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January 1990

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THE CHOICE OF HOME PC ENTHUSIASTS SINCE 1979

19 PRIZEWINNERS!

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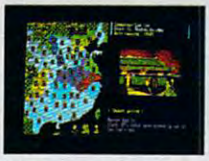

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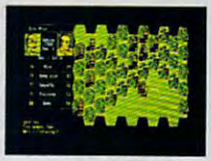

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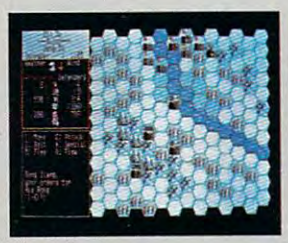
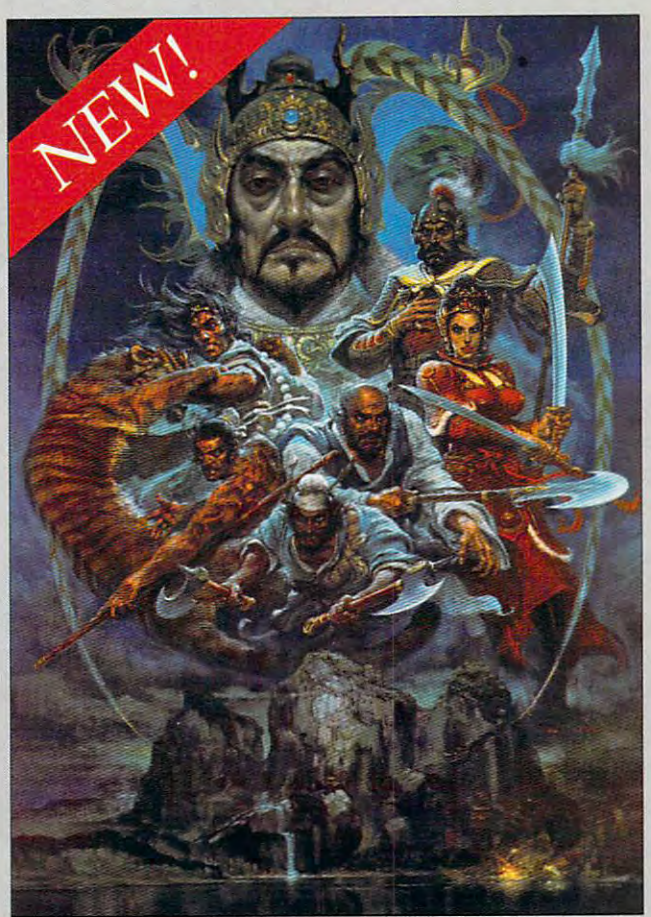
Strategy Simulations



IBM & Compatibles



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COMPUTE!

THE CHOICE OF HOME PC ENTHUSIASTS SINCE 1979

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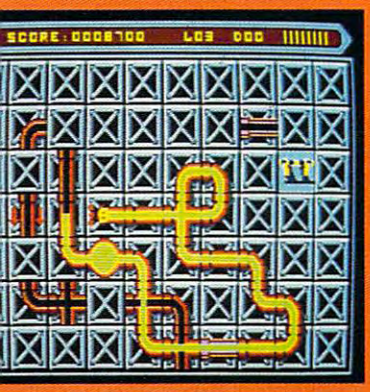

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Get what you want.

JANUARY 1990 • VOLUME 12 • NUMBER 1 • ISSUE 116

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EDITORIAL LICENSE

PETER SCISCO

Some notes from the underground—Montreal's underground, to be exact, which is located just a few blocks away from the site of the fifth annual Software Publishers Association conference. Centuries old, Montreal rises from its rocky archipelago in southern Quebec to flourish amid a rich French heritage.

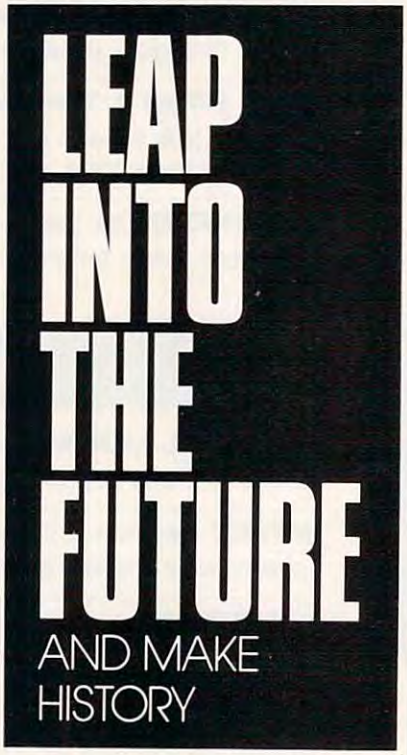
All that history seemed lost on the attendees, however, who were more content to cast their eyes on the future. That's no surprise—the computer industry is a future-driven business in which advances in technology define new areas before older ones can be fully explored.

Jim Dezell of IBM, for example, delivered a keynote speech that focused on improving education in America and on the role the computer has to play in furthering that goal. He then treated us to a fantastic display of multimedia wizardry. From cusp-of-the-century animation to a full-tilt, full-motion video newsreel of space shots, moon walking (the real thing, not the Michael Jackson shuffle—that's another bit of history), and Walter Cronkite, it was enough to warm the cockles of any skeptic's heart.

But as I walked out of that huge room, the graphics still a twinkle in my eye, I began to wonder what school system could possibly afford that kind of futuristic setup. While the mavens of technology tout the amazing technicolor audiodigital universe, schools across the country depend on the same audiovisual gadgets they used when I was a kid. I can still hear the *slap, slap, slap* of celluloid that accompanied every broken film, still see the blaze that burned through the motion picture frame and cast its watery shadow-fire upon the screen at the front of the room. I think there was a lesson there.

The computer-in-education revolution notwithstanding, most schools are limping along with eight-year-old 8-bit computers while big business relegates 16-bit systems to the maintenance staff. The lesson here isn't too hard to grasp: Corporations generate income and can afford the best, while schools generate nothing (except the workers who are expected to know how to operate all this new hardware) and can barely afford to maintain the equipment they have.

I'm not saying that American business doesn't deserve the best. I'm just saying that schools also deserve access to the latest technology, and it's going to take more than a handful of companies like IBM, Apple, Tandy, and Commodore to make sure they get it. And don't look to Uncle Sam—he's so broke he can't pay attention.



Meanwhile, at another SPA session, Microsoft glibly defined the 386SX with a megabyte of RAM as a home computer and not one person in the audience batted an eye. Not even Tandy, which continues to pursue the 8088 and 286-based home market with its *DeskMate* applications. I guess the 386, the 286, and the 8088 do have a lot in common: a huge installed base, billions of invested dollars, and MS-DOS. No matter how you feel about it, the inertia of the humongous MS-DOS software market has given that platform status as the standardbearer of home computing.

It would be a shame, this early in the history of home computing, to rally behind any one standard. A newer, better personal computer—and I mean better than the Macintosh, the Amiga, and the PC—may never see the light of day if we're not prepared to take that technological leap of faith that will catapult us into the next wave of personal computing.

The home computer of the future will have more than one face, and the home of the future will have more than one computer. A dedicated game system incorporating the latest in multimedia gadgetry will reign as the vehicle of choice for those family flights to fantasia. A more familiar system may reside in the den or office, with terminals in bedrooms (so Jack and Sally can access the CD version of the family encyclopedia) and the kitchen (so you can do your shopping online). In the family office, the business of running a dynamic home economy thrives.

Idle dreams? I don't think so. The basis for such a scenario is already here. With a little luck, we'll look back on this period of personal computing as a time of immense growing pains, of startling new technological developments, of innocence in a brave new world. We may never get in the book, but we're history. ⊡

We were saddened to hear of the death of John Anderson in the Bay Area earthquake in October. John was senior editor of features at *MacUser* magazine. He previously worked on the staff of *Computer Shopper* and, in its heyday, *Creative Computing*. John was a fine writer and editor. His family has our deepest sympathy.

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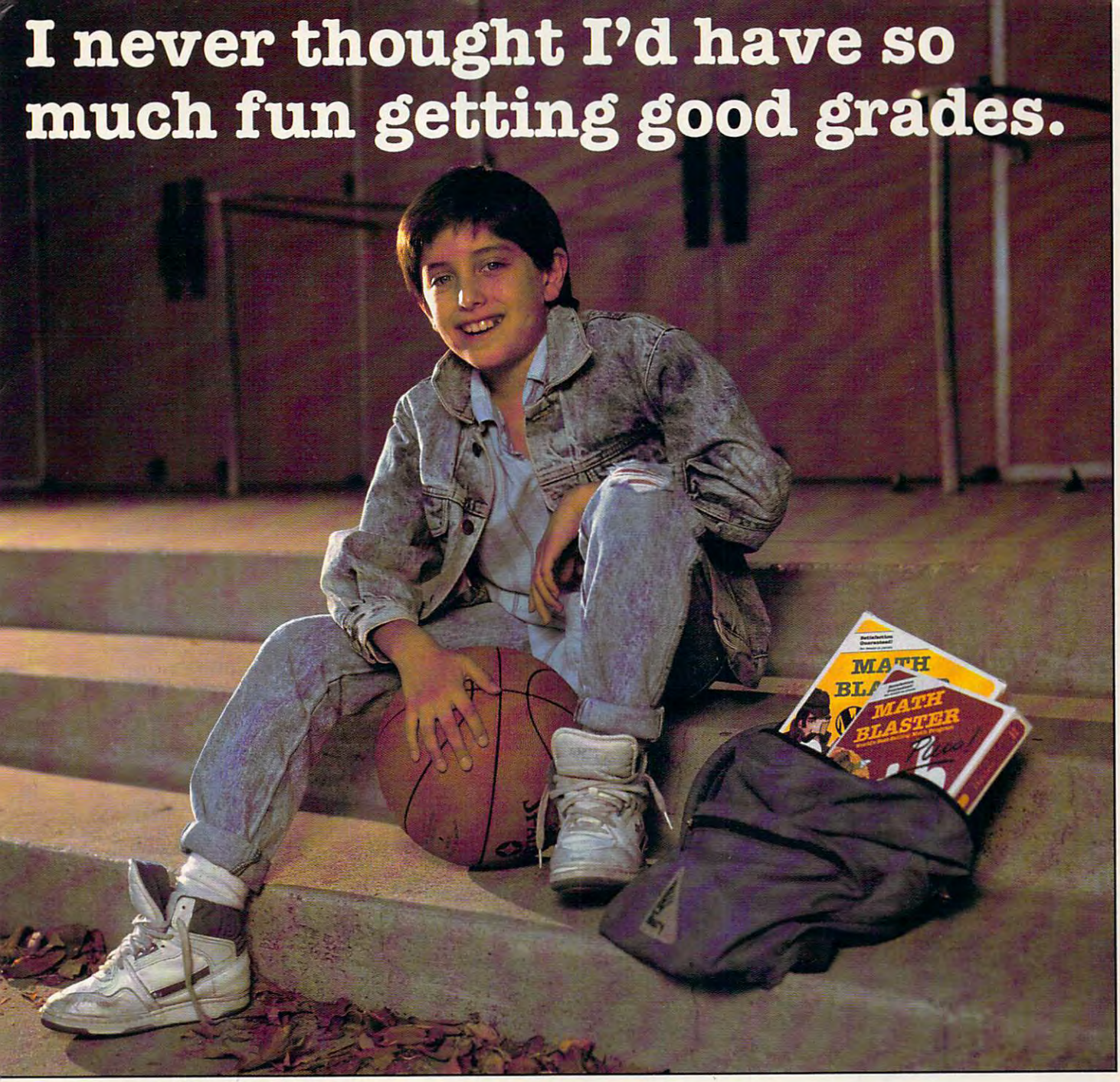
I never thought I'd have so much fun getting good grades.



Davidson Software Age Level Guide

PROGRAM	AGE LEVEL 3	4	5	6	7	8	9	10	11	12	13	14	15	Adult
Math Blaster Plus!				■	■	■	■	■	■	■				
Math Blaster Mystery NEW!								■	■	■	■	■	■	■
Alge-Blaster Plus! NEW!										■	■	■	■	■
Word Attack Plus!						▨	▨	▨	■	■	■	■	■	■
Word Attack Plus Spanish						▨	▨	▨	■	■	■	■	■	■
Word Attack Plus French						▨	▨	▨	■	■	■	■	■	■
Math and Me			■	■	■									
Reading and Me				■	■	■								
Grammar Gremlins								■	■	■				
Spell It Plus! NEW!						▨	▨	▨	■	■	■	■	■	■
Speed Reader									▨	▨	▨	■	■	■
Read 'N Roll								■	■	▨	▨			
Homeworker										■	■	■	■	■

▨ Additional data disks extend the level of the program.

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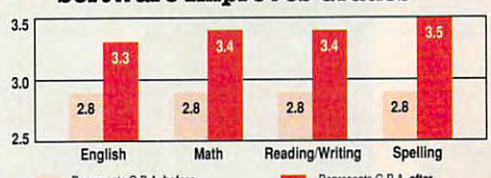
UCLA Study* Verifies Davidson Software Improves Grades



Represents G.P.A. before using Davidson software.

Represents G.P.A. after using Davidson software.

* This chart was created from information gathered in an independent study by MBA students at UCLA's Graduate School of Management.

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NEWS & NOTES

MARKETSPEAK AT SPA

To hear it told at last October's Software Publishers Association Conference, defining the consumer software market is akin to the old story of the blind beggars describing an elephant.

"It's not clear, from the development standpoint, how to manage the process of development in light of changing hardware platforms," said Mediagenic's Bruce Davis. For instance, he noted, magnetic media can't sustain the complex products that companies now produce.

Robert Garriot of Origin Systems claimed that consumers are looking for standards in computing. Phillip Adam of Spectrum HoloByte echoed that statement, saying that standards are the only way to increase the penetration of personal computers into the home.

By sheer market weight, the MS-DOS platform holds the best promise for a standard, a fact not lost on entertainment software developers. Many of their products come out on IBM-compatible systems before being ported to other platforms.

But some problems remain unsolved. Most noticeably, said Adam, the PC's poor sound-and-graphics capability. The advent of VGA and third-party sound cards may have some influence in those areas.

Beyond personal computers, the future of the home computer market would seem to involve dedicated systems of one kind or another, most likely game systems such as the Genesis and TurboGrafx-16, which boast more powerful graphics processors than the first-generation Nintendo Entertainment Systems.

—PETER SCISCO

Less Business, More Fun

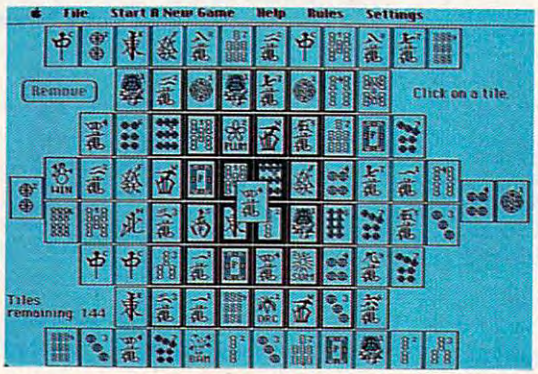
Mediagenic has divested two product lines: the Apple II–oriented Activision Presentation Tools and the Macintosh-oriented TENpointO.

