, NY 11803. ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A REPLY.

Three ways to grow a IIGS.

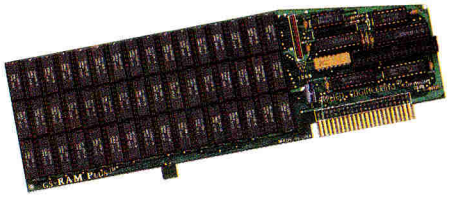
Applied Engineering makes three different memory cards for the IIGS because every IIGS owner is different. Each card was designed to suit specific needs:

1. **GS-RAM.™** Start with as little as 256K of memory and grow in affordable 256K increments to 1.5 MEG (an amount that once sounded large, but is now considered a moderate amount of memory expansion.) Incorporates 256K x 1 chips.



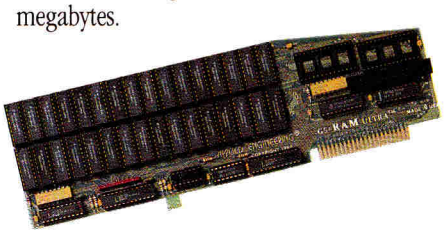
GS-RAM w/256K	**$154**
1 MEG	**$259**
1.5 MEG	**$329**

2. **GS-RAM Plus.™** Expands from 1 to 6 MEG in 1 MEG increments. Originally designed for power-users requiring a great deal of internal memory, this card has recently found favor with many moderate users. MEG-sized jumps in memory have now become practical for many users because of the enormous memory requirements of today's software titles. Incorporates 1 MEG x 1 chips.



GS-RAM Plus w/1 MEG	**$319**
2 MEG	**$459**
3-6 MEG	**CALL**

3. **GS-RAM Ultra.™** AE's newest memory card incorporates a new chip - the 256K x 4, which has four times the density of 256K x 1 chips. GS-RAM Ultra offers incremental expansion like the GS-RAM and ultimate size like the GS-RAM Plus. It's expandable from 256K to 4 MEG in 256K increments, so you can start small and still grow to a massive 4 megabytes.



GS-RAM Ultra 256K	**$214**
512K	**$249**
768K-4 MEG	**CALL**

We've also added ROM sockets to the GS-RAM Ultra. ROM sockets allow hardware-based applications to be loaded permanently into EPROMs...an increasingly important feature when applications become available from Applied Engineering and others.

Consider your needs.

Need a moderate amount of memory? **GS-RAM** lets you start small and takes you up to 1.5 MEG. Need lots of memory right away? **GS-RAM Plus** is your best bet. Want to start small and leave open the possibility of a huge internal memory? **GS-RAM Ultra** is your card. And our **GS Expander™** piggyback card adds up to 2 MEG to any of the three cards. Call AE for prices.

Talk to us.

Your decision should be based on anticipated maximum memory need and growth path. Initially, it's less expensive to add 256K than 1 MEG, but buying a MEG at a time could save you money over the long haul. Call us. We'll be happy to discuss your particular applications.

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BENCHTOP PUBLISHING

For gifts and projects with universal appeal, try a Publish It! template that combines the art of page design with the craft of woodworking.

By CYNTHIA E. FIELD, Ph.D.

DESKTOP PUBLISHING IS WORKING its way into all kinds of surprising areas these days. If you're not already convinced of **Publish It!**'s unsurpassed flexibility, for instance, consider Gene Raper's latest *carpentry* project.

DO-IT-YOURSELF

Like many senior citizens, Raper relishes computing activities that help him pursue and enhance his post-retirement interests. For one thing, he uses the "Classic" version of **AppleWorks** to prepare lessons for the Bible class he teaches in Albany, Georgia. But Raper's latest project is unique: a grocery-list pad that's attached to a handcrafted wooden base.

Raper came up with the idea one day while perusing a catalogue from **Meisel Hardware Specialties**. He uses traditional woodworking tools and follows printed plans to create the base. But instead of purchasing the grocery-list pads from the company, he designs his own on an Apple IIc with Publish It! 2.

TOOLS OF THE TRADE

Raper's grocery-list template is easy to replicate. Start up Timeworks' Publish It! 2 (most options described in this column are also available in the original version of Publish It!) and work in *Size to Fit* mode (Open apple-4 or Special menu).

Each grocery-list form measures 3.25 by 11 inches (**Figure 1**). You can fit two of these forms on a standard 8½-by-11-inch piece of paper.

Select the text tool and "rubber-band" (press and hold the mouse button while dragging) the main text area comprising Form 1. To preserve your eyesight, create this text area in any size and use the program's *Show Specifications* feature (Open apple-M or Objects menu) together with the values shown in the accompanying **Table** to fine-tune the object's dimensions and placement. Just type in the object's precise specifications and press the Return key.

Make sure the text area is still selected. (Click on it with the pointer if it's not.) Copy (Open apple-C or Objects menu) and paste (Open apple-V or Objects menu) a second text area. Don't bother dragging this duplicate text area into position; invoke *Show Specifications* and use the values in the **Table** instead.

ALL THE TRIMMINGS

Next, create the paper-cutting guides you'll need when you trim the completed grocery-list forms at the end of this project. Select the line tool and rubber-band a 0.25-inch vertical line anywhere on the page. Use *Show Specifications* to size and place the line.

Copy the line and paste it. Use *Show Specifications* to move this second cutting guide into position. Continue with this procedure until you've drawn and positioned all six cutting guides. Save your template-in-progress as GROCERY.LIST.

Using the graphics-frame tool, rubber-band graphics areas onto each of the two grocery-list forms. As usual, *Show Specifications* can help you size and position them.

Finally, select the text tool and rubber-band a text area onto each form. Define dimensions and placement with the *Show Specifications* feature.

USER-FRIENDLY FORMS

If you were creating unlined grocery-list forms, your template would be finished at this stage—but most people consider lined paper easier to use. Half-inch spacing between lines gives shoppers room enough to write the names of the items they need to buy.

Thanks (again!) to Publish It!'s *Show Specifications* feature, you won't get bleary-eyed creating lined forms. First select the line tool and rubber-band a 3-inch horizontal line anywhere on the page. Use *Show Specifications* to size and position the line.

Copy and paste the line. Then invoke *Show Specifications* and type in the **Table** values for "Form 1, Line 2." Continue pasting (Open apple-V) and specifying (Open apple-M) until all 16 lines are drawn on Form 1. Save your template (Open apple-S).

Continue this procedure until you've also incorporated 16 lines onto Form 2. Save the completed template, which should look like **Figure 2**.

FINISHING TOUCHES

Now you're ready to customize your grocery-list template with words and illustrations. We like the Westwood typeface in 36-point size for the phrase *Grocery List* and the baked-goodies illustration from the *Home. Cooking* file on the **People, Places & Things** artwork disk—but feel free to experiment with ►

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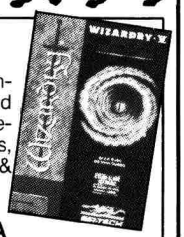

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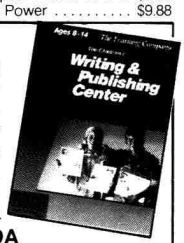

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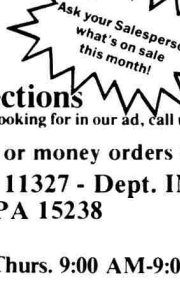

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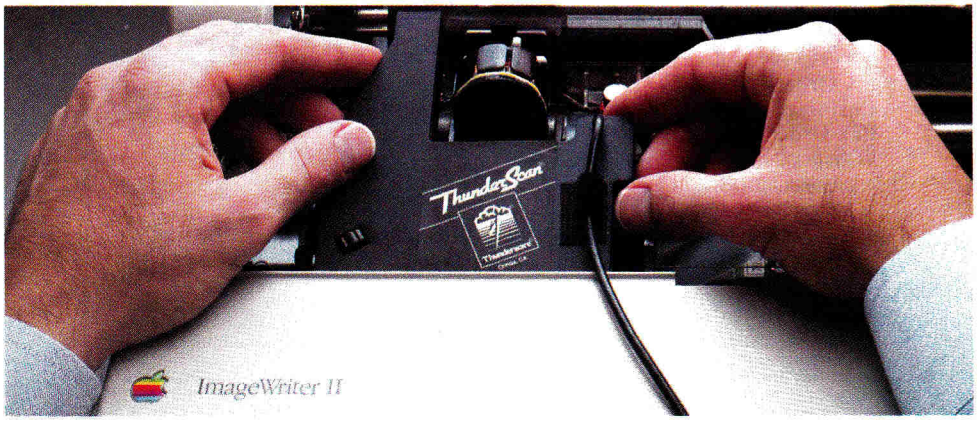