The company wants to focus on entertainment, according to spokesperson Loretta Stagnito.

Mediagenic will continue to sell and support products in the Activision Presentation Tools and TENpointO lines. However, the company won't release upgrades to such programs as *Paintworks Gold* and *Reports*. Stagnito said Mediagenic will try to sell the two lines to another company. The Z-Soft division, a PC graphics group, will remain part of Mediagenic's family.

Although the company will continue to support such Mac entertainment favorites as *the Manhole*, *Cosmic Osmo*, and *Shanghai*, few new games will emerge for the Apple II line.

—HEIDI E. H. AYCOCK



Mediagenic will still release Mac games like *Shanghai*, but Apple productivity is over when the stock runs out.

IT'S A DATACRIME

Where are the after-the-fact horror stories from the Datacrime virus? The much-publicized virus was supposed to wipe out hard drives on October 12, 1989.

After all the panic, though, it seems that few people lost any data. Most people heeded the warnings and backed up their drives. Many other savvy users got copies of *Viruscan* or similar programs that check for this and other nasty viruses. Besides all of the prevention, this particular sickness wasn't as widely distributed as was previously feared.

Now that Datacrime has run its course, we can all wait anxiously for the next virus. Or we can back up our hard disks regularly and use a virus-detection and disinfection program like *Viruscan* (SharewarePlus Software, 150 South Magnolia Avenue, Suite 248, Anaheim, California 92804; 714-821-5090). Also, some legislatures are fighting back by making virus spreading illegal.

—RICHARD C. LEINECKER

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Teacher's Pet

According to a July, 1989 poll of teachers, the computer in your child's school may be voted most likely to succeed. The IBM-funded survey showed that teachers give computers an A-plus for their contribution to education. Computers have become a basic instructional tool, not just a passing fad.

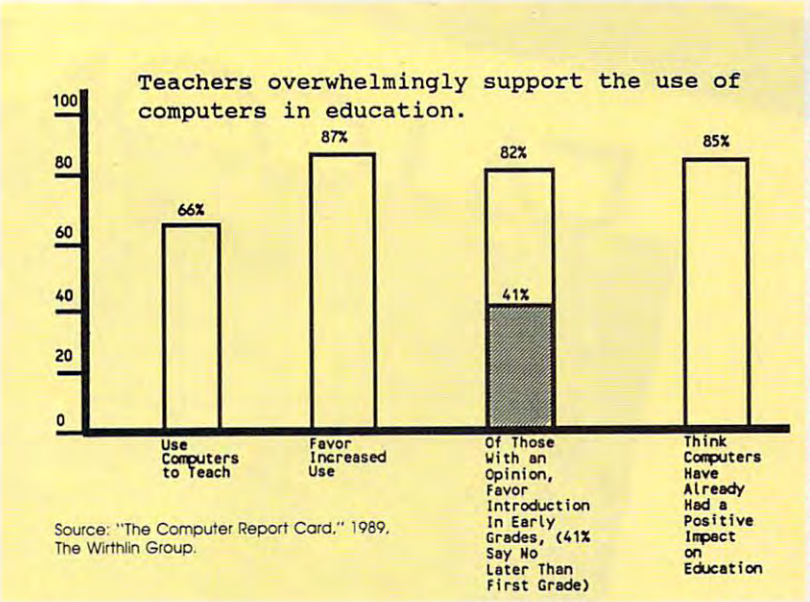
In a sample of 1100 teachers nationwide, 98 percent of the represented school districts had access to a computer. Teachers overwhelmingly supported computers in education—87 percent favored increased use and 85 percent think computers have already had a positive impact on education.

As a weapon in the war on social problems, computers also earn high marks. Three-quarters of the teachers said that computers can help reach students with messages about drugs, alcohol, and sexuality. Computers can also help reduce the illiteracy rate, according to 82 percent of the teachers. When it comes to classroom problems, the response isn't quite as dramatic. However, 64 percent said computers could fight the dropout rate, and 62 percent said they could help reduce discipline problems.

The downside is that most teachers believe a lack of funding will hold back developments in educational computing.

From the teacher's point of view, computers are important to the educational career, and educators need to learn more about them. From the student's point of view (according to the teachers), computer literacy is essential to being prepared for college.

—HEIDI E. H. AYCOCK



Source: "The Computer Report Card," 1989, The Wirthlin Group.

Numbers Game

Dataquest, a market-research firm in San Jose, California, released preliminary numbers from its 1989 home computer–market survey in October that cast some light on the population of personal computer users outside of big business.

Out of the 4070 households interviewed, 18 percent have personal computers, up 17 percent from 1988. Dedicated videogame systems were in 23 percent of the homes.

Eleven percent of those interviewed call themselves entrepreneurs, yet only 23 percent of those use computers. The three most frequently booted software packages are word processors, games, and spreadsheets, in that order.

Forty-four percent of the computer owners have hard disks, and 57 percent of them have color monitors. Surprisingly, CGA, EGA, and VGA divide almost evenly across three-fourths of that 57 percent.

Illustrating the scope of software piracy, almost 40 percent of computer users get their software through means other than computer dealers, mail order, or software stores. Still, 46 percent of those computer users spent more than $50 on software in the six months prior to the survey.

The survey did reveal one surprise: Twenty percent of the computer owners use their systems for music applications, from playing and composing to sound editing.

—PETER SCISCO

Screen Show

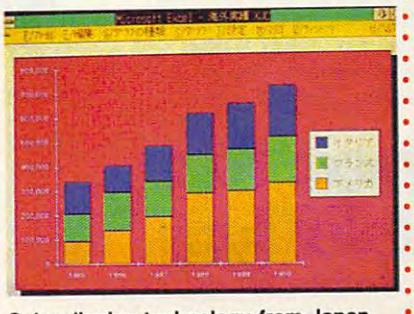
The age of the color laptop—the color *everything*—has arrived.

Vistors to October's Japan Electronics Show, held in Osaka, saw color screens blossoming in all shapes and sizes. At first glance, the most notable display was the number of color laptops. But the new generation of sleeker, sexier HDTV receivers stood out a bit more dramatically.

Closer examination revealed color wristwatch-sized TVs; briefcase-portable VCRs with built-in screens; full-color, sleek, flat LCD screens; and more.

The show wasn't all images—Sony unveiled its new Mavica digital camera. This year's model digitizes ten seconds' worth of sound along with the image it captures. Looks like the era of personal sound bytes is here.

—KEITH FERRELL ⊡



Color-display technology from Japan.

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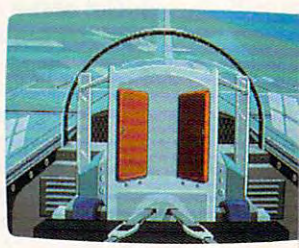

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Greensboro: COMPUTE! Publications, 324 West Wendover Ave., Suite 200, Greensboro, NC 27408; (919) 275-9809. Kathleen Ingram, Marketing Manager.
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Address all advertising materials to Tammie Taylor, COMPUTE! Publications, Inc., 324 West Wendover Ave., Suite 200, Greensboro, NC 27408.

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LETTERS

A New Pool

Thank you for reviewing our *Pool* billiards game in the October issue of *COMPUTE!*. We were encouraged by your observations that *Pool* offers a variety of game scenarios including competing against the computer, colorful graphics, and easy playing instructions.

The version of *Pool* which you reviewed was limited in that it required a math coprocessor to run at an exciting pace. Recent modifications to *Pool* make it 50 times faster on machines without coprocessors—fast enough to run on any PC. We feel that this change makes *Pool* the most exciting, competitive, and fun billiards game available.

DAN COY
AMES, IA

Mr. Coy is the author of Pool. *The game is available for $39.95 from HeartLand Software, 234 South Franklin, Ames, Iowa 50010; (515) 292-8216.*

Magic Disk Drives

Imagine my astonishment when I read in the November issue of *COMPUTE!* that Zenith has introduced a 2-inch, 720K disk drive that consumes 150-percent less power compared to 3½-inch drives. If it consumed 100-percent less power, it would of course consume zero power. Why, this is even greater news than the Utah superconductor breakthrough! A disk drive that not only consumes no power, but actually generates power as it runs! With enough Zenith disk drives strategically scattered around the nation, we could dispense with nuclear power, coal and oil-fired power, and even hydroelectric power and wind generators.

I'm having fun, of course. Mark Twain once remarked that there are three levels of lies: Lies, Damned Lies, and Statistics. Rumors of existing substantiations of his witticism are not exaggerated.

CURT SCOTT
GLENDALE, CA

The 150-percent figure Zenith claims comes from the fact that its MiniDisk drive requires .04 watt of power in standby mode, compared to .10 watt for a typical low-power 3½-inch drive. Just to be sure, we tested your theory by hooking a MiniDisk drive up to the office coffee machine. The drive didn't generate any power, the coffee was cold, and everyone in the office was really grumpy that morning.

How to Share

We have subscribed to *COMPUTE!* for many years now, and I only recently heard about a disk version of the magazine. Is this true? Does it accompany, supplement, or replace the printed version of the magazine? Is it a special anniversary offer only?

MICHAEL ALLAN
WESTLAKE, OH

COMPUTE!'s SharePak *is a monthly supplementary disk that contains top-quality shareware and public domain software. It complements the magazine but doesn't replace it. If you have a favorite shareware program that you think would make a good addition to a* SharePak *disk, we'd like to hear about it. Send suggestions to COMPUTE! Feedback, P.O. Box 5406, Greensboro, North Carolina 27403.*

Where Is Home?

In the "Letters" section of your September issue, you referred to a book called *Working from Home,* by Paul and Sarah Edwards. Could you give me the publisher's name or information on where to order this book?

Thank you, and I love your magazine.

TINA MAYDEN
CHILLICOTTE, MO

Working from Home, *by Paul and Sarah Edwards, is published by Jeremy P. Tarcher and distributed by St. Martin's Press, 175 Fifth Avenue, New York, New York 10010; (800) 221-7945.*

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COMPUTE! SPECIFIC

MS-DOS

POWER UP

PC Expo in Chicago isn't just the Second City's version of the PC Expo in New York; it's *different*. Midwestern practicality abounds (where else can you find seminars on *cabling?*), and exhibitors tend to fall into one of two groups: established companies with high-end products or up-and-coming concerns trying to get every bit of visibility they can.

This year's most exciting high-end offerings were demonstrated by WordPerfect and Borland. Hot on the heels of version 5.0, WordPerfect (1555 North Technology Way, Orem, Utah 84057; 801-222-4437) has developed *WordPerfect* 5.1, due to hit the shelves by the time you read this. The new *WordPerfect* boasts several innovative features topped off by an exciting facelift—pull-down menus and mouse support. The retail price is $495, and an upgrade will cost $85. The menus looked great, but there wasn't a mouse in sight at WordPerfect's booth. Old habits must die hard.

Borland demonstrated its soon-to-be-shipping *Quattro Pro* (Borland International, 1800 Green Hills Road, P.O. Box 660001, Scotts Valley, California 95066; 408-438-5300), a $495 *Lotus*-killer. The new *Quattro* boasts full mouse support; multiple, resizable windows; and dazzling graphs. One of the new program's most welcome features is its on-board paint module, which allows you to customize graphs without ever leaving *Quattro*.

Three of the most interesting new products were shown at up-and-comer Stanwood's booth. Developer Shayne Nelson demonstrated *Simply Ingenious*, billed as the world's simplest database; *Ingenious Edit*, proclaimed as the world's simplest editor; and *Ingenious*, touted as the world's fastest database (Stanwood Associates, 303 East Ohio, Chicago, Illinois 60611; 312-828-9734).

Simply Ingenious is a $40 program with just one command: N. If you want to add something to the database, you type *N* followed by the text. If you want to search, you type *N* followed by the text you want to search for.

Ingenious is due to be released soon. Its projected $500 price tag puts it in direct competition with all of the heavyweights.

I don't know if *Ingenious Edit* is the simplest editor around, but it's certainly the strangest. There's no cursor; you enter commands with keystrokes—definitely on the unusual side.

The practical side of PC Expo was displayed by Lehn & Fink's Glass Mates (Sterling Drug, Montvale, New Jersey 07645; 212-696-4744; $2.95), moist towelettes for cleaning glass and other PC surfaces (like keyboards, cases, and printers). The Glass Mates booth struck a resonant chord with Chicago's Expo attendees: The company was swamped with questions and requests for samples.

Publisher's Powerpak

For the last five years, desktop publishing (DTP) has been a PC growth area. The DTP tide has shifted recently, however, away from dedicated products such as *PageMaker* and *Ventura* toward high-powered word processors with DTP features. Leading this group are *WordPerfect* and *Microsoft Word*.

Although both programs have high-end DTP features, there's one other thing you'll need to produce snappy memos and newsletters: fonts.

Your printer—whether dot-matrix, ink-jet, or laser—will probably have some on-board fonts, but chances are they're variations on Courier, a typewriterlike face. For DTP that's not enough: You need at least two special typefaces, one with serifs, such as Times Roman, and one without serifs, such as Helvetica.

With *Publisher's Powerpak* (Atech Software, 5962 La Place Court #245, Carlsbad, California 92008; 619-438-6883; $139.95) and either *WordPerfect* or *Microsoft Word*, your font problems are over.

Powerpak is an add-in for *WordPerfect* or *Microsoft Word* (versions are also available for *Ventura* and *PFS:First Publisher*) that turns either of these products into a versatile DTP engine.

The best thing about *Publisher's Powerpak* is that it's completely transparent. With *Microsoft Word*, the program creates a special printer-definition file. When this file is loaded, *Word*'s page preview and other output functions work as they always do.

The program comes with three typefaces: Marin (Times Roman), Dixon (Helvetica), and Cobb (Courier). One of the package's most valuable aspects is that it lets you install fonts in almost any size. You can add more typefaces with optional Atech Font Packs ($29.95 each) or Monotype Font Packs ($79.95 each).

I tested *Powerpak* with *Microsoft Word* and 9-pin, 24-pin, and laser printers. It worked flawlessly with each and produced amazingly good output—especially with the laser printer.

The company offers a free demo disk, which allows you to select your printer and word processor—*Word, WordPerfect, Ventura,* or *PFS:First Publisher*—and then prints a test page. After this live, in-house demonstration, you'll probably find *Publisher's Powerpak* hard to resist.

Save the Environment

Just like earthworms and whales, your PC's DOS has an environment. It's a special area in memory that's set aside

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for important information the operating system needs to reference.

Your PATH resides in the environment (type *PATH* at the DOS prompt to see the current setting) as do other variables. Some variable names are reserved, such as PROMPT and COMSPEC; others can be freely created and assigned with the SET command. To see all your system's current variables, including PATH, enter *SET* at the DOS prompt.

The trouble with the DOS environment is that in its native state it's too small—a scant 160 bytes. If you have a large PATH and several variables, it's easy to exceed this limit. There's a fix, however.

With the SHELL command, you can tell DOS versions 3.0 or higher you want a larger environment, and you can specify just how large to make it. SHELL goes in your CONFIG.SYS and has the following syntax (make sure it's on one line when you type it in):

```
SHELL=
 drive:path\COMMAND.COM
 /E:size /P
```

If you're using DOS 3.0 or 3.1, *size* has to be expressed in 16-byte paragraphs, with an upper limit of 62 paragraphs or 992 bytes. With DOS 3.2 or higher, you can specify *size* in bytes with a top end of 32K.

Let's say that COMMAND.COM is in the root directory of your hard disk, and that you'd like to enlarge your environment to 512 bytes. Here's the command:

```
SHELL=C:\COMMAND.COM/E:512/P
```

The P parameter tells the system to run AUTOEXEC.BAT after CONFIG.SYS, which you'll want to do, so be sure to include it. Although you can make your environment larger, 512 bytes is a good upper limit you probably won't exceed. There are other limits you'll bump into first.

The biggest environmental limit is the length of a DOS line—127 characters. This means that a variable and its assignment are restricted to 127 characters. Chances are this will only be a problem with your PATH statement, which many users would prefer to be twice that length. So keep in mind that, while you can make your environment larger, variable assignments, including your PATH statement, can't exceed 127 characters.

— Clifton Karnes

DOS PROMPT

Over the past three weeks, I spent a lot of time accessing distant electronic bulletin boards (BBSs) and various online information services. My bills reflected this activity and were unusually high. As a result, I'd like to offer you a few tips on how to reduce your own online communication costs.

A PC, a communications program, and a modem can literally put the whole world at your fingertips. Just the other night, I had an opportunity to chat with an award-winning science-fiction writer when Mike Resnick and I happened to cross paths on Delphi. (Mike's *Kirinyaga* won the esteemed Hugo award for short story of the year at the 1989 World's Science Fiction Convention.) But while telecommunicating can be a lot of fun, it also can quickly get expensive.

On- and Offline

Like it or not, the least efficient factor in any online session is you—or, more correctly, your human limitations. If typing a typical letter takes you several minutes, and you compose all your messages online, then using a commercial service or distant BBS for regular correspondence can be an expensive proposition, indeed. Using front-end access programs can minimize the cost of telecommunications by allowing you to perform the majority of your online activities offline.

Different front-end access programs are designed to work with different online information services. One such program is *TAPCIS* (Software Group, P.O. Box 130, McHenry, Maryland 21541; 800-872-4768; $79.95) which allows you to automate many activities you'd normally perform on CompuServe.

TAPCIS includes a built-in word processor that can be used to compose messages destined for CompuServe subscribers. The advantage is that you compose messages offline when the clock isn't ticking. *TAPCIS* also lets you create a user file, containing the names and CompuServe user IDs of people to whom you regularly send messages. This information is used to identify individual users, thereby ensuring that your messages get sent to the correct mailing "address." After a message is written and addressed properly, entering a single command tells *TAPCIS* to call your local CompuServe access number, move to EasyPlex or any one of the more than 50 user forums CompuServe supports, send that message to the specified individual, and then end the current session and disconnect your call. Since *TAPCIS* performs all these activities automatically (that is, without user intervention), your online—and, therefore, billable—time is kept to a minimum. Additional operations *TAPCIS* automates include downloading any messages sent to you over CompuServe, monitoring conversations and conferences in the various CompuServe user forums, and simplifying online research by quickly retrieving threads of related information appearing in multiple messages.

Other front-end access programs are available that perform similar yeoman's duty with competing information services. *Aladdin* (Bret Mulvey; contact GEnie user BRETMULVEY for information; $59), for example, is designed to automate GEnie access, while *Lotus Express* (Lotus Development, 55 Cambridge Parkway, Cambridge, Massachusetts 02142; 617-577-8500; $195) endows MCI Mail subscribers with similar capabilities. If you use a specific online service, it behooves you to investigate whether there's a front-end access program specifically available for it. This is one category of software that will quickly pay for itself several times over in saved time and reduced billing charges.

Do It Yourself

Even without a front-end access program, it's still possible to automate many of your online activities, especially if your communications program includes a built-in macro feature or script language.

A macro is a group of commands assigned to a single keystroke or key combination. You could, for example, design a macro containing all the commands your communications program needs to dial your local CompuServe access number and assign it to an Alt-C key combination. Once this macro is created, pressing Alt-C would automatically initiate the steps required to access the log-on prompt for that commercial service.

A script resembles a macro in that it can contain complicated command sequences you execute by running that script. Scripts are generally more flexible than macros, however, because they can include special instructions for monitoring responses from a remote computer and then can alter the command sequences they execute, based on those responses. This is similar to the branch feature supported by many programming languages. Using a script, for example, you can monitor an online session to determine whether any messages are waiting for you on a given service. (Most services display some special message during sign-on if you have electronic mail waiting.) Should any messages exist, you can program your script to automatically access the proper user area and download the messages to a file on your system. If a *message waiting* (or some similar) prompt does not appear, the script can be designed to branch to a different command sequence that immediately ends the current session, thus reducing your connect charges.

Creating scripts may require some extra effort on your part, since working with a script language is similar in many ways to programming. With minimal effort and some determination, though, you should be able to master scripts. Writing scripts for your regular software has one big advantage over using front-end access packages: A single communications program can be used to access multiple BBSs or commercial services. Popular MS-DOS communications programs that include comprehensive script languages include *ProComm Plus* (DataStorm Technologies, 1621 Towne Drive, Suite G, Columbia, Michigan 65205; 314-474-8461; $89), *Relay Gold* (Relay Communications, 41 Kenosia Avenue, Danbury, Connecticut 06810; 800-847-3529; $295), *Smartcom III* (Hayes Microcomputer Products, P.O. Box 105203, Atlanta, Georgia 30348; 404-441-1617; $24), and *CrossTalk* (Digital Communications Associates, 1000 Holcomb Woods Parkway, Roswell, Georgia 30076; 404-998-3998; $245).

Now that I have that out of my system, I'll render unto Caesar (or in this case, Ma Bell and VISA) that which is his and get back online. I hope that these tips will help you keep your online charges within reason.

— Jack Nimersheim

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64/128

In the year 2025, when someone writes the definitive history of computing, the 1980s will surely be seen as the decade in which computers entered the home. I hope, when it happens, that the writer doesn't overlook the accomplishments of the Commodore 64.

Sure, it has been technologically bypassed. Sure, it has been ignored by the "serious" computer crowd. Sure, it has been supplanted by MS-DOS machines as the computer of choice for the development of entertainment software. And, sure, it's even overpriced.

But, if not for the 64, where would computer animation and sound be? (Apologies to the Atari 800, but the 64 made it happen.) If not for the 64, where would quality games be? (Same apologies to the Apple II.) If not for the 64, where would affordable word processing, spreadsheet, and database-management programs be? (No apologies at all to MS-DOS.) If not for the 64, how many people would have computers in their homes?

Despite all of the technological advances made by other platforms, the 64 is still alive. Commodore is expecting another good Christmas (I'm writing this in October) with a product that refuses to become an orphan. Software companies continue to release software for it, even if most of it is games. To cite just one example, Strategic Simulations (producer of the AD & D series of fantasy games) cites its sales of C64 software as particularly strong. The machine just won't go away.

Not bad for a high-tech product into its eighth year.

Starflight

By the time you read this, *Starflight* should be available for the 64/128. Distributed by Electronic Arts, *Starflight* has become a mainstay of the MS-DOS science-fiction gaming community. A game of pure exploration, *Starflight* lets you wander the galaxy, running into alien races and fascinating artifacts as you find a way to save your star system.

It's Star Trek–based. From a variety of races, you select a captain, science officer, medical officer, communications officer, and so on. Then you equip your ship with the best your measly sum of money can buy and head off into the galaxy.

The fascinating parts are planetary exploration and alien communication. You meet all kinds of creatures on the planets, and you can actually negotiate with aliens as you attempt to learn their cultures.

Starflight is a long game. But, then, the 64 community is used to long games. And if the conversion is a good one, this one will be worth trying. For more information, contact Electronic Arts, 1820 Gateway Drive, San Mateo, California 94404; (415) 571-7171.

Might and Magic II

Speaking of long games, New World Computing, through Electronic Arts, has released *Might and Magic II* for the 64/128. The original *Might and Magic* debuted on the Apple II, then danced successfully over to the 64/128. *M & M II* is bigger and actually better.

Three full disks are needed to contain this game, but the size does not impede play. The interface is intelligently designed, the graphics are striking, and the quest is huge without being frustrating. The reason is simple: You aren't forced to slavishly stick to a particular order of events.

As in most fantasy games, you can concentrate on battle expertise or on learning magic spells, or you can combine the two by sacrificing a bit of each. The game contains a wealth of different weapons and an equally impressive list of usable spells.

And *M & M II* thankfully solves role-playing's traditional mapping problem. By paying a few coins and having one of your characters become a cartographer, you have access to an overhead map at almost any point in the game. This wonderful feature makes the game not only easier, but positively friendly.

Unlike some of these games, *M & M II* lets you explore areas and cities in whatever order you wish. Portals are available to take you from place to place. Many events are timed, however, with the clues giving you the game day on which they will occur, so complete randomness isn't recommended. There's no need, though, to go from level 1 to level 2, or for any other artificial means of advancement. For more information, contact New World Computing, 14922 Calvert Street, Van Nuys, California 91411; (818) 785-0401.

— *Neil Randall*

APPLE II

AppleFest, the largest Apple II show around, is starting to look more and more like a swap meet. Once *the* national trade and user show for the Apple II, AppleFest is in danger of either disappearing or turning into a local fair where people shop for software and hardware bargains, not news and information about their computer.

The most recent AppleFest, held in San Francisco during September, sported large booths filled with software mail marketers and retailers. Crowds jammed those booths like no others. To make it even worse, many traditional exhibitors were absent, including Claris, publisher of *AppleWorks*, and Activision, a longtime developer of Apple II software. Both had been present at San Francisco's 1988 AppleFest.

Although the number and quality of exhibitors were off from years past, the numbers of people packing the hall were not. And those people were just as enthusiastic about their computers as ever. Educators especially were eager to find out more about how to use their own, and their classrooms', Apples.

And though no extraordinary announcements were made at AppleFest this year, though no new groundbreaking software was introduced, there were some highlights.

Brøderbund demonstrated its dedication to the Apple II by debuting three new products: *Where in Time Is Carmen Sandiego?, Prince of Persia,* and *Ancient Art of War.* Beagle Bros. and Applied Engineering, the premier Apple-only software and hardware companies, respectively, used new and not-so-new products to show that the Apple II is nowhere near the end of the line. And Roger Wagner Publishing's *HyperStudio* reminded AppleFest attendees that new software technology, in this case hypermedia, is within their reach.

If AppleFest makes it back to San Francisco next fall (not a sure bet), look for it to have been transformed into a teachers-only show. That's the direction Apple likes to see the II line heading (even the powerful and adaptable IIgs). And often, what Apple wants, Apple gets.

No New IIGS

In mid-August, Apple finally put to rest the rumors of a new Apple IIgs computer. Yes, there would be a new GS. No, it wouldn't be a new computer.

The confusion is understandable. The new IIgs is the same as the old one with more memory. The IIgs now comes with 1.125 megabytes of RAM (up from 512K) and 256K of ROM (up from 128K).

More memory means that an out-of-the-box IIgs will be able to run almost all GS software. That wasn't true of the weaker 512K machine. Now, rather than immediately spending money for more RAM, a IIgs buyer can spend that money on something else.

Say What?

One of the best quotes to come out of AppleFest in San Francisco was hidden in an Apple press release. In a section dedicated to discussing how the Apple II and the Macintosh can peaceably coexist, Jean-Louis Gassée, president of Apple Products, said, "We recognize that our customers have different needs and requirements for the computers they choose. . . . Just because the world now has automatic transmissions, doesn't mean that we no longer have stick shifts."

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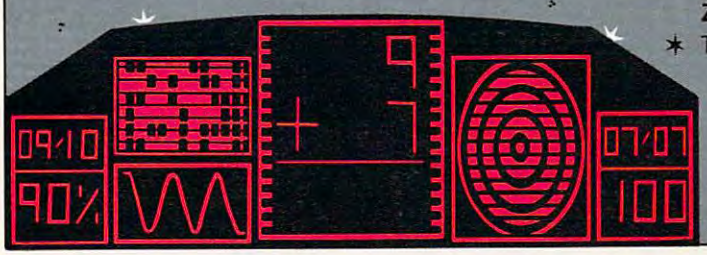

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wanted to *really* rip out from a standing stop, what would you want on your car? A stick shift you can jam yourself, or an easy-to-use, yet sluggish, automatic?

Slam your ancient Apple IIe into first gear and hit the gas.

— *Gregg Keizer*

AMIGA

In my youth, I used to defy Mom's orders and frequent the penny arcades to get in a few games of air hockey with the unsavory characters who hung out there. Today's kids can stay home and save their quarters by playing Brøderbund's *Shufflepuck Cafe.*

If you've ever played air hockey, *Shufflepuck* will be a snap to learn. Your onscreen paddle exactly mimics the movements of your mouse: Slam the mouse forward and your paddle hits the puck *hard. Shufflepuck Cafe* has the most realistic control of any game I've ever played.

The effect is enhanced by excellent graphics and stereo sound. When you ricochet the puck back and forth across the table, the puck sound moves from speaker to speaker. Your opponents' unique personalities are reflected by their grunts and comments, such as Biff Raunch muttering "Wimp!" when you miss a serve.

If you're looking for the perfect computer sports game, give *Shufflepuck Cafe* a try. Contact Brøderbund, 17 Paul Street, San Rafael, California 94903; (415) 492-3200.

EA EA OH!

Electronic Arts (EA) and affiliate label SSI unleashed four new Amiga games this month, three of which aren't copy-protected and can be installed on hard drives.

I guess EA figured that *Powerdrome* ($39.95) was too cool to risk releasing without copy-protection, and it was probably right. Sort of a hybrid of *Ferrari Formula One* and *Jet, Powerdrome* puts you in the cockpit of a futuristic Typhoon racing aircraft.

Unlike automobile racers, you have to contend with tracks that twist not only left and right, but also up and down. On higher-level tracks, strange atmospheres and varying gravities make the game even harder. If you've ever wondered what it would be like to fly an F-16 around a domed stadium, grab *Powerdrome.*

Swords of Twilight ($49.95) is a new game designed by Free Fall Associates, the folks who brought you *Archon.* A fantasy role-playing game, *Swords of Twilight* allows up to three people to play at once.