PRESS ROOM

	Left Start	Top Start	Width	Height
USE TEXT TOOL TO CREATE:				
Main Text Areas				
Form 1	0.000	0.000	3.250	11.000
Form 2	3.250	0.000	3.250	11.000
Small Text Area				
Form 1	0.348	1.750	2.500	1.000
Form 2	3.586	1.750	2.500	1.000
USE STRAIGHT-LINE TOOL TO CREATE:				
Cutting Guides				
Top Left	0.000	0.000	n/a	0.250
Top Center	3.250	0.000	n/a	0.250
Top Right	6.500	0.000	n/a	0.250
Bottom Left	0.000	10.500	n/a	0.250
Bottom Center	3.250	10.500	n/a	0.250
Bottom Right	6.500	10.500	n/a	0.250
Writing Lines				
Form 1				
Line 1	0.125	3.250	3.000	n/a
Line 2	0.125	3.750	3.000	n/a
Line 3	0.125	4.250	3.000	n/a
Line 4	0.125	4.750	3.000	n/a
Line 5	0.125	5.250	3.000	n/a
Line 6	0.125	5.750	3.000	n/a
Line 7	0.125	6.250	3.000	n/a
Line 8	0.125	6.750	3.000	n/a
Line 9	0.125	7.250	3.000	n/a
Line 10	0.125	7.750	3.000	n/a
Line 11	0.125	8.250	3.000	n/a
Line 12	0.125	8.750	3.000	n/a
Line 13	0.125	9.250	3.000	n/a
Line 14	0.125	9.750	3.000	n/a
Line 15	0.125	10.250	3.000	n/a
Line 16	0.125	10.750	3.000	n/a
Form 2				
Line 1	3.375	3.250	3.000	n/a
Line 2	3.375	3.750	3.000	n/a
Line 3	3.375	4.250	3.000	n/a
Line 4	3.375	4.750	3.000	n/a
Line 5	3.375	5.250	3.000	n/a
Line 6	3.375	5.750	3.000	n/a
Line 7	3.375	6.250	3.000	n/a
Line 8	3.375	6.750	3.000	n/a
Line 9	3.375	7.250	3.000	n/a
Line 10	3.375	7.750	3.000	n/a
Line 11	3.375	8.250	3.000	n/a
Line 12	3.375	8.750	3.000	n/a
Line 13	3.375	9.250	3.000	n/a
Line 14	3.375	9.750	3.000	n/a
Line 15	3.375	10.250	3.000	n/a
Line 16	3.375	10.750	3.000	n/a
USE GRAPHICS-FRAME TOOL TO CREATE:				
Clip-Art Areas				
Form 1	0.348	0.500	2.500	1.000
Form 2	3.586	0.500	2.500	1.000

Table. Specifications for template (inches); n/a = not applicable.

Circle 68 on Reader Service Card.

the hundreds of alternatives you'll find among low-cost fonts and clip art available in the public domain.

Among other options, you could place borders around text areas or clip art by clicking on the *Frame Borders* radio button in the objects' *Show Specifications* dialog boxes. Invert artwork by pressing the spacebar at the *Import Picture* cropping screen.

Get creative—use alternative type styles such as outline or shadow (Font menu). Create a pattern-filled frame with the *Set Line Weight*, *Set Pen Pattern*, and *Set Fill Pattern* options offered on the Objects menu. Shift the positions of text areas and illustrations to suit your style and your message.

Whatever you do, don't think you're limited to creating only grocery-list forms. This template's just as handy for designing business-appointment calendars, homework assignment sheets, or general-purpose "to do" forms.

ROLL THE PRESSES

After you've added finishing touches and proofed the final form, print it with a fresh ribbon. Use Publish It!'s double-strike mode for best results.

Make sure the paper's left-hand perforated edge lines up with the red mark on the ImageWriter II paper bar (or with an analogous guide on another printer).

If adjusted properly, the two leftmost cutting guides you drew on the template will print at the left-hand perforation, and you'll have to make only two cuts instead of three to trim the finished forms. Copy the forms onto white or colored paper and cut them to size.

PADDING AROUND

You can use grocery-list forms as single sheets or you can pad them, a process that's neither expensive nor difficult. For each pad, place about 100 forms on top of a like-sized piece of cardboard. Recycled cereal box (or other food container) cardboard works great and seems particularly appropriate for this project.

Stack the pads-to-be on top of each other. Make sure all edges are even, then weight the stack with some heavy objects. (Hefty recipe books should do the trick.) With an inexpensive paintbrush, apply a first coat of *padding compound*.

You may be able to purchase padding compound locally at a quick printer or a graphics►

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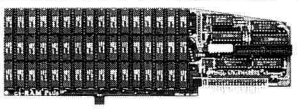

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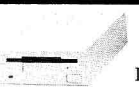

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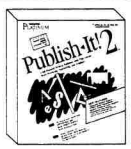

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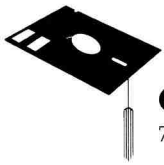

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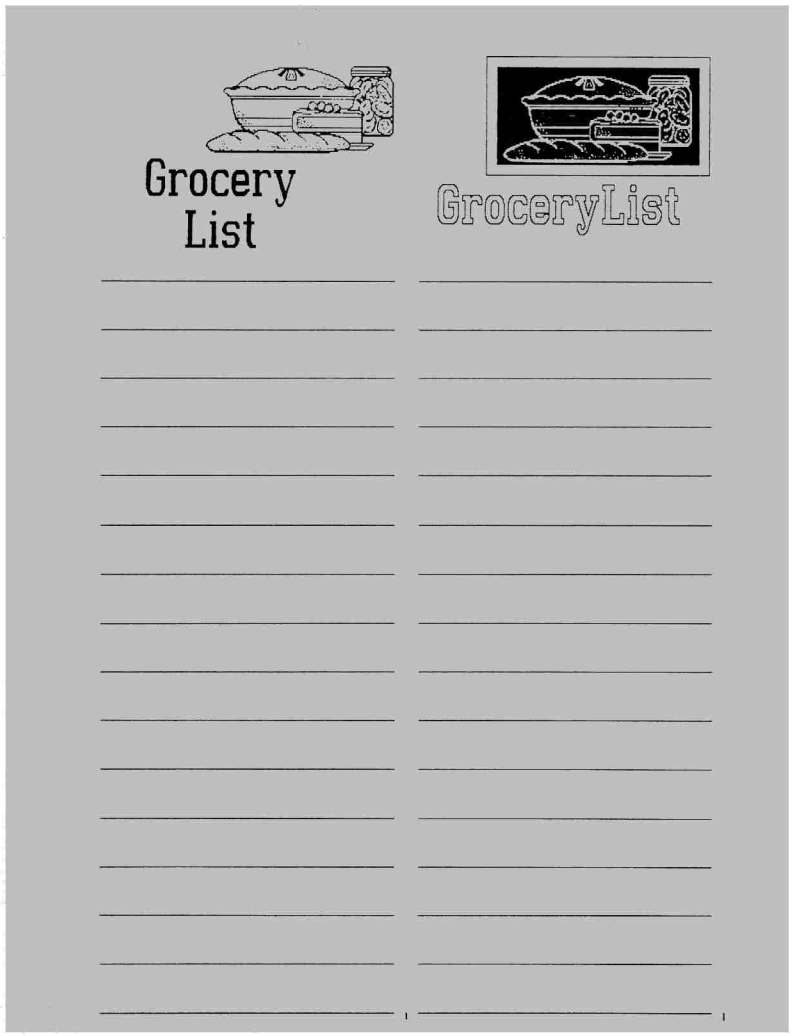

Figure 1. Final grocery-list forms.

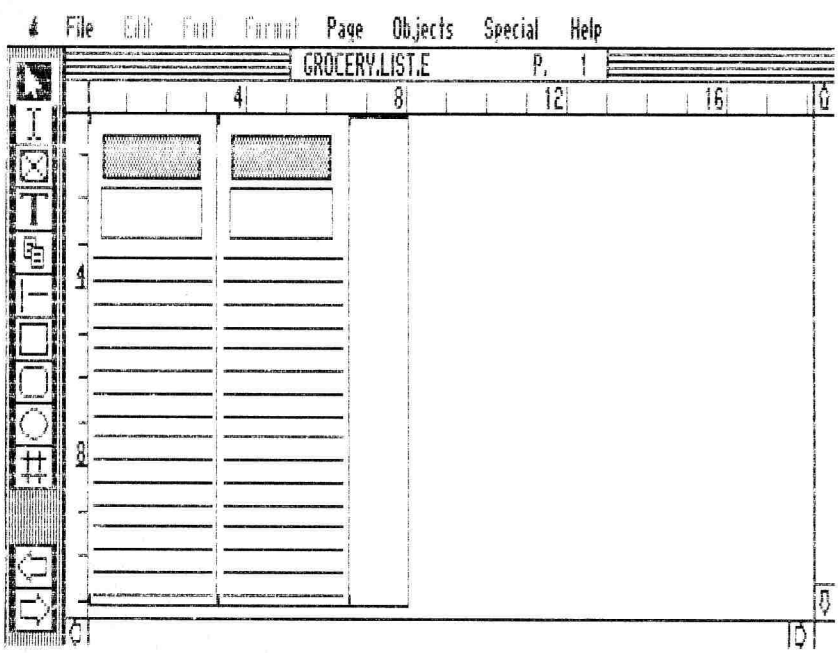

Figure 2. Screen dump of forms template.