There's more to this game than exploring mazes and opening chests. Your actions in the game can affect your reputation: Slay a group of innocent commoners in the center of town and you'll have a hard time getting anyone to trust you. You can talk or trade with various characters, or, if that doesn't work, you can engage in arcade-style combat.

Swords of Twilight actually does a better job of capturing the flavor of role-playing games than does *Hillsfar,* the new Advanced Dungeons & Dragons adventure from Strategic Simulations. *Hillsfar* ($49.95) is more a collection of arcade games and puzzles tied together with an AD & D theme.

Still, *Hillsfar* is fun. You'll need to gain experience in the Arena, at Tanna's Target Range, and by picking locks and breaking into various buildings. Then you'll be ready for more serious threats in the cemetery and Maalthiir's castle. Unless you're a diehard die-rolling AD & D player, you'll probably like the arcade action in *Hillsfar.*

Finally, there's *Star Command* ($49.95), which could be the role-playing sleeper of the year. This is a game sure to fascinate folks who've played Traveler, the noncomputer science-fiction role-playing game.

In true role-playing style, your characters gain experience and skills as you take on a variety of missions ranging from antipiracy patrols to a final mission to save mankind. While the graphics are barely up to even Commodore 64 standards, the number of weapons, planets, and alien races in the game is impressive. This one won't get repetitive after a few hours of play.

For more information on these games, contact Electronic Arts, 1820 Gateway Drive, San Mateo, California 94404; (800) 245-4525.

— *Denny Atkin*

MAC

Along with the Macintosh's friendly interface, fonts have made the machine what it is today. But tomorrow, a new era dawns for desktop publishing on the Mac.

Adobe, the company that brought us PostScript, brings us *Adobe Type Manager* ($99), a type-enhancement package that lets you use high-quality PostScript fonts on the screen and on your ImageWriter. While the package is intriguing, it's also a little finicky. It works only with the outline fonts that Adobe has created. My beta version included Helvetica, Courier, Times, and Symbol. If you own Adobe fonts already, they'll work fine with *Adobe Type Manager.* On the other hand, if you want to use Palatino and your version of the font came from Apple, you'll need to buy another group of fonts for $198. The program works well, particularly when you set aside a big chunk of memory, print with a good ribbon, and use best mode. Although printing doesn't take much longer than usual, drawing the screen when you first open a file does. The worst problem is that you have to balance *Adobe Type Manager*'s memory needs against other programs' requirements. My one-megabyte Mac SE couldn't run *SuperPaint* when *Adobe Type Manager* was running with a 256K memory cache. A smaller cache means worse-quality printing.

From Apple, we get new outline fonts that were announced with System 7.0. Outline fonts are described by mathematical formulas instead of patterns of pixels. Besides taking up less memory, they are smoother, you only need one size to generate any other size, and the characters are more easily manipulated. (PostScript fonts are outline fonts.) In a later development, Apple agreed to share outline-font technology with Microsoft in return for a PostScript clone that Microsoft has acquired. As the first competitor for PostScript's market, Apple's product will certainly undermine Adobe's grip on the laser-printer market. On the other hand, those of us who use the Macintosh will reap the benefits because we'll see less-expensive printers and better output compatibility between Macintosh and PC files.

Other

Outside of the desktop publishing and graphics orchard, there are some telecommunications bushes and even an ambulatory apple tree.

When you choose a telecommunications service, count America Online in the list of nominees. Offered by Quantum Computer Services, this new telecommunications service includes bulletin boards, forums, and multiplayer games. Pull-down menus, icons, and windows make you feel at home. Membership costs $5.95 each month plus an hourly charge of $5.00. Contact Quantum Computer Services about introductory rates at 8619 Westwood Center Drive, Vienna, Virginia 22182; (800) 227-6364.

Finally, just so you know it's out there, the Macintosh portable has been released. This laptop won't fit in your lap very well; it weighs between 14 and 16 pounds. It's also more expensive than most low-end laptops—nearly $5,800 without a hard drive and $700 more with one. OK, so maybe it's not aimed at the home computer market, but the Macintosh portable is well equipped with a beautiful display, a trackball (instead of a mouse), and a SuperDrive (a high-density disk drive that reads MS-DOS disks and Mac disks). If you have to take your Macintosh wherever you go, this new machine may be worth the money, but most of us can function with an MS-DOS laptop and some good file-translation software.

— *Heidi E. H. Aycock* ⊡

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Disk Drives.

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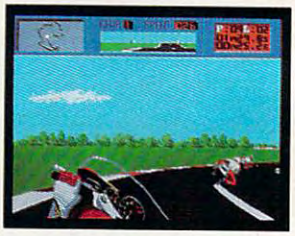

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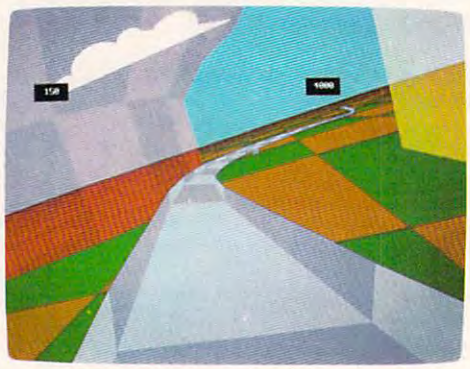

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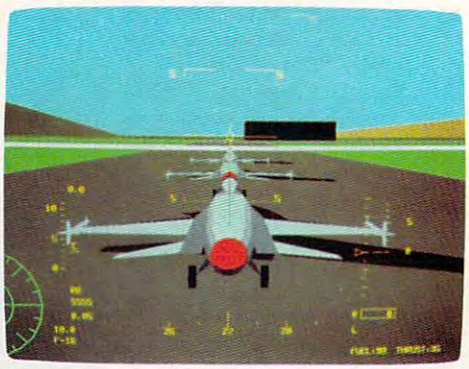

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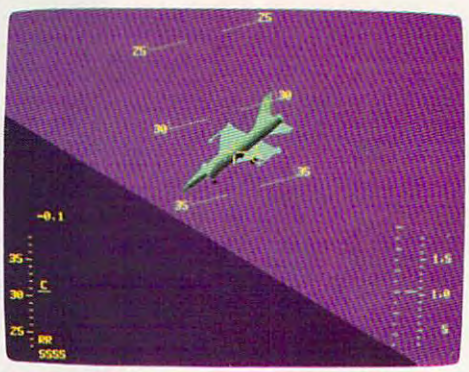

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COMPUTE! CHOICE AWARDS

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THE 1990 COMPUTE! CHOICE AWARDS

ONLY A FEW HOME COMPUTING PRODUCTS CAN BE THE BEST. HERE'S WHAT WE THINK THEY ARE.

THE EDITORS OF COMPUTE!

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For the second year in a row, the editors of *COMPUTE!* have dug out from under an avalanche of software and hardware to crown the year's best home computer products. Not all of them are flashy; not all of them are fun. But each one carries with it certain qualities that lift it above its peers.

This year we've expanded our categories to 19 and covered the areas we address every month—productivity, entertainment, and education. Across the board, we found many worthy contenders and a not a few pretenders to the throne. Some especially strong products in the simulation categories made choosing difficult, as did some great utilities, word processors, and hardware. In the end, though, we could choose only 19—19 out of the multitudes.

Of course, these awards don't encompass the entire computer spectrum, as we limited our choices to MS-DOS–based products. The other computer systems we cover had their own share of notable products this year, and we asked our staff experts and contributors to fill us in. You can read about their choices in "Best of the Rest" on page 39.

Last of all, we would never expect our readers to take our choices sitting down. To that end, we've devised a ballot so that you can vote for your personal favorite. You'll find it on page 32. We look forward to hearing from you and getting your views from the front lines of personal computing.

We try to maintain a healthy perspective on home computing here, which isn't always easy when bombarded with more software in one week than most people buy in a couple of years. We know it isn't easy for you to choose from among all the packages and products at your local computer dealer's store and in the mail-order catalogs. Our job is to tell you which products can enhance your computing experience and which ones will frustrate you. The breadth and depth of our experience with these products can help you make up your mind when it comes time to buy. We hope the COMPUTE! Choice Awards add to your knowledge and help you find the perfect packages for you.

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SMALL BUSINESS

BetterWorking Eight-in-One

Integrated packages are a boon to home-office workers and others in small businesses who have to keep a sharp eye on the bottom line. Almost anyone who buys a computer from a retail store will walk out the door with some kind of integrated software. By offering three or four programs under the umbrella of a similar interface, integrated packages make a lot of sense for both beginning and experienced users.

When it comes to balancing price and performance, it's hard for any integrated package to compete with Spinnaker's *BetterWorking Eight-in-One.* For under $60, you get a word processor with a spelling checker and a thesaurus, a spreadsheet with a companion graphing program for bringing presentations to life, a database, a telecommunications module, an outliner for brainstorming, and a slew of desktop

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COMPUTE! CHOICE AWARDS

accessories. This is a package you can live with for some time, and one that many people may never leave.

Couple the program's features with its ease of use and you have a package that can get right to work for your home business and your family's computing tasks as well. The key to computer productivity is a short learning curve and flexibility between applications. On the strength of its versatility alone, this is one program that can carry you into home computing without letting you down.

You also get a cache program, a hard disk optimizer, a program that encrypts and compresses your data, and a hard disk backup program that's fast and easy to use.

Best of all, the various component programs are well integrated with a common user interface, are of very high quality, and represent an excellent value. Or, to put it in just 12 words: *PC Tools* is the best utility you can buy for your PC.

UTILITY
PC Tools Deluxe 5.5

Describe *PC Tools* in 200 words? Impossible!

OK, here goes. The desktop portion of *PC Tools,* which uses as little as 40K, includes a notepad (you can load as many as 15 at a time), an appointment scheduler (with memory-resident alarms), a database (which reads and writes *dBase* files), three calculators (algebraic, financial, and programmer's), a telecommunications program (with scripting language, XMODEM, and background transfers), a keyboard macro program, and an outliner.

The shell portion of *PC Tools,* which uses as little as 10K, can launch your favorite applications with a single keystroke, work with two drives or two paths simultaneously, locate lost files, undelete files, and display a map of your computer's memory.

PERSONAL ORGANIZER
Arriba

This personal information manager (PIM) is as speedy as its name, offering a variety of useful tools for keeping track of contacts, addresses, dates, and memoranda. Good Software has lived up to its name as well, making sound choices about features and tradeoffs in *Arriba*'s design.

Although a character-based program, *Arriba* uses the file folder and file cabinet as its central metaphors. You store informational notes in folders; you gather groups of folders into file cabinets. You can search, link, and examine all of the information in your folders and cabinets in a variety of ways. Searching is particularly fast, and the program includes calendar functions that are among the best and most flexible anywhere. A resident function lets you keep *Arriba* in memory while you run other applications.

While there are some limitations—the size restrictions imposed on notes makes it difficult to coordinate large, text-intensive projects—*Arriba* nevertheless brings together a package of surprising suppleness and variety. Its interface is straightforward and simple, and the program contains plenty of help screens.

More affordable and easier to use than most PIMs, *Arriba* is the kind of program the personal computer was invented for.

WORD PROCESSING
Microsoft Word 5.0

When *Word* was introduced seven years ago, it set new standards for word processing. Microsoft, not content to rest on its laurels, has continued to improve, refine, and extend the program with each new release.

The latest version of *Word* has everything you'd expect to find in a high-end word processor—integrated spelling checker, thesaurus, macros, online help, and redlining—but you'll also discover an array of other powerful features including graphics import, math, style sheets, annotations, bookmarks, and a comprehensive tutorial.

Word's success, however, lies in the way it integrates its features through easy-to-follow menus, speed keys, and user-defined macros. This program's interface is also unusual in that it pairs a flexible text mode with a WYSIWYG graphics display, both powered by excellent mouse support and extensive keyboard control.

Microsoft Word 5.0 wins the 1990 COMPUTE! Choice Award for best word processor because of its depth and its intelligently integrated, elegant, and accessible interface. Microsoft's continued dedication to improving the program and supporting its user base is a model of industry commitment.

DESKTOP PRESENTATION/VIDEO
Perspective Junior

Perspective Junior earns its 1990 COMPUTE! Choice Award by packing so much power into a $149 program and including features usually found only in packages costing several times more. With its highly intuitive interface, you can be creating and printing presentation-quality graphics within an hour of installing the program.

By using a row/column data-entry format similar to that of spreadsheets, the program's data manager lets you easily enter the information—as values, headings, legends, titles, and so forth—that you

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The Ad Lib Music Card: Open your ears and blow your mind.

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New Compatible Games.

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Lucasfilm's Their Finest Hour: Battle of Britain

MicroProse's F-15 Strike Eagle II

Taito's Arkanoid II Revenge of DOH

Activision's Ghostbusters II

Sierra's Hero's Quest

Lucasfilm's Indiana Jones and the Last Crusade

System requirements: IBM PC, XT, AT, or compatible with 256K RAM, DOS 2.0 or higher, CGA, EGA, or monochrome graphics adaptor, and headset or external speaker.

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want to render graphically. *Perspective Junior* is compatible with other popular PC programs including *Lotus 1-2-3, Microsoft Excel,* and *Multiplan* as well as with ASCII files.

Multiple printer support, along with the ability to print to disk, brings even more flexibility to the program. Save your graphics to disk in either GEM or TIFF formats for export into other programs.

Even if you're only beginning to experiment with presentation graphics, *Perspective Junior* can get you out of the lab and into the real world of desktop presentations.

LANGUAGE/OS
DOS 4.x

Big Blue's favorite operating system got a shot in the arm with this latest version. Although DOS was temperamental in its first release, IBM and Microsoft have ironed out the kinks and provided users with an incremental step toward future PC-compatible operating systems.

Among this version's more notable features are its support for memory above the 640K limit and its ability to work with hard disk partitions larger than 32 megabytes. Simple to install and flexible to a fault, DOS 4.x makes moving up from DOS 3.3 a viable option for many users.

Also distinguishing this package from earlier versions—and perhaps acting as a harbinger of the DOS world to come—is its shell. If you've grown weary of the notorious DOS prompt, you'll appreciate how this graphics interface simplifies many of your computing tasks. You can perform several file operations in the shell, including loading a file and its governing application by means of the Associate command.

With indications that IBM will bundle *Windows* with DOS sometime this year, a graphics interface is a timely addition because it will initiate people who before opted for the command line or a third-party menu system.

The shell in DOS 4.x isn't *Windows,* and it isn't Presentation Manager as we'll see it implemented under OS/2, but it is a step in the right direction.

ADD ON/PERIPHERAL
UltraVision

It doesn't seem that long ago that you bought your state-of-the-art EGA adapter for your PC. Now VGA is the rage and, though you'd like to keep up in the graphics race, you can't justify spending almost $1,000 for a VGA adapter and a new monitor.