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Wait about 15 minutes while the first coat of padding compound dries. Brush on a second coat and let it dry thoroughly. Drying time varies with compound thickness, ambient temperature, and relative humidity. To be on the safe side, let pads cure overnight.

Remove the weights from the stack of pads and carefully separate them. A hobby knife or single-edge razor blade makes the job easier.

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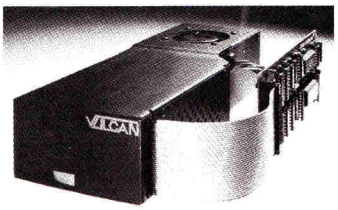

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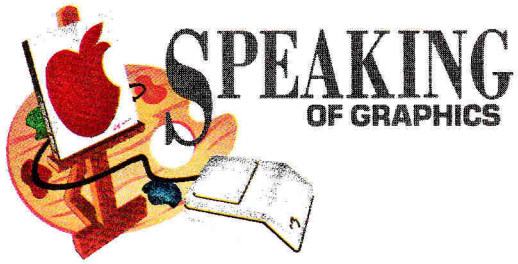

THAT OLD BRUSH MAGIC

A variety of graphics-programming tools and a little wizardry turn your computer screen into a painter's canvas.

By ROBERTA SCHWARTZ and MICHAEL CALLERY

CONSIDER FOR A MOMENT SOME OF the tricks you take for granted when you "paint" with your computer. One of the most fundamental, for instance, is seeing your brush float along the screen as you draw and then make a mark on screen when you press the mouse button. How did the programmer do that? Another basic feature is "rubber-banding"—pressing the mouse button and dragging to produce that elastic ghost line that delimits the size and shape of rectangles, ovals, and other geometrics. The rubber-band line moves and resizes without altering your painting until you release the mouse button to "put down" your shape.

The programmer can achieve such effects with a routine that captures and saves the area of the screen underneath the brush or line and then restores it when the brush or line is moved. That's a simple solution, but it's slow and would probably send you screaming back to your oils or watercolors. There's a better solution for programmers, built right into the Apple's central processing unit (CPU).

BE LOGICAL

All CPUs can execute only a limited number of instructions. Apple II CPUs have fewer than 256 instructions; the 65816 CPU in the Apple IIGS has a few more than the IIe/IIc's 6502. Among them are instructions for simple math, for movement of data from one location to another, and, most importantly for this month's topic, for logical operations. The computer's logical operations are based on *Boolean logic*, named after the English mathematician George Boole, who first formulated the rules of binary logic and algebra.

Recall that most modern computers operate on *binary data*. That is, all information is stored in a series of bits, each of which can have only one of two values at any one time. In electrical terms, these bits are represented as circuits with or without current (on or off); in logical terms they're usually represented as a 1 or a 0 (on or off). Boolean operations are essentially comparisons and require two pieces of data. The result of the operation creates a third datum. *OR* is one of the basic Boolean operators. The results of applying OR can be summarized very simply:

1 OR 1 is 1
1 OR 0 is 1
0 OR 1 is 1
0 OR 0 is 0

There's a twist to the OR operation called *exclusive OR* (XOR)—something like this:

1 XOR 1 is 0
1 XOR 0 is 1
0 XOR 1 is 1
0 XOR 0 is 0

How does all this relate to graphics? Imagine that the 1s in the above statements are pixels that are lit, and the 0s are pixels of the background color. The first 1 or 0 is the screen, the second 1 or 0 is your brush, and the result is the final appearance of the screen as you paint. If the screen is all black (0) and your brush is white (1), an XOR operation would put the brush on screen, appearing as white (0 XOR 1 is 1). Now here's the important part. A second XOR operation at the same location erases the brush: That location on screen is now white (1) and your brush is white (1), so the second XOR operation results in black, thus erasing the brush from the screen (1 XOR 1 is 0). The Boolean operator XOR, then, enables programmers to create moving brushes, fast rubber-bands for geometric shapes, and all sorts of other magic.

SHAPING UP

You can take advantage of XOR if you decide to try a little programming with Applesoft shapes. Applesoft offers two methods of placing a shape on screen: *DRAW* and *XDRAW*.

Program listing. XOR animation.

```
5 REM Set up full-screen hi-res graphics
10 HGR: POKE -16302,0
15 REM Set color and initial shape
   parameters
20 HCOLOR=3: SCALE=1: ROT=0
25 REM Loop to read shape data into RAM
30 FOR I=0 TO 10: READ T
40 POKE 768+I,T: NEXT I
45 REM Tell Applesoft where shape is
50 POKE 232,0:POKE 233,3
55 REM Animation loop
60 FOR X=10 TO 260
65 REM Draw shape
70 XDRAW 1 AT X,100
75 REM Erase shape
80 XDRAW 1 AT X,100
90 NEXT X
495 REM Shape data
500 DATA 1,0,4,0
510 DATA 39,55,55,53,37,37,0
```

DRAW places the shape on screen, while XDRAW XORs the shape with the screen. XDRAWing a shape a second time at the same screen position erases it and restores the screen to its initial condition. By XORing a shape across the screen (draw, erase, draw, erase) you can create some effective screen animation. Type in and run the accompanying **Program listing**, a simple sequence from our book *Apple Graphics: Tools and Techniques* (Prentice Hall, 1986), to see a good example. (Note that as in previous programs we've shown you in Speaking of Graphics, you don't have to type the REM statements—they're included to explain the following line or lines.)

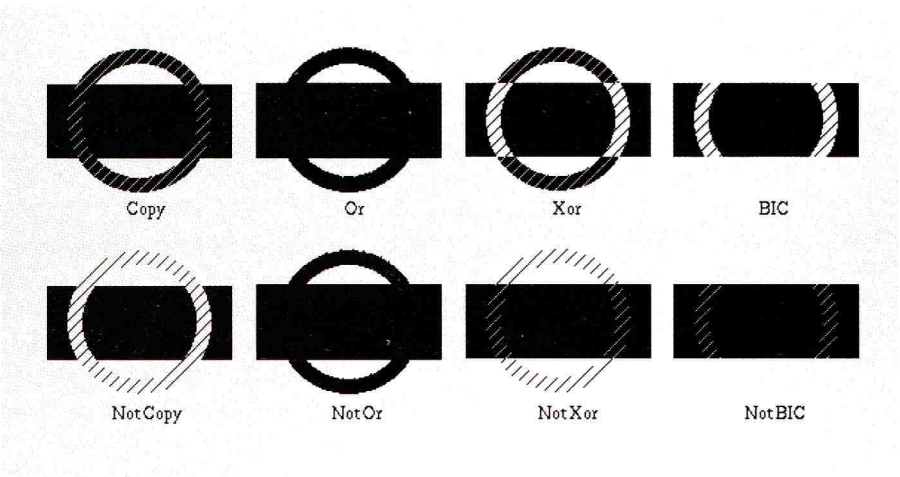

Figure 1. QuickDraw II transfer modes.

QUICKDRAW

Built into the Apple IIGS are graphics routines known as *QuickDraw II*. They offer two *transfer modes*, *COPY* and *BIC*, in addition to the standard OR and XOR. (See **Figure 1**.)

COPY mode, like the Applesoft DRAW routine, just places the shape, brush, and object on screen regardless of the underlying pixels. To make your brush draw, then, just change the transfer mode from XOR to COPY when you hold down the mouse button, and voilà: a brush stroke. BIC is a holdover from the original QuickDraw for the Lisa computer. It originally meant *black is clear*, and, if you're working in black-and-white, that's the effect you'll get. QuickDraw also offers the reverse of all these modes in the form of *NOTCOPY*, *NOTOR*, *NOTXOR*, and *NOTBIC*. Color adds interesting complications to these transfer modes. It takes more than one bit to make a GS pixel, so while the XOR of white remains black, the XOR of red may be blue. (The actual colors depend on the hue you've assigned to each palette position. The XOR of color 1 is color 8.) Color complications have caused BIC to be rechristened *bit clear*.

Working in color with these transfer modes lets you achieve a variety of fascinating effects, but the commercial software you use may or may not give you direct access to them. Most programs let you invert a selection (XOR operation). **Paintworks Gold** lets you use the cotton tool to paint with an inversion brush. The shareware program **Paint.256** lets you select an option from its Brush Mode menu.

Because transfer modes are especially important for animation, such packages generally offer a choice for various effects. **Spectragraphix 256**, for example, offers easy access to seven drawing modes for shapes, four of which translate directly into the QuickDraw transfer modes. (See **Figure 2**.)

The next time you sit down at your computer and wield your electronic brush, you may or may not care how it's being done, as long as it works. But sometime when you're with a group of computer enthusiasts, just mention casually that you were experimenting with a few Boolean operations. That should impress them!□

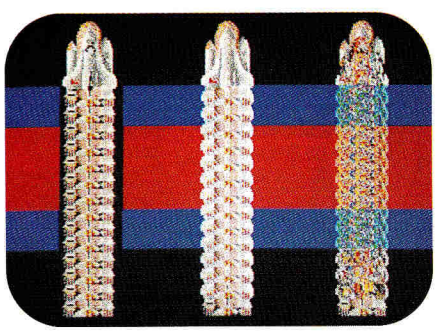

Figure 2. COPY, BIC, XOR color modes.

PRODUCT INFORMATION

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Continued from p. 33

straightforward, but they'll take some time to master. (Note that you can also insert markers and directives in existing AppleWorks word-processor files to turn them into branching, sound-enhanced StoryWorks stacks.) Moore suggests developing stacks while working on two computers at once—writing the stack on the computer running AppleWorks and testing it on the computer running StoryWorks. If you don't have two computers available, it's a good idea to build a stack just a few segments at a time to make correcting errors easier.

The beauty of StoryWorks is twofold. First, it's a program that operates on an Apple II with as little as 64K. Second, it builds on the most popular Apple II program ever developed—AppleWorks Classic. StoryWorks may not have all the "hypermedia" goodies available in programs like Tutor-Tech for 8-bit Apples (from TechWare) or HyperStudio for the GS (from Roger Wagner Publishing), yet it still gives educators the power to develop personalized courseware. Now if we can only get it to work with graphics....

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

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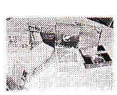

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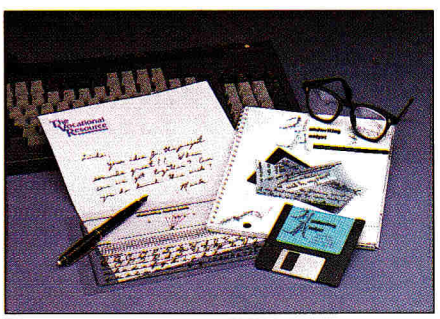

Does handwriting reveal personality?

use, and the music they enjoy all contribute to an overall picture about who people are and what makes them tick.

While studying group culture can tell you something about the individuals who make up the group, a person's handwriting can make a statement about his or her personality. Graphologists analyze writing samples for insight into a person's emotions, intellect, and material drives. By examining the way letters form characteristic shapes, or by interpreting the size, width, height, and style of letter formation, professional handwriting analysts can tell you something about a person's character.

Such information could prove invaluable in business settings where, for example, employers need to minimize employee turnover. The ability to ensure the correct fit between employees and tasks could mean the difference between profit and loss.

You don't have to spend big bucks on the services of a professional graphologist to perform a handwriting analysis—you can use your Apple II to analyze handwriting yourself without any formal training. Handwriting Analyst from CIASA (Career Information and Software Associates) lets you produce a personality-assessment report based on an individual's handwriting sample.

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The package consists of one double-sided 5¼-inch floppy with 57 multiple-choice questions about the shapes and formations of letters in a writing sample you've collected. The disk also includes handwriting analyses of several famous people. The software isn't copy-protected; individuals with two-drive computer systems can copy side 2 to a separate disk to minimize swapping while the program is running.

The well-written manual provides instructions for analyzing samples, plus a history of handwriting analysis, a glossary of graphological terms, a list of professional graphological organizations, celebrity signatures, and a bibliography of suggested reading. There's also a plastic *Handwriting Analyst Guide* for measuring slant and size; it'll come in handy when you compare collected samples with the examples in the manual.

You can run an analysis on either a text or a signature sample. Because most signatures don't contain all the letters in the alphabet and usually make a statement about the way a person wants to be seen by others, the program's authors recommend reserving signature analysis for informal party settings. If the task is business-related—screening job applicants or solving employee problems—you should perform a lengthier text analysis.

Letter formation in a person's handwriting is supposed to reflect personality traits, yet people may vary their letters according to the speed at which they write, which letters are adjacent to one another, or their mood at the moment. Therefore, the first step in analysis involves securing a handwriting sample with at least five examples of each letter. Samples should be written with a ballpoint pen on an unlined 8½-by-11-inch sheet of paper. You'll get more accurate results if you use at least half a page of text (a longer sample would be better) on a spontaneous topic (not copied from another sample).

The program's multiple-choice questions are designed to analyze an individual's physical and material drives, emotional characteristics, intellectual style, personality traits, social behavior, and vocational orientation. You can request personality reports in either "quick" or "detailed" format. Both reports contain roughly the same information, but the detailed format provides more elaborate explanations for each characteristic.

You can display your reports on screen, print them, or save them as ASCII text files for later editing with a word processor. Once you've saved a report in text-file format, you can't use it again with Handwriting Analyst. If you want to call up the answers for review or modification within Handwriting Analyst before saving them as text files, you must save them in a special "writer's file."

THE WRITE STUFF?

Does the program work? Perhaps. Here's what Handwriting Analyst discovered about the "vocational implications" of my handwriting sample:

"Carol likes to streamline her work, but she will sacrifice speed for accuracy when necessary. She slows down to make sure the accuracy of her work doesn't suffer.

"Carol's independence and openness to new experience are useful traits for occupations that offer possibilities for developing new business ventures."

The analysis is right on target, but may be accurate only because it's so general. Here's what the program had to say about the "vocational implications" of Ronald Reagan's ► handwriting:

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"Ronald is equally concerned about brainstorming as he is with implementation or operations. He feels most comfortable when he is able to start a project at the beginning. He likes to be efficient in his work, but he will slow down to make sure that he does the job right.

"Ronald is a good organizer. He has a desire to serve others. Ronald is ambitious and probably has long-term plans for his future. There is a difference between Ronald's public image (his signature) and the way he really is (his text sample).

"Based on his signature: His motivations come from his work, and his focused approach allows him to operate well behind the scenes. Based on his text sample: No information about this trait was found in the text sample."

Would you hire this man based on that analysis?

DIFFERENT STROKES

Handwriting Analyst makes evaluations according to "trait/stroke relationships" in handwriting samples: Certain letter strokes are associated with specific personality traits. For instance, handwriting that slants to the right indicates a personality given to emotional release; a left slant indicates emotional restraint. Wide spacing between words shows a distaste for crowds, while crowded spacing indicates a strong preference for social contact. People who sign their first names larger than their last names are focused on individual achievement; those who sign the reverse are oriented toward past family achievements.

Handwriting Analyst evaluates individual samples in an effort to detect distinct personality traits; it formulates its analyses according to a set of methodological guidelines accepted by professional graphologists. If you value the opinions of professional analysts, this program will help you perform similar evaluations at greatly reduced cost. It won't tell you everything you need to know about the character of the person you want to evaluate, but it will give you insight into a person's motivations and job characteristics. Even if it doesn't meet your business needs, however, you'll still have lots of fun trying it out at a party.

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

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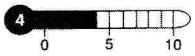

Teaching kids to use computers for writing is basically a two-step process. First, youngsters must learn to write using a word processor, as comfortably as if it were an electronic pencil. After that, you can begin to teach them fundamental writing techniques. MasterWrite, a word processor plus a series of creative-writing exercises, addresses major writing problems and composition formats, while teaching youngsters in grades 5–12 to express themselves in words. Whether or not it inspires students to want to learn how to write, or whether it motivates them to enjoy writing, is clearly of critical concern, however, and it's here that the program falls severely short. MasterWrite's straight text presentation, its lack of interactive feedback, and the need to learn a new word processor (no matter how simple it is) may actually undermine the creative-writing process it's intended to foster.

MasterWrite is really two programs in one—MasterType's Writer and MasterWrite. The joint product combines a word processor with creative-writing lessons to handle both phases of learning to write. MasterType's Writer is an easy-to-use word processor, originally published by Scarborough Systems. MasterWrite includes a series of 25 creative-writing lessons—data files for use with MasterType's Writer—that emphasize the fundamentals of effective writing.

Mindscape sells MasterType's Writer by itself for $14.95. The extra dollars for the comprehensive MasterWrite package get you backup disks, a series of electronic tutorials, exercises, and assignments, plus a *Teacher's Manual* with instructions and lesson plans.

The emphasis is on "process writing." Kids aren't expected to view writing as the instant creation of a finished product; they're taught to perceive it as a three-phase process—prewriting (brainstorming and conceptualizing ideas), writing, and postwriting (revision). MasterWrite is intended for classroom instruction, not as a self-paced writing tutor. Students first learn how to operate the word-processor portion of MasterWrite (MasterType's Writer), ►

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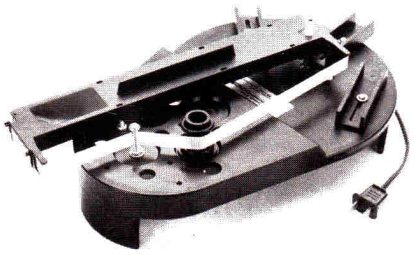

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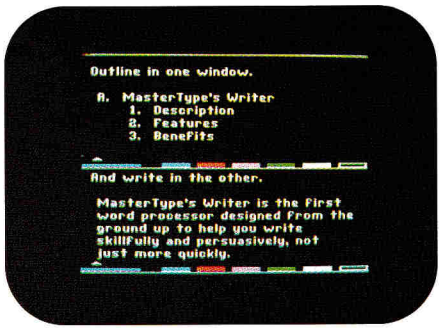
then proceed to the lessons.