Enter UltraVision from Personics. This hardware/software combination gives EGA users many of the capabilities of a VGA system for only $120. This product adds a number of new display modes to the standard 80 × 24 EGA display. You can, for example, view 132 columns of text when working with large spreadsheets. With a multisync monitor, UltraVision makes your EGA card compatible with VGA's 640 × 480 pixel 16-color graphics mode.

With UltraVision, you're no longer limited to the default EGA colors; you can select any 16 colors from the 64-color EGA palette to use with your programs. The software also includes 17 custom screen fonts designed for better readability in the new high-resolution text modes. And best of all, UltraVision only occupies 7K–17K of RAM.

UltraVision takes home a 1990 COMPUTE! Choice Award for its power, usefulness, and value in a world of high-priced hardware.

STAND-ALONE HARDWARE
Sharp Wizard

The Sharp Wizard can't compete with a laptop, but then a laptop can't fit in your pocket or purse. The most popular media phrases used to describe the eight-ounce Wizard—electronic organizer, information manager, hand-held productivity device—are all on the mark. The Wizard offers an impressive array of features at the push of a button: calendar, phone directory, notepad, calculator, scheduler, and two clocks (local and world). It comes with 32K of RAM, a 16 × 8 line display window, and separate alphabetic and numeric keyboard layouts. The Wizard operates on two lithium batteries with a long-life battery backup.

But what makes the Wizard even more impressive is its array of support peripherals. Sharp offers IC cards that can be inserted into the Wizard's touch-sensitive window port. Available cards include 32K and 64K RAM cards, Time/Expense Manager, Thesaurus/Dictionary, and 8-Language Translator. Several more cards will be available shortly. Another offering is a cable-and-software package (PC and Macintosh versions available) for bidirectional downloading between the Wizard and your computer. Other support products include a small printer, a cassette data-storage device, and a Wizard-to-Wizard cable for exchanging information between units.

The Wizard garners a COMPUTE! Choice Award this year not just because of its dizzying array of features, but also because it provides a glimpse of the future of portable computing.

DESKTOP PUBLISHING/GRAPHICS
Publish-It! Lite!

Between the worlds of desktop publishing and word processing is a nether region of document processors, form makers, and label generators that offer specific functionality at the cost of overall flexibility. Not every user needs the power of *PageMaker,* nor is every user able to get by with a copy of *The Newsmaster II.* But a lot of budding publishers will find that Timeworks' *Publish-It! Lite!* fits the bill with power to spare.

Essentially a slimmed-down version of the company's *Publish-It!,* the *Lite!* version sacrifices little in its bid for ease of use. It runs under the GEM graphics environment, giving it a look similar to *Ventura Publisher. Lite!* can import formatted text from

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a number of word processors, as well as graphics in PCX and IMG file formats.

The few shortcuts *Lite!* makes are in the areas of document size, style sheets, and adjustable kerning. Still, even without those features, this program is all the publishing power many of us will ever need. To top it all off, Timeworks offers an inexpensive upgrade path to *Publish-It!* should you want to do more. Few publishing packages can deliver so much for under $60.

ENTERTAINMENT

ADVENTURE SIMULATION
SimCity

So many computer games take you to fantastic, unreal places—space, haunted dungeons, early history. *SimCity* takes you home.

This intricate, absorbing simulation will keep you occupied for hours. When you start with a blank tract of land, the possibilities for growth are infinite. Place a residential zone over here by the lake; drop an industrial zone over there by the river. A commercial zone buffers the cozy cottages from the belching smoke stacks, and roads connect all three. Add a little patience and you get cars moving along the highways, houses growing into apartment buildings, citizens complaining about taxes. Before long, you're building a stadium to host the Super Bowl.

Starting your own city is challenging fun, but you'll also enjoy playing the scenarios that Maxis Software has included on the disk. Tackle the simple malaise of a turn-of-the-century Dullsville, or solve the baffling nuclear meltdown of a futuristic Boston.

SimCity's graphics are detailed and translate well across a variety of computers. The designers have taken great care to use the strengths of each machine. Sound also speaks well for this game—a traffic reporter announces bottlenecks, Godzilla cries out in triumph, and the bulldozer buzzes across the landscape.

Maxis Software has created a game unlike any other and opened up a new genre of simulations. That effort alone is worthy of a COMPUTE! Choice Award, but the game's success speaks for itself. We hope a lot of software publishers are listening.

SPORTS GAME
Kings of the Beach

Take it from a volleyball player who has been sidelined with an injury, *Kings of the Beach* is an extremely realistic simulation of doubles in the sand. One day I was jumping up to spike the ball; the next day I was consoling myself on Electronic Arts' software beach, my knee in a brace and my next game postponed indefinitely.

Few other sports simulations reproduce the real feel of the game as *Kings of the Beach*. Take spiking, the high point in every volleyball junkie's game. This power hit is no trivial press of a joystick button. You have to time your double-click so that you jump and swing just right. One second off and you'll be at the apex of your leap while the ball bounces accusingly across the sand. Real life is no different, just more humiliating.

It's this sort of attention that makes *Kings of the Beach* a COMPUTE! Choice winner. It's also the interface, which works very smoothly; the sound, which complements the game with such effects as cheering crowds; and the graphics, which add detail, color, and humor to the game.

If you decide to play, a word of advice: The game's referee comes equipped with a stack of penalty cards. Don't argue with him; he'll give you a yellow card faster than you can shake the sand out of your shorts.

VEHICLE SIMULATION
Vette!

For years, the best computer vehicle simulations were over our heads—literally. Jet fighters and attack helicopters ruled the roost. When it came to more pedestrian pursuits, like driving, we were left with scrolling screens and a limited gaming universe.

No more. Spectrum HoloByte has succeeded in blending the best of flight-simulator technology (3-D solid-modeling graphics and a wide-open terrain) with the beat of city streets. The result is *Vette!*, a driving simulation so close to the real thing that GM could well see a decline in car sales.

In this game, you're not limited to a racetrack or a single ribbon of road. The designers have captured the city of San Francisco and rendered it faithfully on your computer. From the Golden Gate Bridge to the San Francisco Zoo, the entire downtown is your private Le Mans. Turn down almost any cross street you like in this point-to-point rat race against one of four exotic imports.

Vette! garners the COMPUTE! Choice Award for vehicle simulation by taking a genre—driving games—into the next generation. Although the hardware price is high (you need an AT-class computer with 512K of RAM and EGA graphics to get real satisfaction from playing), this package is both a fine example of what the PC game experience is all about and a harbinger of games to come.

ARCADE GAME
Archipelagos

The strange world of *Archipelagos* is so real that you may forget that you're sitting in front of a computer. Looking across the vast checkered landscape of a desolate future Earth, it's easy to lose your grip.

Your goals in *Archipelagos* are to shut down a network of nuclear-power nodes, clean up the Earth, and make the planet safe for humans. The spectacular graphics in EGA and VGA modes include an eerily alien landscape, blood-red toxic waste, and strange alien plant life. Your quest is made hazardous by waste patches, necromancers, and malfunctioning air cleaners. ▷

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By Robert Weatherby

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- ***Jordan's*** *air show*
- *The* ***Mailman*** *delivers the jam*
- ***Isiah*** *drives the lane*
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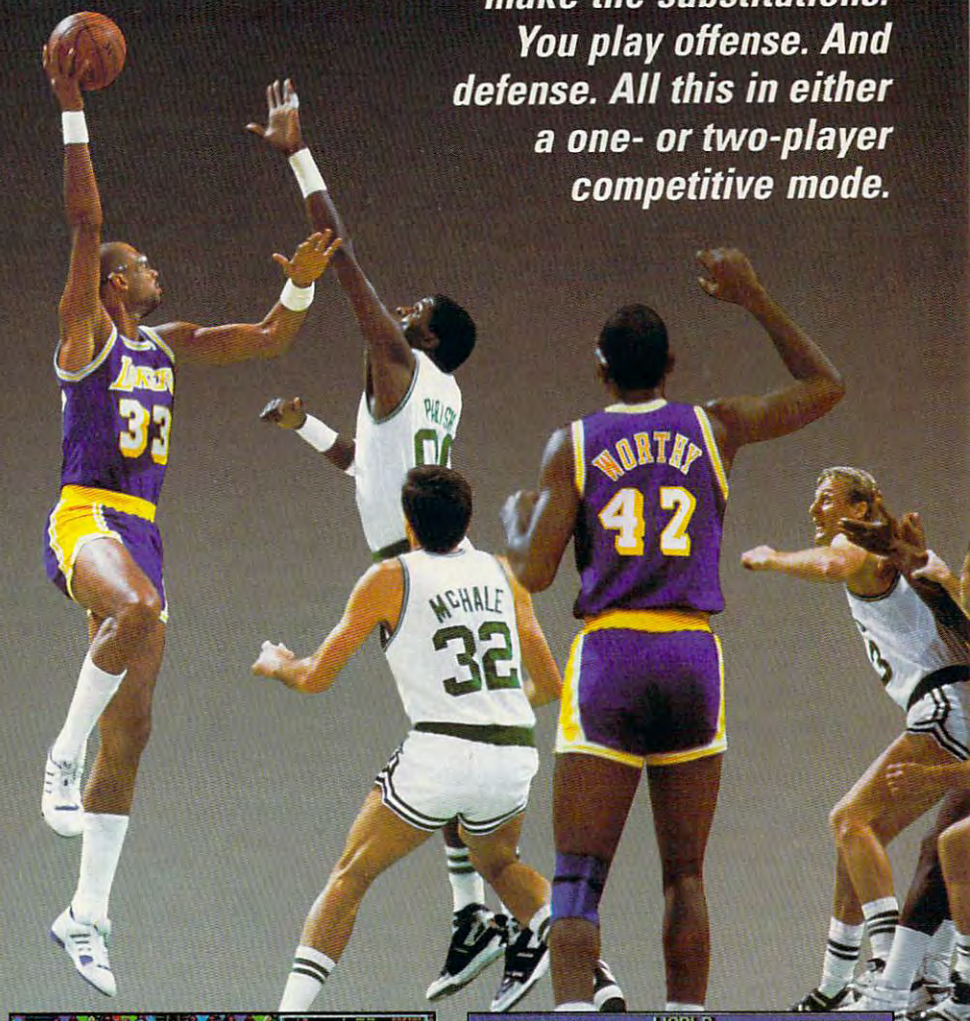

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IBM version $49.95 (5 1/4" or 3 1/2 " disks available). All screen shots represent actual IBM version. IBM is a registered trademark of International Business Machines, Corp.

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Archipelagos wins its COMPUTE! Choice Award for the way it combines great graphics, ease of control, smooth scrolling, and a fascinating and environmentally conscious scenario. With 9999 levels of play, you'll probably still be at it when the 1991 awards are given out.

WAR/STRATEGY
Red Storm Rising

If you thought reading Tom Clancy's bestseller *Red Storm Rising* really brought you into the heat of undersea battle, wait till you play the computer game.

Red Storm Rising is a submarine simulation based on best-selling author Tom Clancy's vision of World War III, and it is, quite simply, a gaming *tour de force.* You command a modern submarine in combat against Eastern Bloc subs and ships as the war in Europe waxes and wanes according to the success or failure of your actions.

A wide variety of torpedoes and missiles make a number of combat tactics possible. Modern submarine combat is guided from radar and sonar screens, not from a periscope. Fast action and realistic displays give you the feeling that you're really in the heat of underwater combat.

Red Storm Rising does take time to learn. You begin with a few training missions, where you learn the ins and outs of maneuvering your sub and firing at enemy ships. Then it's on to the battle scenarios, where you encounter everything from a lone enemy sub to that greatest of prizes: a carrier. Finally, you reach World War III, where your sub's actions can have a direct impact on the outcome of the conflict.

Rich in detail and surprisingly playable, *Red Storm Rising* sets the standard for submarine simulations.

FRP/ADVENTURE
King's Quest IV

The ever-popular King's Quest series continues with *King's Quest IV, The Perils of Rosella.* Complete with a ten-minute mini-film introduction through which you learn of King Graham's impending death, the Fairy Queen Genesta's missing magic necklace, and Rosella's uncommon bravery as she places her own life in jeopardy and accepts the call of duty, the journey winds through the kingdom of Daventry and environs. You'll encounter strange characters and creatures, whether in the light of day or in the dark of night.

The program's nine 5¼-inch disks contain an enormous amount of outstanding graphics and sound. When viewed on an EGA monitor, the characters and settings are as real as anything you'll see in a computer game. Sierra's 3-D effects add an extra dimension of enjoyment during your journey. The excellent audio, with music composed by Sierra's own musicians, supports many popular sound cards, including the Roland MT-32, the Ad Lib, and IBM boards.

We gave *King's Quest IV* a 1990 COMPUTE! Choice Award because of its inventive story, three megabytes of code, outstanding 3-D graphics, and unmatched sound capabilities. The game sets a standard others will be hard-pressed to match.

LEARNING

CHILDREN
The Children's Writing & Publishing Center

The Children's Writing & Publishing Center emerged this year from an excellent list of educational titles. Targeted for ages 8–14, the Learning Company's feature-laden package is not only an excellent introduction to desktop publishing, but is also a gentle initiation to word processing. Describing *CWPC* as "easy to use" is an understatement.

What really makes *CWPC* stand out is its ability to offer so many features without bogging down the user. Menus let you choose page format (newsletter, story, report, or letter), heading, and font style and size. All of these choices are graphically displayed, so all you do is view, decide, point, and select. The clip art is outstanding: 159 pieces are a couple of keypresses away. And placing your art is a snap: Move it wherever you like and the text wraps around neatly. A good-looking page takes but a few minutes of time. All popular printers, including color printers, are supported.

In its ads and packaging, The Learning Company makes the point, and rightly so, that *CWPC* is a tool that helps children to write and think clearly. A point not made, however: Adults will enjoy using *CWPC* as much as kids will.

YOUNG ADULT
College Explorer

Practically in a class by itself, *College Explorer* eases the laborious process of choosing which college seems most suited to the tastes of graduating high-school students or other young adults. The program's database of 2800 colleges, along with its 400 features and preferences that you can use to narrow or broaden your search, provides the enormous flexibility needed to find just the school that best fits your goals, ability, and financial situation.

Beginning with broad criteria specifications, the program narrows your choices with categorical questions about location, size, campus life, fees, competitive sports, majors, and more. By matching your preferences to its database, *College Explorer* lets you take that campus tour without shelling out for airfare or spending all your time and money ordering catalogs and poring over facts in the guidance counselor's office.

The database, the easy-to-use manual, and the helpful menus make *College Explorer* a simple pleasure in the search for higher education.

By assembling such a useful database and then providing ease of access, *College Explorer* makes choosing a college less a chore than a challenge. And that makes our choosing it for a COMPUTE! Choice Award all the easier. ▷

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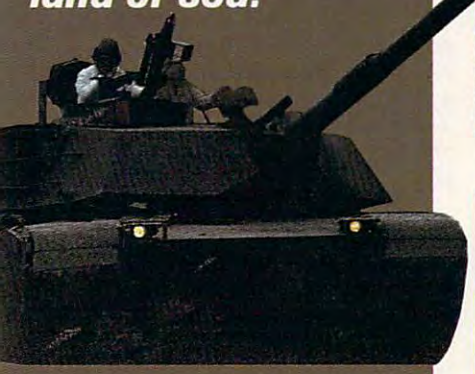
TAKE COMMAND

Electronic Arts introduces three state-of-the-art simulations for air, land or sea!