The word processor features copy, cut, and paste; find and replace; and a variety of typefaces. Students can copy, erase, and print text by pressing Escape. They can access several program operations with control-key equivalents—such as Control-F to call up the Find command or Control-P to invoke the Print submenu.

Students should be able to master the word processor quickly, especially if they follow the tutorial on the flip side of the program disk. It's divided into ten lessons, including hands-on exercises that teach youngsters how to use the program. Students advance through the tutorial screens by pressing Return. Unfortunately, though, they can only go forward. There's no way to review a previous screen, unless they choose to reread the entire lesson.



Ease of use may mean severe limitations.

By today's standards, the word processor is limited. It lacks a spelling checker and a thesaurus, and it restricts file size to 16K (about ten double-spaced pages).

To begin using the MasterWrite lessons, teachers must first prepare two master student work disks: Levels I (lessons 1–12) and II (lessons 13–25). Instructions for preparing the work disks are simple to follow, but tedious to carry out. The preparation process takes about 20 minutes; it involves copying files one at a time from the lesson disks to the master disks.

Level I lessons teach sentence structure—things like subjects and predicates. Students learn how to write a journal, an autobiography, a business letter, a description, and a variety of essays. Level II lessons focus on writing dialogue, a news article, figurative language, poetry, a book report, a topical outline, and a research paper, among other assignments. MasterWrite offers split-screen viewing, so students can load two files at once. This feature is particularly helpful if youngsters want to refer to their outlines as they write. The program also includes options to create macros, sort lists alphabetically, and edit typefaces.

All lessons consist of tutorials and exercises, and all take advantage of the word processor's split-screen feature. Instructions and the tutorial appear in the screen's upper window; exercises appear in the lower work window. Kids move back and forth between windows by pressing the open-apple key. A bouncing cursor indicates the active window.

MasterWrite lessons are straightforward, but drab. They lack any interactive qualities and they don't offer any audiovisual reinforcement for correct answers. For example, in lesson 12, students are taught to write directions. The program explains that four types of words are used most often when giving directions—action words, location words, comparisons, and qualifiers. MasterWrite describes each type briefly and presents some examples. Students then complete some practice exercises.

The homework assignment may relate only to the particular lesson, or it may require youngsters to integrate what they learned earlier. In either case, there's no clear demonstration of how the lessons, exercises, assignments function as anything more th an electronic textbook. The only advantage completing the exercises on the computer that students can save their work for la revision without rewriting from scratch.

You might also ask why Mindscape require students to learn a new word processor just to work with the lessons on the MasterWrite disks.

Because the exercises are designed to give practice in the mechanics of creative writing, they would be more useful if presented in ASCII format for use with a word processor students already know. Back to the drawing board, Mindscape. Your writing tutor looks as though it needs some rewriting.

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

Editor's note: In the wake of Mindscape's sale to The Software Toolworks, Mindscape products will still be available through certain mail-order retailers. Contact The Software Toolworks at 19808 Nordhoff Place, Chatsworth, CA 91311, (818) 885-9000, for details.□

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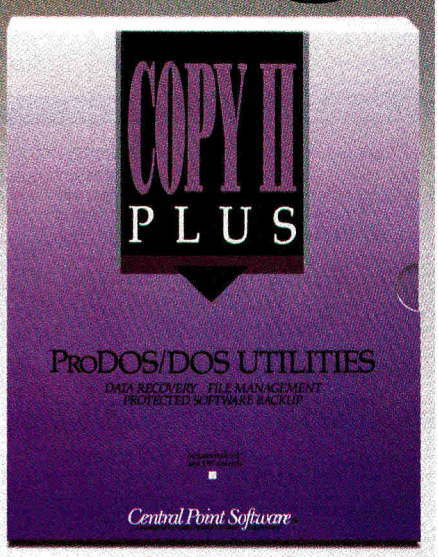

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27	32	37	42	47	102	107	112	117	122	177	182	187	192	197	252	257	262	267	272	327	332	337	342	347
28	33	38	43	48	103	108	113	118	123	178	183	188	193	198	253	258	263	268	273	328	333	338	343	348
29	34	39	44	49	104	109	114	119	124	179	184	189	194	199	254	259	264	269	274	329	334	339	344	349
30	35	40	45	50	105	110	115	120	125	180	185	190	195	200	255	260	265	270	275	330	335	340	345	350
51	56	61	66	71	126	131	136	141	146	201	206	211	216	221	276	281	286	291	296	351	356	361	366	371
52	57	62	67	72	127	132	137	142	147	202	207	212	217	222	277	282	287	292	297	352	357	362	367	372
53	58	63	68	73	128	133	138	143	148	203	208	213	218	223	278	283	288	293	298	353	358	363	368	373
54	59	64	69	74	129	134	139	144	149	204	209	214	219	224	279	284	289	294	299	354	359	364	369	374
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3	8	13	18	23	78	83	88	93	98	153	158	163	168	173	228	233	238	243	248	303	308	313	318	323
4	9	14	19	24	79	84	89	94	99	154	159	164	169	174	229	234	239	244	249	304	309	314	319	324
5	10	15	20	25	80	85	90	95	100	155	160	165	170	175	230	235	240	245	250	305	310	315	320	325
26	31	36	41	46	101	106	111	116	121	176	181	186	191	196	251	256	261	266	271	326	331	336	341	346
27	32	37	42	47	102	107	112	117	122	177	182	187	192	197	252	257	262	267	272	327	332	337	342	347
28	33	38	43	48	103	108	113	118	123	178	183	188	193	198	253	258	263	268	273	328	333	338	343	348
29	34	39	44	49	104	109	114	119	124	179	184	189	194	199	254	259	264	269	274	329	334	339	344	349
30	35	40	45	50	105	110	115	120	125	180	185	190	195	200	255	260	265	270	275	330	335	340	345	350
51	56	61	66	71	126	131	136	141	146	201	206	211	216	221	276	281	286	291	296	351	356	361	366	371
52	57	62	67	72	127	132	137	142	147	202	207	212	217	222	277	282	287	292	297	352	357	362	367	372
53	58	63	68	73	128	133	138	143	148	203	208	213	218	223	278	283	288	293	298	353	358	363	368	373
54	59	64	69	74	129	134	139	144	149	204	209	214	219	224	279	284	289	294	299	354	359	364	369	374
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READER SERVICE INDEX

Reader Service		Page
40	Abracadata	88
103	Alltech Electronics Co. Inc.	76
*	Applied Engineering	14, 15, 31, 63, 67
65	Az-Tech Computer Services	93
87	Bible Research Systems	92
*	Broderbund Software	37
8	CDA Computer Sales	28, 29
*	Central Point Software	79
94	Choice Computer Products	91
21	Co-Du-Co	91
*	Compucraft	92
124	CompuServe	55
205	Computer Direct, Inc.	56
252	Computer Enhancers	92
288	Computer Friends	78
28	Computer Search USA, Inc.	91
142	Computers Plus Company	93
134	Dayton Computer Supply	92
73	DMA Technologies	93
220	Educational Resources	16, 17
135	Entertainment Online	82
85	Fas-Track Computer Products	71
61	GE Ridge Services	93
38	Gemini Marketing Inc.	90
*	Golem Computers	34, 35
27	Gosselin Computer Services	90
64	GS Central	90
88	Howard Soft	23
*	inCider Sub Ad	89
43	Island Computer Services	92
70	Island Computer Supply	91
199	Jameco Electronics	21
*	Kensington Microware	CV4
131	Kinson Products	13
175	Laser Computer Inc.	CV2
248	Memory Plus Distribution	50
55	National AW User Group	92
173	New Science Prospects	90
271	Nikrom	82
89	North Forty Enterprises	81
59	Perfect Solutions Software	91
*	Personal Financial Services	26
77	PIE	92
*	Preferred Computing	73
105	Price Busters	80
128	Programs Plus	40, 43
269	Public Domain Exchange	54
136	Quality Computers	2, 3
164	Quality Computers	5
7	Ramco Computer Supplies	90
90	Roger Coats	10, 11
240	Sensible Software	27
29	Shreve Systems	93
143	Silicon Express	83
292	Softdisk	1
51	Softools	91
96	Softronics	93
127	SoftSpoken, Inc.	93
270	Software Disc. of America	69
18	Sports Software Assoc.	91
233	Standard Peripherals	92
92	Street Electronics	CV3
104	Supra Corp.	9
68	Thunderware	70
140	Timeworks	25
231	Tulin Corp.	88
297	USA Micro	77
254	Vitesse Inc.	6
17	VMC Marketing Technologies	90
91	William K. Bradford	85
260	Zimco Int.	4
189	Zip Technology	87

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Z Ram Ultra 1 (IIc) 143 175..... --
Z Ram Ultra 2 (IIc) 194 220.....275
Z Ram Ultra 3 (IIc) 257 290.....344
Z 80c (Apple IIc only, to run CPM).....119
External drive cable adapter, DB 20 to DB 19.....16
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AMR: 3.5" 800K Daisy Chainable (compat with all but Apple IIc. Also works with PC Transporter).....188
5.25 Drive $115 5.25 Daisy Chainable.....144
Apple IIgs or UniDrive 3.5 $319 Uni Controller.....62
Multi Kache Card for 5.25 & 3.5: 256K $275 1Mb.....350
with Hard Drive/SCSI option 256K 340 1Mb.....425
Applied Ingenuity: Drive Backup System (VCR) NEW.....139
ProSel 8 $34 ProSel 8+16 $51 Quark Catalyst.....27
EasyDrive $54 Catalyst $27 Salvation GS Backup.....38
AE Transwarp GS 289 Slot Mover.....32
AI GS Juice Plus: 1Mb 169 2Mb $259 3Mb -- 4Mb.....439
AE GS Ram Plus: 1Mb 239 2Mb 337 3Mb 429 4Mb ...521
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AMR 3.5 PC Transporter compatible Daisy Drive 188
Ram Chips (sets of 8): 256K $26 1mb.....88

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SMT No Slot Clock $34 Printech II (parallel).....43
RC Systems: Slot Buster Card $120 Clock $35 Modem.....24
Speech Synth $35 Parallel Prtr $16 Serial Prtr.....12

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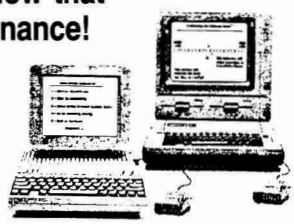

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LEARNING CURVE

REAL-WORLD CONNECTIONS

By DAVID D. THORNBURG, Ph.D.

To bridge the gap between simulations and the outside world, we must create environments in which computer models interact with reality.

THE PERSONAL COMPUTER IS A MARVELous tool for exploring conceptual space: It affords unique opportunities to examine microworlds of your own construction. There's almost no limit to the types of worlds you can examine; we've looked at a number of math microworlds, for example, in the past several months, with a special emphasis on *chaos*. (See "An Ordered World," September 1989, p. 110; "Fishing for Questions," October 1989, p. 108; and "The Art of Mathematics," February 1990, p. 84.)

You can use personal computers to explore other domains, as well. For example, you could build a world in which gravity didn't exist, or one in which gravitational attraction pulled with a force proportional to the cube, instead of the square, of the distance between bodies. If you can dream it, you can do it.

COMPROMISING POSITIONS

As exciting as it is to study these computational universes, we shouldn't rely too heavily on that medium. Microworlds suffer from one pitfall of science in general: To make calculations possible, we make certain simplified assumptions that exchange computability for accuracy.

A simple example is the trajectory of a bowling ball pushed off the top of a tall building. A computational model based on the laws of motion would trace a parabolic arc as the ball fell to earth. If you were to actually conduct the experiment, however, you'd find that the real trajectory was close to, but not precisely the same as, the one you'd computed. And with repeated experiments you'd find that the ball would probably land not in the same spot, but in a slightly different location each time.

This gap between the computer simulation and the real world of physics has several causes, the most prominent of which is that the computer model might not have allowed for wind resistance along the trajectory. It might also have assumed that the ground was flat. Although such simplifications make calculations manageable and help us see the basic structure of physical phenomena, they make it too easy for us to think we live in a predictable world, whereas predictability is the exception, not the rule.

Although a computer model of a falling body will come close to predicting the results of the actual experiment, most dynamic systems are quite sensitive to slight perturbations. That means that even a small error in starting assumptions can produce tremendously varied results, as in weather prediction, for instance. We can even model a portion of this sensitivity by using some of the chaotic functions covered in earlier columns (such as the Gingerbread Man in "An Ordered World," noted above).

BRIDGING THE GAP

The cure is to create environments in which computer models (microworlds) interact with reality (the macroworld) in some meaningful way. Light and heat sensors from **Broderbund Software** and **Sunburst Communications**, for example, transmit physical data to the computer, which displays and analyzes them. (See "Beakers, Test Tubes, and Apples," September 1989, p. 50, for details.) These products are a step in the right direction; they let us study real phenomena, complete with all the "errors" and variations that attend any physical experiment. The challenge is to use the computer not just as a tool for data capture, but for the interactive exploration of concepts through a blend of computational models and physical experiments.

Imagine a configuration of equipment that includes an Apple II with the **Video Overlay Card** and the **Logo** programming language, plus a Canon Zap Shot or Sony Mavicam still-video camera. The computer holds the microworlds created with Logo; the camera captures macroworlds in the form of full-color still images; and the Video Overlay brings them together. You could spend a day in the woods photographing plants, then connect the camera's video output to the Overlay Card to view your color images on screen. You could then add computer graphics to your photos through programs created in Logo.

As a starting activity, you might see whether the

"golden rectangle" (side ratios of 1.618 to 1) appears in any of the objects you shot. With a few simple commands, you could draw a rectangle of those proportions around a photo of a pine cone to see whether it fits. You might want to try replicating the design of a fern with a recursive pattern in which the overall shape is the same as that of an individual leaf (as in a fractal).

With a photo of the plant displayed underneath the computer-generated image, any similarities or differences will be easy to see.

Such experiments aren't limited to the natural sciences. The golden-rectangle example works beautifully with photos of classical architecture and other works of art, for instance. The domain for the integration of microworlds and macroworlds is boundless.

LOOKING OUTWARD

On another level, the bringing together of two universes through technology may be a metaphor for the transformation of education. Too many classrooms operate as microworlds isolated from the outside.

Confined to areas without phones, satellite hookups, or the other advances in communications that have turned our planet into a "global village," our 19th-century classrooms perpetuate a model of education that has lost touch with reality.

Just as physics books present inaccurate models in exchange for computability, our educational system promotes models that ignore both technological change and the growing complexity of our world.

THE HAZARDS OF SIMPLIFICATION

Simplified assumptions help us understand certain basic principles, but they become dangerous when we accept them as true.

I remember hearing from a parent whose child was asked whether a ball rolled off the edge of a table would fall to the ground in the same time as a ball dropped straight down from the same height.

The child said no, and the teacher marked the answer wrong.

The parent protested, pointing out that the earth is curved, and so the dropped ball would land before the one that rolled horizontally off the table.

The teacher held fast, and the argument grew as the parent finally accused the teacher of belonging to the Flat Earth Society.

PRODUCT INFORMATION

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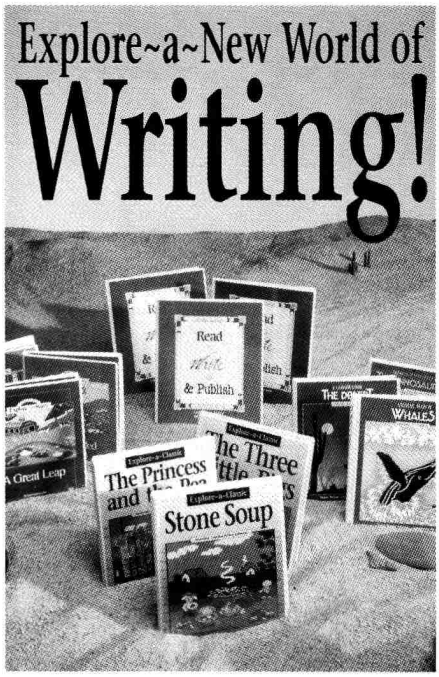
GIFT OF THE FUTURE

We in education must be careful to acknowledge the wonderfully complex world outside the classroom walls—a world of imperfections, yes, but a world without limits, where our children will invent their future and ours. We not only can prepare our children for our complex world, we must do so to ensure our own preservation and theirs.

To those who ask how we can afford the technology needed to bring our classrooms into the 20th century, let us ask: How can we afford not to?□

DAVID D. THORNBURG IS INVOLVED IN THE CREATIVE USES OF COMPUTERS IN EDUCATION. PRINCIPALS OF SCHOOLS WITH STUDENTS IN GRADES K–6 ARE INVITED TO WRITE TO HIM REGARDING A SCHOOL DONATION PROGRAM HE HAS ESTABLISHED WITH ROYALTIES FROM THE AUDIO TAPE *SUNSHINE THOUGHTS*, PRODUCED BY THE THORNBURG CENTER FOR PROFESSIONAL DEVELOPMENT, P.O. BOX 1317, LOS ALTOS, CA 94023-1317. PLEASE ENCLOSE A SELF-ADDRESSED, STAMPED ENVELOPE IF YOU'D LIKE A PERSONAL REPLY.



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PRINT RUN

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. Bracketed numbers in program listings refer to *inCider*'s Applesoft Proofer Program. For your copy send a self-addressed, stamped envelope to Proofer, c/o *inCider*, 80 Elm St., Peterborough, NH 03458.

ENVELOPE ADDRESSER

By Roger E. Stembridge

ADDRESSING ENVELOPES HAS always been the bane of computer users—it just never seems to come out right. Many of us simply resort to "low tech"—addressing by hand or on the typewriter. There's an easy high-tech alternative, though, if your printer happens to be an ImageWriter II and you're working with AppleWorks GS: Open a word-processor file with your return address and set up your printer to accommodate a #10 (standard business size) envelope. A few practice runs will make you an expert.