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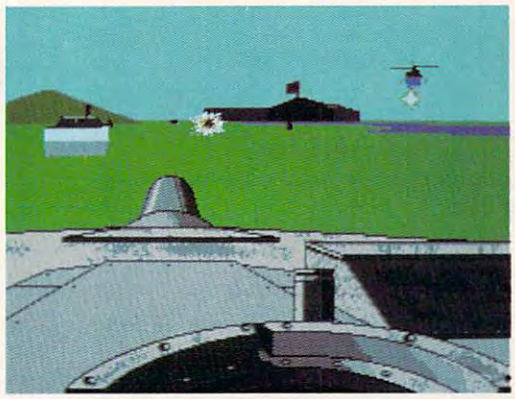
The hit is improved. New realistic terrain, Yeager's *Flying Insights*™ cassette, Thunderbirds formations, 18 aircraft, and more! White knuckle thrills with the master test pilot. $49.95.

By Ned Lerner



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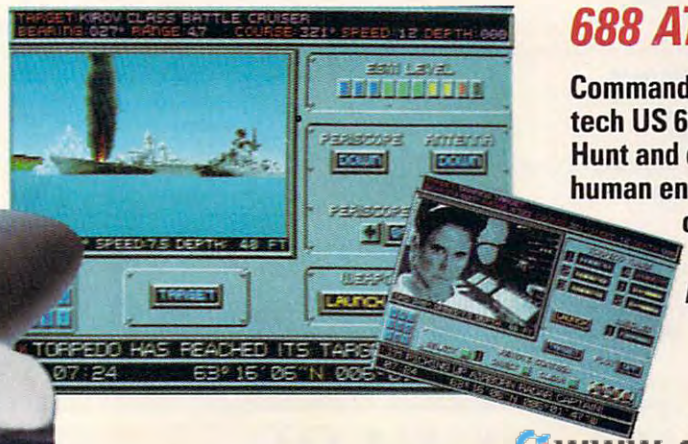

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By John W. Ratcliff

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COMPUTE! CHOICE AWARDS

ADULT
The Perfect Career

Choosing a career intimidates so many of us because it seems as though the quality of our lives depends on the quality of our job choice. *The Perfect Career* can help take off some of the pressure.

Through a series of nearly 180 questions, the program determines your abilities and interests in response to your answers. It then suggests possible careers suited to your interests and skills and directs you to in-depth profiles of those recommended careers.

Easy to use, *The Perfect Career* makes good use of its menu interface. At each juncture, you choose your next step from a list of possibilities. Summon charts with a keystroke; choose test answers by hitting a letter.

The program's interest and experience tests are detailed and probing. By the time you finish answering all the questions, the computer can tell you which jobs would be most interesting to you and compare them to the jobs for which you are most qualified. Mindscape's program includes work sheets that help you identify your career goals and gain the qualifications you lack for landing the ideal job.

We gave *The Perfect Career* the COMPUTE! Choice Award because it's such a great place to start your career search, whether you've just graduated from school or you're just ready for a change. This program fills a need with plenty of useful information. Armed with the facts, looking for that perfect job could be a lot less stressful. Landing it, of course, is up to you.

REFERENCE
PC Globe 3.0

Why didn't someone do this sooner? Organize the information you'd find in a top-flight world atlas—maps, geography statistics, demographics—and put it all together in the form of a disk-based interactive database. That's what Comwell Systems did, and did right. In fact, it did a *great* job.

The premise of *PC Globe* 3.0 is simple: Present a world map and let the user target a continent, a region, an international group (NATO, OPEC, or Warsaw Pact, for example), or a country. From here you can find major cities or geographical features, or even take a look at the selected area's topography. Beyond this, you can get facts and figures—presented as text or graphs—on population, age distribution, languages, ethnic groups, religions, health statistics, city information, gross national product, agricultural and industrial resources, imports and exports, government, culture, and tourism for any country selected.

Dig deeper in, say, health statistics, and you can get such data as pharmacists per capita. Want to compare this number with those from other countries? Select the countries you want from the menu and then press a key.

All of these features are but a hint at what *PC Globe* 3.0 offers. The program gets high marks for design, especially in ease of use, crisp graphics, and speed. It clearly demonstrates why more people should own and use personal computers. ⊡

1990 COMPUTE! READERS' CHOICE AWARDS

You've seen what we had to say about this year's crop of home computer packages. Now tell us what you think. Below are the top vote getters in each of our 20 categories. Check the products that won your support this year and mail in your ballot by March 1, 1990. Don't agree with what you see? Use the line below each group to write in your pick and the computer on which you use it. Mail your ballot to COMPUTE! Choice, P.O. Box 5406, Greensboro, North Carolina 27403.

Small Business
- ☐ BetterWorking Eight-in-One
- ☐ Lucid 3-D
- ☐ Quicken version 3.0

Word Processing
- ☐ Microsoft Word 5.0
- ☐ Ami
- ☐ MacWrite II

Personal Organizer
- ☐ Arriba
- ☐ Instant Recall
- ☐ WealthBuilder

Language/OS
- ☐ DOS 4.x
- ☐ Hyperpad
- ☐ Topspeed Modula-2

Utility
- ☐ PC Tools Deluxe 5.5
- ☐ ViewLink
- ☐ Norton Utilities 4.5

Desktop Publishing/Graphics
- ☐ Publish-It! Lite!
- ☐ Go-Script

Desktop Presentation/Video
- ☐ Perspective Junior
- ☐ Studio 1

Stand-Alone Hardware
- ☐ Sharp Wizard
- ☐ HP DeskJet Plus
- ☐ NEC Ultralite

Add On/Peripheral
- ☐ UltraVision
- ☐ VGA-TV

Arcade Game
- ☐ Archipelagos
- ☐ Hole-in-One Miniature Golf
- ☐ Outrun

FRP/Adventure Game
- ☐ King's Quest IV
- ☐ Hillsfar
- ☐ Space Quest III

Sports Game
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How to enter: Simply take the prize symbol "game piece" in this ad to your participating retailer. Exactly match the prize symbol on your game piece with one of the prize symbols found on specially marked packages of Data East MVP Sports' ABC's Monday Night Football games and you win the prize indicated. You may also obtain a match and win prize symbol game piece (while supplies last) and a copy of the winning prize symbols by sending a stamped, self-addressed envelope by December 31, 1989 to Data East MVP Sports Sweepstakes Requests, P.O. Box 8455, Beaverton, OR 97076. WA and VT residents need not affix postage to return envelope. If you are a prize winner, claim your prize by sending your winning prize symbol game piece with your signature and your name, complete address and phone number in the spaces provided via certified or registered mail to Data East MVP Sports Sweepstakes Winner, P.O. Box 8456, Beaverton, OR 97076. All winning claims must be received by January 10, 1990. Any official game piece or package symbol which is forged, tampered with, mutilated, contains printing errors or is obtained through other than approved distribution, is void. Decision of judges is final on all matters. All unclaimed prizes will be awarded in a Second Chance random drawing. If you are not an instant winner, print your name, complete address and phone number in the spaces provided on your prize symbol game piece and mail to Data East MVP Sports Second Chance Sweepstakes, P.O. Box 8458, Beaverton, OR 97076. Second Chance Sweepstakes entries must be mailed separately and received by January 10, 1990. If there are any unclaimed prizes, Second Chance winners will be randomly drawn on January 15, 1990, by ACS Marketing Services, Inc., an independent judging organization whose decisions are final. Odds of winning Second Chance Drawing depend on the number of unclaimed prizes and valid entries received. Not responsible for lost, late, misdirected, incomplete or illegible entries. Winners will be notified by mail. One Grand Prize winner will receive a trip for four to Super Bowl XXIV in New Orleans. Trip includes round trip coach airfare (or reasonable ground transportation if applicable), three nights lodging, tickets for four to the Super Bowl XXIV game, transfers to and from the game, pre-game brunch and $500 cash for expenses, approximate retail value (based on furthest point of departure) $8,500. One First Prize winner will receive $5,000 in cash. Two Second Prize winners will each receive a Sony Entertainment Center, approximate retail value $3,500 each. Three Third Prize winners will receive a Data East ABC's Monday Night Football Pinball game, approximate retail value $3,000 each. 1,000 Fourth Prize winners will each receive an ABC Sports Monday Night Football 20th Anniversary Commemorative video, approximate retail value $20 each. Total approximate retail value of all prizes $49,500. Odds of winning instantly are: Grand Prize—1:2,000,000, First Prize—1:2,000,000, Second Prize—1:1,000,000, Third Prize—1:666,667, Fourth Prize—1:2,000. Sweepstakes open to residents of the U.S. except employees and families of Data East USA, Inc., its affiliates, subsidiaries, advertising and promotion agencies and printers. All prizes will be awarded. Limit one prize per family/household. No substitutions or cash equivalents. Taxes are responsibility of winners. Sweepstakes void where prohibited, taxed or restricted. Winners may be required to sign affidavit of eligibility and publicity and travel releases. To obtain an official winners list, send a stamped, self-adressed envelope by March 1, 1990 to Data East MVP Sports Sweepstakes Winners List, P.O. Box 8460, Beaverton, OR 97076.

NO PURCHASE NECESSARY

If the prize symbol shown here exactly matches one of the prize symbols found on specially marked packages of Data East MVP Sports ABC's Monday Night Football Games, you win the prize indicated.

If you are a prize winner, claim your prize by filling in the information below and sending via certified or registered mail by January 10, 1990, to Data East MVP Sports Sweepstakes Winner, P.O. Box 8456, Beaverton, OR 97076.

Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____

Signature _____

prize symbol

See Official Rules for details.

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MONEYCOUNTS' smart account balancer makes fast work of even the toughest bank statements.

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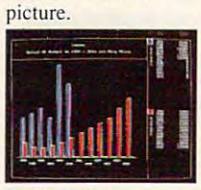

3-D bar charts let you easily compare your actual and budgeted results.

	MONEYCOUNTS*	QUICKEN*	MANAGING YOUR MONEY*	DOLLARS & SENSE*
Version	6.0	3.0	5.0	3.1
Manufacturer	Parsons Technology	Intuit, Inc.	MECA Ventures, Inc.	Monogram Software, Inc.
Suggested Retail Price	**$35.00**	**$59.95**	**$219.98**	**$179.95**
Account Balancer	YES	YES	YES	YES
Automatic Error Finder	YES	NO	NO	NO
Accounts Can Be Added When Entering Transactions (Data)	YES	YES	YES	NO
Financial Reports				
Actual Financial Results	YES	YES	YES	YES
Month and Year to Date	YES	YES	YES	YES
All Months On One Report	YES	YES	YES	YES
Budgeted Financial Results	YES	YES	YES	YES
Actual Compared to Budget	YES	YES	YES	YES
Actual Compared to Prior Month	YES	NO	NO	NO
General Ledger Report	YES	YES	NO	NO
Accountant's Trial Balance	YES	NO	NO	NO
Net Worth Computation	YES	YES	YES	YES
Inquiry Reports				
Check and/or Deposit Register	YES	YES	YES	YES
Account Analysis	YES	YES	YES	YES
All Transactions with Party	YES	YES	YES	YES
Cash Requirements Forecast	YES	YES	YES	YES
Aged Invoices Payable	YES	NO	YES	YES
Reports Export to Lotus or Quattro	YES	YES	YES	YES
Graphics	YES	NO	YES	YES
Bar Charts	YES	NO	YES	YES
Pie Charts	YES	NO	YES	NO
Optional Password Protection	YES	YES	NO	YES
Financial Calculator	YES	NO	YES	YES
Prints Amortization Schedules	YES	NO	YES	YES
Prints Accumulation Schedules	YES	NO	YES	YES
Mail List Manager	YES	NO	YES	YES
Prints Address Labels and Index Cards	YES	NO	YES	YES
Prints Telephone Directory	YES	NO	YES	NO
Mail Merge with Word Processor	YES	NO	YES	YES
Check Writer	YES	YES	YES	YES
Prints Laser Checks	YES	YES	YES	NO
Prints Any Pin-Feed Check	YES	NO	YES	YES
Personal Income Tax Estimator	YES	NO	YES	YES
Pop-up Note Pad	YES	NO	YES	YES
Pop-up Math Calculator	YES	YES	YES	YES
Optional Canadian Features				
International Dating	YES	YES	NO	NO
International Terminology	YES	NO	NO	NO
Capacity				
Total Number of Accounts Per File	999	255	**	120
Total Number of Open Transactions	100,000	65,535	**	4,000

*Trademarks of their respective manufacturers. **Varies based on RAM memory and disk space available.

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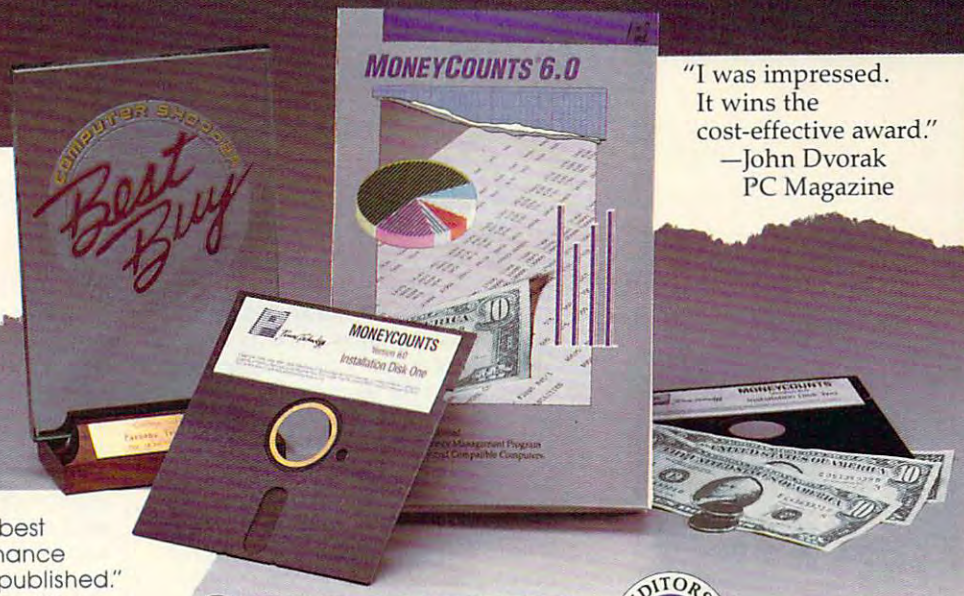
—Compute! Magazine



"I was impressed. It wins the cost-effective award."
—John Dvorak
PC Magazine

"One of the best personal finance managers published."
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GUARANTEED.