Here's the basic plan. First open a new word-processor file, then set your left margin for 9/16 of an inch (as far left as it'll go) and a tab of 4 7/8 inches. Press Return twice. Type your return address and select it. Set type size to 10-point and choose boldface. Place the cursor on the first line below your return address; hit Return eight times and Tab once. Press Open apple-S; when the dialog box appears, change the filename to ENVELOPE and save it in your correspondence folder. (Perform that last step just once; when you select this file in the future, it will open with the cursor in place for typing a name and address.)

Now type your correspondent's name and address and select them. Set type size to 10-point and choose boldface style. Check the name and address for accuracy, then press Open apple-P to start the printing process. Click on the *Better Text* button and turn on your ImageWriter II.

Pop up the plastic window over the platen; don't remove the other cover. Look straight down the rear edge of the platen while you turn it to back your paper out. Stop as soon as the edge of the paper disappears from view.

Push the paper-release lever to the friction-feed position and the paper-thickness lever down to the four-sheet position. Lift the paper bale on both sides. Insert a blank sheet of paper under the flap of the envelope, so that the flap is up and the paper is aligned at the left edge of the envelope.

Position the envelope on the platen with the right edge about 1/8 of an inch from the platen gear. Insert the envelope into the printer and roll it down until the top edge aligns with the red line on the clear plastic paper guide behind the printhead.

Now hit Return to start printing. As the printer types the return address, keep your finger on the upper-right corner of the envelope and guide it under the paper bale. After printing, reset the paper-release lever to the pin-feed position, move the paper-thickness lever to the single-sheet position, lower the paper bale, and replace the clear plastic window on the printer.

Click on the close box. When the dialog box asks whether you want to save the file, click on *No*. (If you save it inadvertently, cut the name and address, re-establish the cursor position for the name and address, and save again.) You can adjust the location of the name and address for envelopes of another size; just make sure the starting position for the cursor is the geometric center of the envelope.

Write to Roger E. Stembridge at 1 Hillview Drive, Rockwell, TX 75087.

CLIP-ART LOADER

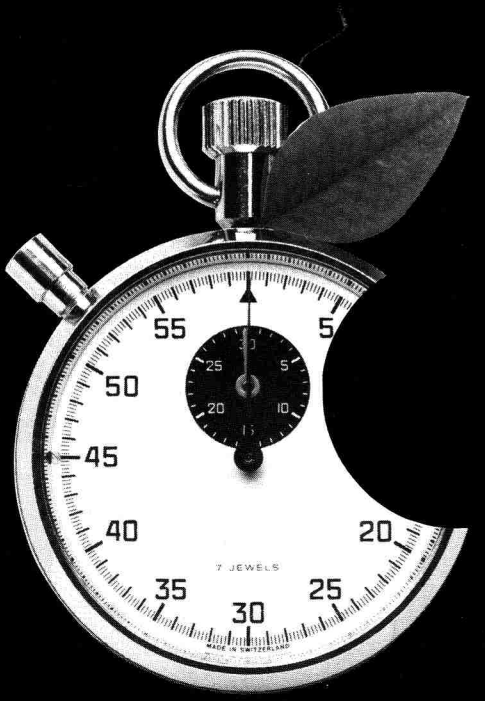
By Barclay R. Clemesha

IMAGINE USING PRINT SHOP GRAPHICS without having to load The Print Shop! Because this classic program from Broderbund Software doesn't use standard Apple graphics format, you can't just BLOAD a clip-art image for display on your monitor. PS.Loader (see the accompanying **Program listing**) is a handy little program that loads Print Shop graphics and displays them anywhere on screen—up to nine images simultaneously. It also lets you superimpose Print Shop clip art on a standard hi-res picture.

Just type in the **Program listing** and save it as PS.Loader. When you run it, it POKEs a short machine-language program into memory and after some initial computation presents you with a menu. You can load and display either a standard picture file or a Print Shop image. Coordinates *X* and *Y* refer to the screen position of the top left-hand corner of the Print Shop graphic. Maximum values for X and Y are 136 and 191, respectively.

After loading a Print Shop file, select *Paste Clip* to display the image at the chosen position. To invert the graphic, hold down the open-apple key as you paste the clip art. Holding down the solid-apple key blackens the section of the screen where you want to place the graphic. Do that first if you want to superimpose the image on a background. If you don't enter a filename, PS.Loader will display ►

IT'S ABOUT TIME



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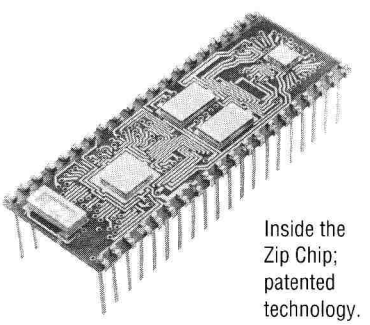
TECHNOLOGY

Circle 189 on Reader Service Card.



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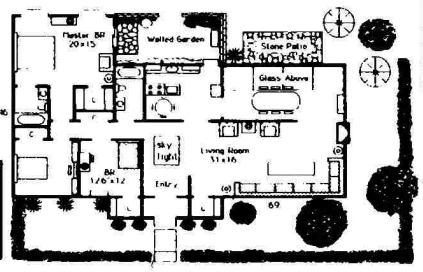

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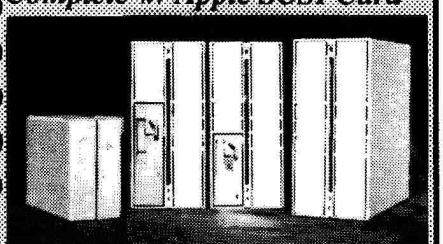

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Circle 231 on Reader Service Card.

Program listing. PS.Loader.

```
10  REM  Print Shop Clip Art Loader  [5319]
11  REM  by Barclay Clemesha  [3807]
12  REM  Copyright 1990, inCider  [4886]
20  HOME : PRINT "WORKING - PLEASE WAIT"  [1970]
30  FOR N = 0 TO 146: READ P%: POKE 7952 + N,P%: NEXT
    : ONERR  GOTO 50: REM  * Load ML program. Line 40
     creates look-up table  [7542]
40  FOR N = 0 TO 191:C% = N / 8:A% = N - C% * 8:D% =
    C% / 8:B% = C% - D% * 8:Y% = 8192 + 40 * D% + 128
     * B% + 1024 * A%:Z% = Y% / 256: POKE 28672 + N,Z
    %: POKE 28864 + N,Y% - 256 * Z%: NEXT   [15278]
50 PSLD = 7952:D$ =  CHR$ (4):M$ =  CHR$ (13):DR$ = "
    1": PRINT D$"PR#3"M$: HOME :LM = 35:WI = 2  [9468]
60  GOSUB 250: PRINT : FOR N = 1 TO 23: PRINT "|": NEXT
    :LM = 0:WI = 34: GOSUB 250: VTAB 2: PRINT "
         PS.GRAPH"M$M$"   Print Shop Graphics Loader"
    : FOR N = 1 TO 34: PRINT " ";: NEXT   [10100]
70  TEXT : GOSUB 240: GOSUB 260: VTAB 7: PRINT "1: DR
    IVE: D"DR$M$M$"2: COORDINATES: X,Y "M$M$"3: LOAD
    PS"M$M$"4: LOAD HGR"M$M$"5: SAVE HGR"M$M$"6: CLEA
    R SCREEN"M$M$"7. PASTE CLIP"M$M$"8. QUIT"M$: GET
    K$:K =  VAL (K$)  [31401]
80  ON K GOTO 230,130,110,160,150,170,180,340  [1474]
90  GOSUB 270  [1002]
100  GET KE$: GOTO 70  [1402]
110 AD$ = "4": GOSUB 120: GOTO 70: REM  * Load PS fil
    e  [2517]
120  GOSUB 280: PRINT D$"BLOAD"FILE$",A$"AD$"000,D"DR
    $: RETURN   [3753]
130  POKE 34,22: INPUT "X: ";X: INPUT "Y: ";Y: IF X >
    191 OR Y > 138 THEN 130  [4612]
140  GOTO 70  [227]
150  GOSUB 280: PRINT D$"BSAVE"FILE$",A$2000,L$2000,D
    "DR$: GOTO 70: REM  * Save screen  [10848]
160 AD$ = "2": GOSUB 120: GOSUB 270: GOTO 100: REM  *
     Load HGR file  [4848]
170  HGR : TEXT : GOTO 70: REM  * Clear screen  [3524]
180 YMAX = Y + 51:X% = X: GOSUB 220:LIT = BIT%:LYTE =
    BYTE%: REM  * LEFT BIT and LEFT BYTE  [7548]
190 X% = X% + 88: GOSUB 220:MIT = BIT%:MYTE = BYTE%: REM
     * MAX BIT and MAX BYTE  [8780]
200  POKE 27,MIT: POKE 28,MYTE: POKE 29,Y: POKE 30,YM
    : POKE 249,LIT: POKE 250,LYTE  [6575]
210  CALL PSLD: GOTO 90  [1278]
220 BYTE% = X% / 7:BIT% = 2 ^ (X% - 7 * BYTE%): RETURN
     [5157]
230  GOSUB 260: PRINT " DRIVE 1/2 ? ";: GET DR$:LM =
    37:WI = 42: GOSUB 250: HOME : PRINT "CAT,TBIN,D"D
    R$: GOTO 70: REM  * Set drive and catalog disc  [15642]
240 LM = 0:WI = 35:  [1826]
250  POKE 32,LM: POKE 33,WI: RETURN : REM  * Set text
     window  [5954]
260  VTAB 23: PRINT "                                ": VTAB
    23: RETURN : REM  * Clear input line  [5655]
270  POKE 49232,0: POKE 49234,0: POKE 49239,0: POKE 4
    9247,0: RETURN : REM  * Turn on HIRES  [4544]
280  INPUT " FILE NAME: ";FILE$: GOSUB 260: RETURN   [4441]
290  DATA  166,29,134,25,32,150,31,169,0,133,235,169,
    64,133,236,169,128, 133,251,165,250,133,238,165,2
    49,133,237,32,99,31,70,251,208  [19423]
300  DATA  10,230,235,208,2,230,236,169,128,133,251,3
    2,121,31,6,237,165, 237,201,128,208,6,230,238,169
    ,1,133,237,197,27,208,218,165  [19428]
310  DATA  238,197,28,208,212,230,25,32,150,31,165,30
    ,197,25,176,193,96,160,0,177,235,37,251,240,2,169
    ,255,174,97,192,224,128,144  [19045]
320  DATA  2,73,255,133,26,96,164,238,174,98,192,224,
    128,144,9,165,237,73,255,49,206,76,147,31,165,26,
    37,237,17,206,41,127,145,206,96,166  [28425]
330  DATA  25,189,0,112,133,207,189,192,112,133,206,9
    6  [9862]
340  END  [298]
```

the previous clip again, and you can change its position if you like.

To save the screen as a standard HGR file, choose *Save HGR* and enter a filename. When you want to catalog a specific disk, just select the drive that will contain that data disk.

PS.Load works under ProDOS, so you must first run your Print Shop files through the CONVERT utility from the ProDOS User's Disk, or Copy II Plus (Central Point Software, 15220 Northwest Greenbrier Parkway, #200, Beaverton, OR 97006, 503-690-8090).□

Write to Barclay R. Clemesha at I.N.P.E., C.P. 515 12201, S.J. dos Campos, Sao Paulo, Brazil.

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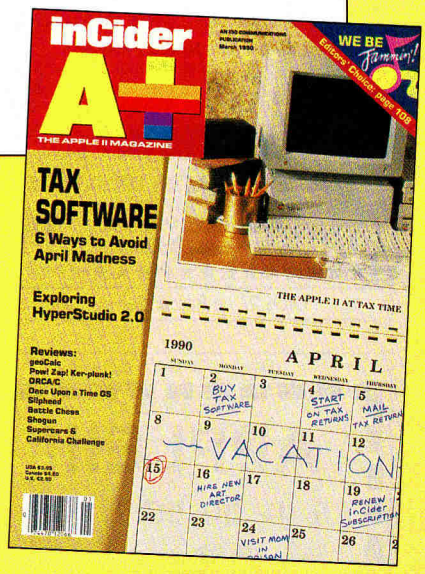

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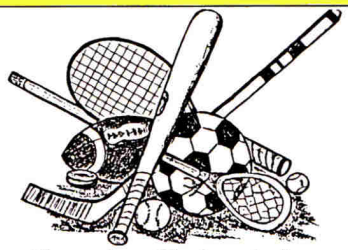

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The UltraMacros Primer teaches you everything you need to know to use TimeOut UltraMacros. The lessons in this book describe how to install UltraMacros, how to capture keyboard macros, how to write compiled macros, and much more. 260 pages, including dozens of examples and suggestions. Author Mark Munz is on the staff at Beagle Bros. $19.95 (plus $2 s/h).

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EDITORS' CHOICE

THIEF OF TIME

IF YOU COULD SAVE TIME IN A BOTTLE, CARMEN SANDIEGO WOULD probably steal it. Hold onto your possessions, because Carmen's back—and in Broderbund's **Where in Time Is Carmen Sandiego?** she's harder to find than ever before. Not only are Carmen and her V.I.L.E. henchmen (the gang from the Villians International League of Evil) trotting all over the globe, they're now skipping through history in a stolen time machine, as well.

You'll be in hot pursuit of Carmen's crooks around the world, from 400 A.D. into the 1950s. She's got her eye on Paul Revere's horse, Napoleon Bonaparte's hat, Queen Isabella's jewels, and a copy of the Magna Carta, among other items—so there's plenty to keep a private eye busy. As the Acme Detective Agency's newest Time Cadet, you'll get to bomb around in a 325i Chronoskimmer for a limited period. Catch your crook within the allotted time and you're a hero; take too long and you'll be reassigned for another try. Closing a case is no small feat here, but when you do you'll move up through the ranks just as in previous Carmen installments, and each successive case will be more difficult.

Along the way you'll interview witnesses and pick up tips. This time you're after such nefarious characters as Earl E. Bird, Justin Case, Nosmo King, and Lynn Gweeny; when you enter your clues into the Evidence Database and get a match with any of your suspects' traits, the computer will issue an arrest warrant and activate the capture robot.

"This latest episode in the continuing saga of Carmen Sandiego is by far the toughest," notes Review Editor Lafe Low. "I've always been a geography buff, but a history buffoon. You've got to have a good handle on both if you hope to recover the world's historical treasures from Carmen's mob." You'll need more than just an atlas to help you track down Carmen's hoodlums this time around, so consult your copy of the *New American Desk Encyclopedia*, included in the package.

The game's afoot—on a 128K Apple II for $44.95 ($54.95 for the school edition with teacher's guide and backup disk; $109.95 for a lab pack with teacher's guide and five disk sets). Contact Broderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101, (415) 492-3200. Put on your trenchcoat and polish your powers of deduction—Carmen's time has come.□

EDITORS' CHOICE SINGLES OUT ONE PRODUCT EACH MONTH THAT THE *INCIDER* EDITORS FEEL IS A SIGNIFICANT ADDITION TO THE APPLE II FAMILY OF PRODUCTS. PRODUCTS EVALUATED ARE AMONG THE MOST RECENT RELEASES AND MAY NOT BE AVAILABLE YET FOR RETAIL DISTRIBUTION.

BIG TALKERS

Street Electronics' Echo® products have set the standard for microcomputer voice output for over eight years. Teachers and parents have found that talking software adds a whole new dimension to computer-based learning. Children not only enjoy the novelty of having their computer talk to them, their attention span is increased, verbal cues and reinforcement keep them motivated as well as assisting non-readers, and learning becomes more personalized and fun.

Although there are a few quality programs which process "software only" voice, it is still necessary to use a dedicated speech add-on peripheral or plug-in board for nearly all of the "talking" educational software. There are over 100 software manufacturers including *Scholastic, Optimum Resource/Weekly Reader, Houghton Mifflin, Hartley Courseware, DLM, Edmark, and Laureate Learning Systems* who presently offer Echo compatible educational and special needs programs, and the number is constantly growing.

Most of the educational programs which are compatible with the Echos take advantage of the high quality female voice output. However, in those programs which require an unlimited vocabulary; for example, a talking word processor, the Echos' text-to-speech capability produces speech in an intelligible robotic-type voice.

The Echos come with a tutorial style manual, an external speaker with a volume control knob and headphone jack, and supporting software. The Echo IIB runs on the Apple® IIe and IIGS, the Echo IIC runs on the Apple IIc and IIc Plus.

Circle 92 on Reader Service Card.

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EYESORE VS. EYE PROTECTION

As today's monitors get bigger and brighter, anti-glare filters become less of an option and more of a necessity.

The right filter can combat eye fatigue, help eliminate headaches, even reduce overall body stress.

Yet, the irony is that something so good for your eyes can be such an eyesore.

In fact, most filters look like they belong to someone else's system.

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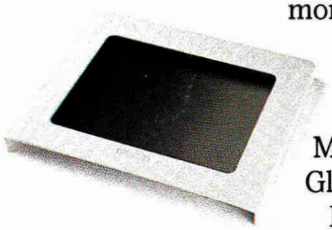

An example is our Maccessories® SE Anti-Glare Filter.

It looks so much a part of the SE, you would think it was designed by the same people who designed the SE.

The styling is complimentary. The color identical. Even the same material is used.

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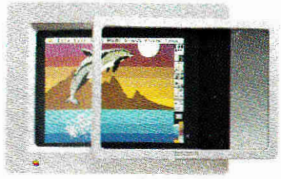
The result is a 96% reduction in glare. And an improvement in contrast and clarity of up to 20 times.

In short, the most advanced eye-protection system you can find today–it even filters out VLF and ELF radiation and dissipates static.

Kensington has custom designed screens for the Mac, Mac Plus, Mac SE, Apple IIGS, as well as for the entire Mac II family of large screen monitors.



For a free brochure, and the dealer nearest you, call 800-535-4242. In New York call 212-475-5200.

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