"MONEYCOUNTS is one of the finest examples of just how good inexpensive software can be."
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EDITORS' PCM CHOICE AWARD

We invite you to examine MONEYCOUNTS. ***It's the clear choice for home and business.*** MONEYCOUNTS is CPA designed, easy-to-use, menu-driven with on-line help, and requires no accounting experience. You'll appreciate the ease with which MONEYCOUNTS...

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- Prints any type of pin feed (or laser) check.
- Handles up to 999 accounts and 100,000 transactions a year.
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Or send check or money order payable to Parsons Technology

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MONEYCOUNTS 6.0 requires an IBM*/Tandy*/Compaq* or compatible computer, 384K or more RAM, DOS 2.0 or higher, 2 disk drives (or a hard disk). Works with all printers and monitors. Add $10 shipping/handling outside North America. Iowa residents, please add 4% sales tax.

*Lotus 1-2-3, Quattro, IBM, Tandy and Compaq are all registered trademarks of Lotus Development Corp., Borland International, Inc., Tandy Corporation, Apple Computer Corp. respectively.

Circle Reader Service Number 157

www.commodore.ca

MY VIEW

AMY NEWMARK

FOR GREAT EDUCATIONAL SOFTWARE, MATCH THE LESSON TO THE CHILD

Kathy, age 9, looks intently at her computer screen, her mouth set in concentration. "Eight times seven is . . . " She raises her eyes to the ceiling for inspiration. "Sixty-eight?" She types it on the keyboard and waits. BUZZ! "Sorry, that's not right, Kathy," a robotlike voice responds. "Try again." Her father, hearing the buzz, peeks in. Kathy's certainly dealing with educational material, but is she really having any fun?

Down the street at the Peterson house, Timmy and Mike laugh out loud as they zap an intergalactic glob with their space ray. "Wow! Did you see the colors on that one?" exclaims Mike. "Yeah, let's get another one like that!" Timmy agrees. His mother, hearing their laughter, looks in. Wasn't this supposed to be an educational game?

When you buy educational software for your children, the choices can be overwhelming. It's not simple, but here are a few guidelines for people who don't know where to begin and for people who want to get the most value for their money.

First, remember that your children's abilities and interests change often. What's appropriate for them now might not be in a year or even six months. Look for programs that are open-ended, programs that can grow with your children. Another option is to look for programs that have multiple skill levels; your children can start at an appropriate level and still be challenged for some time to come. But be critical of software claiming to be for age 4 through adult—chances are the folks on either end of the scale won't find the program appropriate.

Second, consider your goals and your children's preferences. You may want your children to use educational software as reinforcement or remediation. They may want to create and explore artistically or musically. Examine carefully the software's content. Make sure you match your children's needs and interests to what a program offers.

The more you know about a package before you buy it, the better. If it's a package your children use at school, ask a teacher for a demonstration. Some public libraries also have educational software you can use. Read package descriptions and promotional material carefully—skip over the high-sounding claims and get down to what activities are actually in the program. Don't forget to look at the hardware requirements of the program. If you don't have the requisite computer memory, joystick, and so on, the program could be useless.

Third, pay attention to the style of the program. Is it an arcade game? A tutorial? Is it a tool your children can use for writing, experimenting, or analyzing? Consider the method the program employs to get across educational information. Programs that are little more than electronic workbooks, even if they have interesting pictures and sounds, aren't any better than traditional teaching materials. Look for programs that take advantage of the computer as a unique medium. Your children should have some control over what level to start at, how fast to go, and when to exit a particular activity.

Match your children's learning styles to the program. If they need to work with long division, a program without any help features or visual tutorials won't be much good. If your children need a slower pace and get confused by too much information, look for programs that don't clutter the screen with a lot of text, moving objects, and arcade-style score counters.

Are there any negative themes or representations in the software? If you're critical of the TV programs and movies your children watch, you should be just as critical of the software they use. Programs with subtle sexist, racist, or violent themes should be ruled out.

Finally, educational software should be fun, but fun in a broad sense. It should intrigue. It should motivate. Educational software should let children create things and solve problems they make themselves, not just the problems given by others.

Educational software is never a substitute for good teaching or parental involvement in children's education. It can supplement experiences in school, but it can't provide a cure-all for learning problems. Good programs are worth finding—they get children excited about learning, they make certain tasks much easier, and they take advantage of a computer's power to do things creatively and uniquely. Parents who take the time to investigate educational software for their children will find it is time well spent.

Amy Newmark is director of the Computer Center at Lesley College. The college, located in Cambridge, Massachusetts, offers advanced degrees in Computers in Education. ⊡

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YOU'VE HAD A GUT-FULL! . . . **YOUR PURPOSE:** To wipe out this criminal organization and rescue the president's daughter. Even with the most sophisticated Assault Technology available, it won't be easy. You are the only one that can save the country from this sinister infestation . . .

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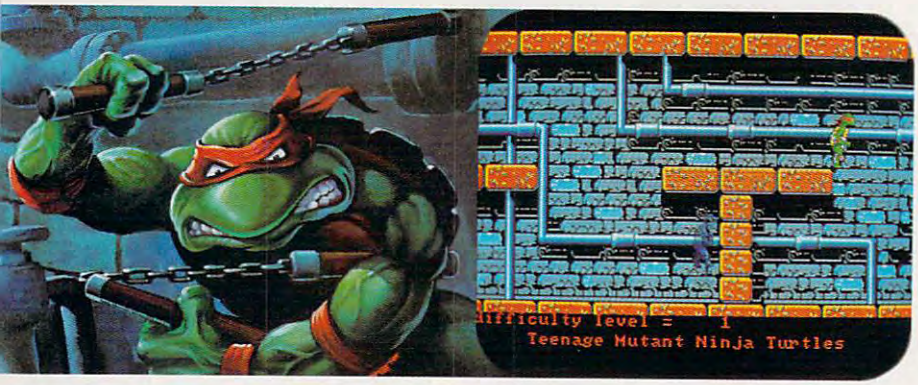
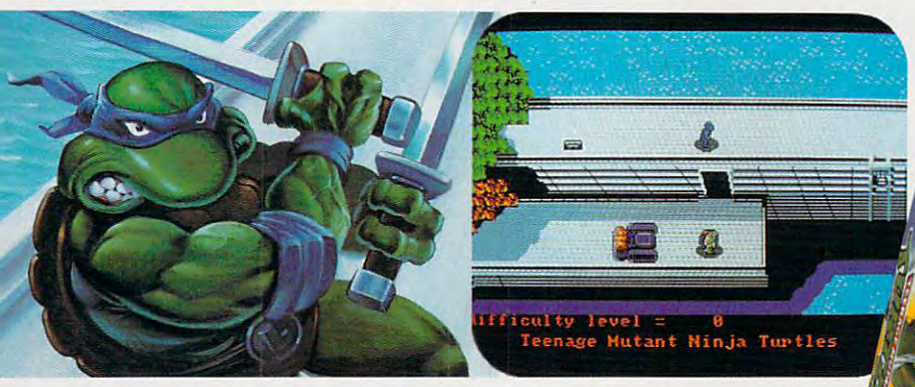
Circle Reader Service Number 193

FOUR COMPUTER HACKERS ARE ABOUT TO RAID YOUR DISK DRIVE.





No computer will go unscathed, as Ultra's version of Teenage Mutant Ninja Turtles® storms into your disk drive to duke it out with Shredder™—a maniac more menacing than an army of mind-altered Bruce Lees.

But if they're to survive, you must command the role of each turtle, rumbling through a maze of Mouser™ infested sewers, criminally polluted rivers and alleys patrolled by the fanatical Foot Clan.™

Along the way, search for bonus weapons like the Triple Shuriken. You'll have to also think fast, switching turtle identities in order to match their karate skills with those of the enemy.

So grab your joystick and nunchukus, then control every leap, chop, slice and dice, until you splatter Shredder senseless or get yourself hacked into turtle soup.

Now featuring the ULTRA® "GAME SAVE" command.

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Teenage Mutant Ninja Turtles is available for IBM, Commodore and Amiga.

Circle Reader Service Number 130

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BEST OF THE REST

Not everyone uses a PC. We know that because our staff is as diversified as our readers. So, while we're blowing the horns of this MS-DOS word processor and that MS-DOS game, we'll take some time out for the Macintosh, the Amiga, the Apple, and the Commodore 64/128.

We asked our columnists and editors to choose the five best packages released this year for their computers of choice. Besides listing the top five, we also included some runners-up. None of the COMPUTE! Choice winners were eligible for the Best of the Rest list. A product box that accompanies each list will help you find these packages easily.

When it comes to good software, 1989 was a very good year. You'll find some of your favorites in the lists that follow. Some may be predictable; some may be surprising. We found all of them worthy of our attention—and yours. ▷

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Best of the Rest

MACINTOSH

HEIDI E. H. AYCOCK

***MacWrite II* and *WriteNow* 2.0.** These two packages run neck and neck for the best word processor. They're less expensive than the excellent new version of *Microsoft Word,* but you still get a good assortment of features. Unless you need a Goliath of a word processor, one of these Davids makes a great buy. Each includes footnotes, mail merge, spelling checkers, and other features you would expect, and you don't pay for features you might never use.

Studio 1. This new package is Electronic Arts' entry into the Macintosh graphics category, and I have to place it among this year's best releases because it's significantly different and innovative. I'd call *Studio 1* a new approach to graphics, but it's really a close relative of the *DeluxePaint* packages available for other computers. Beyond the excellent painting tools, *Studio 1*'s real advantage is its easily learned animation module.

***SuperPaint* 2.0.** Silicon Beach has developed an excellent upgrade to a package that was already best in its class. Custom painting tools, AutoTrace, and Bezier curves are just a few of the new features in this hybrid of drawing and painting packages.

MacScuba. This game took a long time to master—I had to break down and call Paradise Software for tips—but it was well worth the effort. You won't find the game in a slick, shrink-wrapped box, but you will find it fascinating. Besides simulating scuba diving, the game challenges you to explore a sunken ship and to negotiate with some of the carnivorous fish that swim around the wreck.

Just Enough Pascal. This educational package is a companion to *THINK's Lightspeed Pascal* from Symantec. Stored under the Apple Menu, the tutorial teaches you how to program in Pascal while you build an application you can be proud of. The program is easy to use: Just click on buttons to get from your lesson to more help; click another button and you're in the program-tinkering sessions. Adults and children alike will enjoy this program. By its nature, programming is hard to learn for most of us, but *Just Enough Pascal* makes it a little easier.

Notable Nominations

Gather your kids around you and take a trip into the entertaining fantasy world of Mediagenic's ***the Manhole.*** It's a journey through teacups, into rabbit holes, and up beanstalks.

The fun's not as sophisticated as a simulation, but if you want an entertaining arcade game that runs ahead of the pack, try Brøderbund's ***Shufflepuck Cafe.***

Priced well and full of good features, Brøderbund's ***Drawing Table*** offers something other midrange graphics packages don't offer: the ability to wrap text around objects.

Add-on spelling checkers face a big challenge from most word processors. But the other features in Electronic Arts' ***Thunder II,*** particularly the glossaries and the search-and-replace macros, are well worth the money.

Figuring out fonts can be tough, but Erfert Fenton has taken much of the work out of it with the book ***The Macintosh Font Book.*** Published by Peachpit Press, the book explains how fonts work, how the Macintosh keeps track of them, and how you can take control of them.

Where to Pick Up These Picks

Drawing Table—$129.95
Shufflepuck Cafe—$49.95
Brøderbund
17 Paul Dr.
San Rafael, CA 94903-2101
(415) 492-3200

Just Enough Pascal—$75.00
Symantec
135 South Rd.
Bedford, MA 01730
(617) 274-4800

The Macintosh Font Book—$23.95
Peachpit Press
1085 Keith Ave.
Berkeley, CA 94708
(415) 527-8555

MacScuba—$49.95
Paradise Software
P.O. Box 50996
Phoenix, AZ 85076
(602) 893-8324

MacWrite II—$249.00
Claris
5201 Patrick Henry Dr.
Box 58168
Santa Clara, CA 95052-8168
(408) 987-7000

the Manhole—$49.95
Mediagenic
3885 Bohannon Dr.
Menlo Park, CA 94025
(415) 329-0500

Studio 1—$149.95
Thunder II—$79.95
Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
(415) 571-7171

SuperPaint 2.0—$199.00
Silicon Beach Software
9580 Black Mountain Rd.
Suite E
San Diego, CA 92126
(619) 695-6956

WriteNow 2.0—$195.00
T/Maker
1390 Villa St.
Mountain View, CA 94041
(415) 962-0195

AMIGA

DENNY ATKIN

Populous. Within days of first booting *Populous,* I had shelved my Great American Novel, friends had reported me missing, and my cat had taught himself how to open a can of 9-Lives. In what must be the most intriguing game scenario of the year, *Populous* makes you a god. Your goal is to make the world livable for your followers. This would be a lot easier if there weren't another god on your world with the same plan. You have to increase the size and strength of your population by leveling out mountains and creating new land for your people to build homes and fortresses on. At the same time, use your divine powers to create volcanoes, earthquakes, swamps, and other disasters to make life miserable for the followers of your evil nemesis. If you do manage to conquer the world, there are 499 others waiting. Fascinating as a solo war game, *Populous* also lets you play against a human opponent using a modem.

Falcon. Takeoff, eh? Spectrum HoloByte's F-16 flight simulator hit the Amiga with a sonic boom this year and came back at Mach 2 with an upgraded version and the *Operation: Counterstrike* mission disk a few months ago. With five ranks (difficulty levels) from First Lieutenant to Colonel and a variety of air-to-air and air-to-ground missions, *Falcon* should satisfy both casual and dedicated flight-simulator fans. Is this game realistic? Well, after seeing *Falcon,* the Pentagon asked Spectrum HoloByte to help develop simulators for military pilots.

Dungeon Master. I don't know how they managed to cram a dungeon

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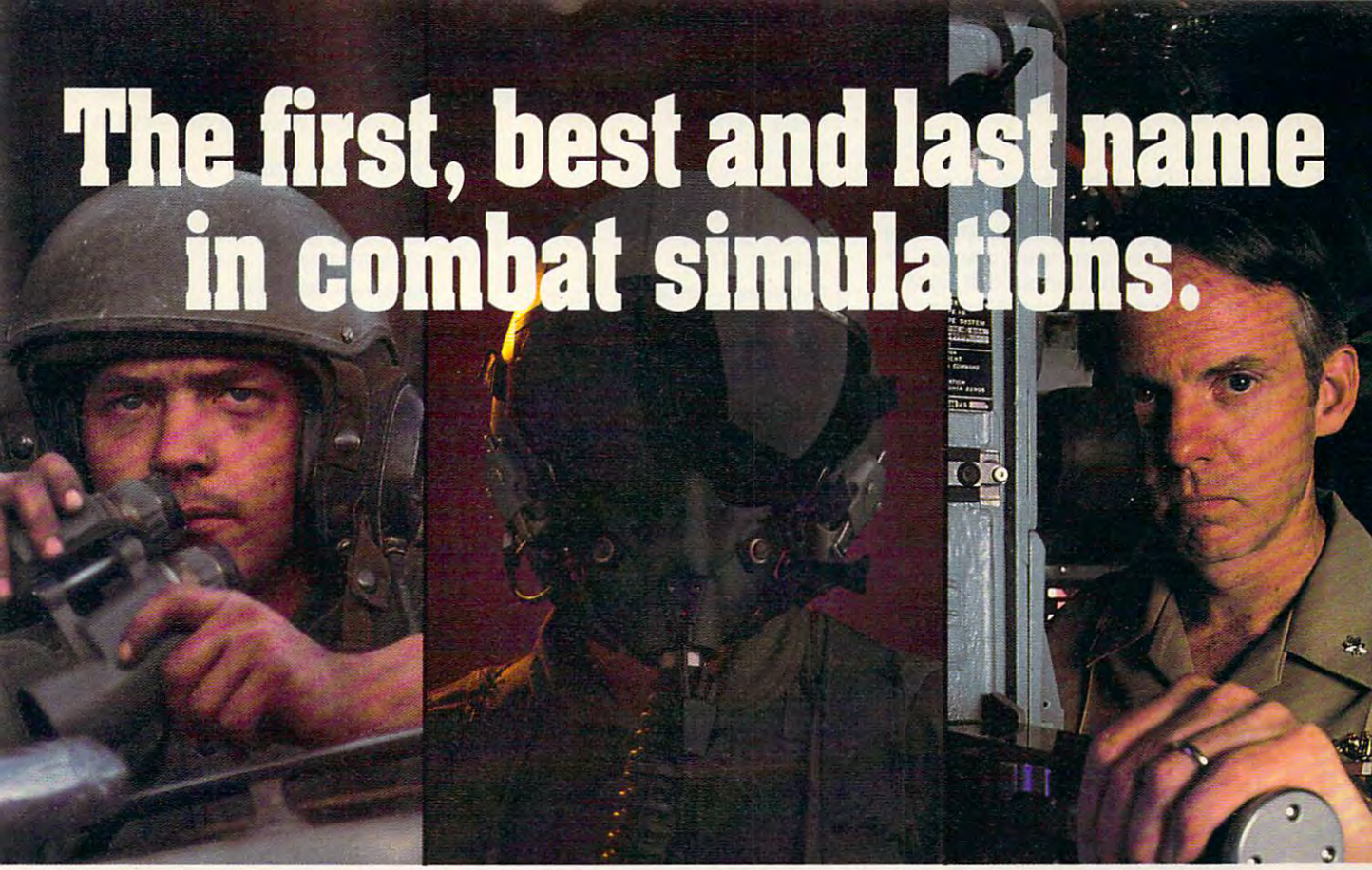
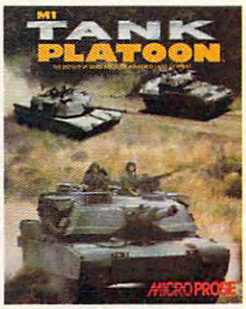
The first, best and last name in combat simulations.

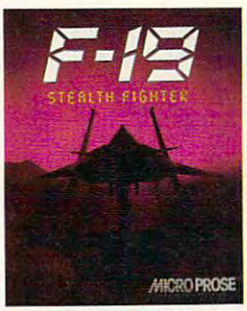




M1 TANK PLATOON: The only tank combat game that lets you perform real-life combat maneuvers! You'll lead not one, but four tanks and sixteen men — a whole tank platoon — into battle with the Soviets!

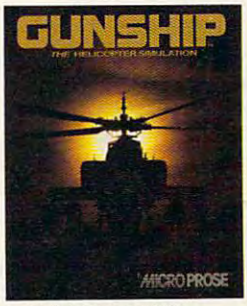
For combat simulation as real as it gets, no one beats MicroProse. We constantly blaze new trails with Super 3-D Graphics, heart-racing action and real-life situations that put you in the hot seat of actual combat. And you call the shots. For hours and hours of thrilling play, choose the name that's always one step ahead. MicroProse. The first, last and best name in combat simulations.

RED STORM RISING: War erupts between NATO and the Warsaw Pact! Trouble runs deep as you lead an American nuclear attack submarine into battle against a barrage of Soviet ships, subs and helicopters!



F-19 STEALTH FIGHTER: Pilot the Air Force's top secret, radar-elusive jet. Strike and roar away before they know you're there! This one revolutionized computer game technology with new perspectives and dazzling Super 3-D Graphics.

F-15 STRIKE EAGLE II: The action-packed sequel to the classic jet combat game that sold a million copies! Hundreds of real-world combat missions, incredible animation and new breakthroughs in game design promise hours and hours of thrill-packed play!



GUNSHIP: You control the world's most sophisticated attack helicopter with awesome firepower at your fingertips. Grace under pressure required to survive intense aerial combat!

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Best of the Rest

into my Amiga, but there's no way that *Dungeon Master* could be just a computer game. It's too realistic. Your party of adventurers must descend 14 levels into a subterranean hell filled with monsters and traps to recover the stolen Fire Staff. The graphics down there are fantastic, and the sound has to be heard to be believed. Make sure you have stereo speakers hooked up when you play—hearing which direction the monsters are approaching from can save your neck. There are numerous puzzles to solve (the demand for *Dungeon Master* maps and hint books has spawned a cottage industry), and you also have to find food and water. Don't forget that you need such sustenance in real life, too—soon after *Dungeon Master's* release, a number of Amigans were found draped over their computers, suffering from malnutrition and dehydration, mumbling "But I was almost down to Level 12. . . ."

DeluxePaint III. Just when we wondered how *DeluxePaint* could possibly get better, the program reappeared with a bang this year when ace programmer Dan Silva added animation capability. The new version is faster and supports the Extra Half-Brite mode, ColorFonts, and overscan drawing. Once you've created a static masterpiece, adding motion is a snap with the help of the new Move requester. Add that to the already impressive repertoire of features, including custom brush wraps, perspective, and palette remapping, and you have an immensely powerful art tool. This is the first Amiga animation program so easy to use that even *I* am able to create a decent sequence.

A-Max. This Macintosh emulator from ReadySoft really does turn your Amiga into a Macintosh (and in some ways it's better than the real thing). Because the Mac and the Amiga use the same 68000 microprocessor, *A-Max* doesn't suffer from slowdowns associated with software emulators such as the *Transformer* or *64 Emulator II*. Benchmarks show that, except for disk access, an *A-Max*–equipped Amiga runs slightly faster than a Macintosh SE. Plus, you can take advantage of the Amiga's higher screen resolution when running the emulator. Software compatibility is excellent. The only negative aspect is that the emulator doesn't support hard disks yet. However, there's a shareware driver for the IVS Trumpcard hard disk controller, and ReadySoft has promised hard disk support in a future *A-Max* software upgrade.

Where to Pick Up These Picks

A-Max—$199.95
ReadySoft
30 Wertheim Ct.
Unit 2
Richmond Hill, Ont.
Canada L4B 1B9
(416) 731-4175

DataStorm—$39.95
Visionary Design Technologies
45 Whitehorn Cres.
North York, Ont.
Canada M2J 3B1
(416) 497-0833

DeluxePaint III—$149.95
Populous—$49.95
Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404

Dungeon Master—$39.95
Software Heaven
6160 Lusk Blvd.
Suite C-206
San Diego, CA 92121
(619) 453-5711

Falcon—$49.95
Operation CounterStrike—$24.95
Spectrum HoloByte
2061 Challenger Dr.
Alameda, CA 94501
(415) 522-3584

Hole-in-One Miniature Golf—$39.95
DigiTek
8910 N. Dale Mabry
Executive Center
Suite 37
Tampa, FL 33614
(813) 933-8023

M2Sprint—$385.00
M2S
P.O. Box 550279
Dallas, TX 75335
(214) 340-5256

PageStream—$199.95
Soft-Logik Publishing
11131F S. Towne Sq.
St. Louis, MO 63123
(314) 894-8608

ProWrite 2.5—$124.95
New Horizons
206 Wild Basin Rd.
Suite 109
Austin, TX 78746
(512) 328-6650

Notable Nominations

New Horizons has done it again with the latest upgrade to ***ProWrite* 2.5,** a WYSIWYG word processor that lets you combine graphics and native printer fonts on the same page.

The programming category award has to go to M2S's ***M2Sprint*** Modula-2 compiler. This wonderful integrated development system includes tons of "easy" modules for novice programmers. It's the sure cure if you can't C.

SoftLogik's ***PageStream*** brings quality desktop publishing output to the dot-matrix masses. Although the first releases have been a bit buggy, you can't beat this package for desktop publishing on a nonlaser budget.

DigiTek's ***Hole-in-One Miniature Golf*** may not be a graphics dazzler, but it's a great game to play with family and friends.

Remember the days when people were impressed if the computer adaptation of a game looked as good as the arcade version? Visionary Design Technologies' ***DataStorm,*** a sort of Defender: 1990, puts the original *Defender* to shame.

APPLE II

GREGG KEIZER

***AppleWorks* 3.0.** Big and bold. That's the best way to describe *AppleWorks* 3.0, the best thing to hit the Apple II all year. As an integrated word processor, spreadsheet, and database, this brand-new version of the 1984 classic brings powerful applications to any 128K-equipped Apple II. Created by a programming team from Beagle Bros., this version includes enough new features to satisfy even the most accomplished *AppleWorks* hound. The word processor boasts a spelling checker and true tabs, the spreadsheet tallies additional functions, and the database fields multiple sorting levels. And with Claris's generous upgrade offer ($79), the new *AppleWorks* is a real steal.

Transwarp GS. This accelerator board from Applied Engineering was the Apple II hardware highlight of the year. Although critics pounce on the snaillike pace of Apple IIGS-specific software, the fault is almost always hardware-related. Stick a Transwarp GS board into one of your GS's slots and your machine suddenly takes on a new (and more pleasing) personality. *AppleWorks GS* quickens enough to use comfortably and *DeluxePaint II* moves brushes effortlessly. The 7-MHz Transwarp GS makes the IIGS

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Replay combat action sequences from any angle, even from the nose of a bomb!

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Want to show your friends how you erased that *Flying Pencil* with fancy deflection shooting? *Their Finest Hour* lets you save your proudest combat performances to disk. And relive them in real time, fast forward, or frame by frame.

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Take on the Luftwaffe in a tough little RAF Hurricane or fabled Spitfire. Or test your skills at the controls of the Spitfire's nemesis, the formidable Messerschmitt 109. Pulverize ground installations from your Messerschmitt 110 fighter/bomber or your screaming Stuka. Or fly as pilot, bombardier or gunner in a Junkers 88, Dornier Flying Pencil, or Heinkel Spade.

Your success in each mission impacts the next one: knock out a radar installation today, and you'll breathe easier tomorrow. Who knows—you might even change history. And if you don't like the odds, *Their Finest Hour* lets you change sides.

LUCASFILM™ GAMES

IBM screens shown. Available for IBM (includes AdLib™ sound card support), Amiga, and Atari ST.

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Best of the Rest

the computer it should have been from the beginning.

Arkanoid II. Fast action has never been one of the IIGS's strongest suits, but Taito's *Arkanoid II: Revenge of DoH* is a stellar sequel to a proven arcade performer. Essentially a hyperactive variation on *Breakout, Revenge of DoH* includes another 33 screens of brick patterns that you clear by bouncing balls off walls, squirming aliens, and bricks that may *never* disappear. Best of all, though, is the package's Arkanoid Construction Set. It's relatively simple to change the existing screens or make up entirely new ones to test your mouse skills. *Revenge of DoH* may be a repeat, but with its construction set, you might never see the same screen twice. And it's still the best Apple IIGS arcade out there.

System 5.0. Faster performance and more developer tools are the hallmarks of 5.0. The first *real* operating system for the Apple IIGS, this system is a Mac-like OS that should make a big difference in the year(s) to come. Although it had some bugs in the beginning (what doesn't?), Apple quickly started stamping them out. And professional programmers are flocking to the 5.0 standard for power software. Is this a vision of things to come? Will the Apple IIGS and Macintosh computers meet in a mutation known only to those in Cupertino? Anything's possible.

The New Talking Stickybear Alphabet. Like most of the best Apple software, *The New Stickybear Talking Alphabet* requires a IIGS. As befits its audience, the program is simple to use and as colorful as all get-out. It's also equipped with human-quality speech. Pressing the right key animates the super-hi-res graphic (two different pictures for each letter) and starts the IIGS saying the letter and word. Three activities keep the kids coming back for more. *The New Stickybear Talking Alphabet* puts the capabilities of the powerhouse IIGS to work for kids and parents alike.

Where to Pick Up These Picks

Apple IIGS—$1,149.00
System 5.0—$49.00
Apple Computer
20525 Mariani Ave.
Cupertino, CA 95014
(408) 996-1010

AppleWorks 3.0—$249.00
Claris
5201 Patrick Henry Dr.
Box 58168
Santa Clara, CA 95052
(408) 987-7000

Arkanoid II: Revenge of DoH—$34.95
Taito
267 W. Esplanade
North Vancouver, B.C.
Canada V7M 1A5
(604) 984-3344

DB Master Professional—$295.00
Stone Edge Technologies
P.O. Box 3200
Maple Glen, PA 19002
(215) 641-1825

Flodd, the Bad Guy—$44.95
Jack and the Beanstalk—$44.95
Tom Snyder Productions
90 Sherman St.
Cambridge, MA 02140
(617) 876-4433

Jigsaw—$39.95
Brittanica Software
345 Fourth St.
San Francisco, CA 94107
(415) 546-1866

The New Talking Stickybear Alphabet—$49.95
Optimum Resource
10 Station Pl.
Norfolk, CT 06058
(203) 592-5553

Slide-On—$9.95
Night Owl Productions
5734 Lamar Ave.
Mission, KS 66202
(913) 362-9890

Transwarp GS—$399.00
Applied Engineering
P.O. Box 5100
Carrollton, TX 75011
(214) 241-6060

Notable Nominations

The mid-August 1989 IIGS. Different? Not really. It just has the memory the computer should have had from the start—1.125 megabytes of RAM. Too bad it had to be so long in coming.

Brittanica Software's ***Jigsaw*** scrambles Apple IIGS graphics for you to reassemble.

When your IIGS's battery goes dead, don't despair. Put an inexpensive replacement battery on the motherboard yourself with the **Slide-On**.

Database users rejoiced with the release of ***DB Master Professional,*** a relational database for the Apple II family.

Put your kid on your lap and boot up ***Jack and the Beanstalk*** or ***Flodd, the Bad Guy,*** computerized stories from Tom Snyder Productions' Reading Magic series.

COMMODORE 64/128

NEIL RANDALL

Word Writer IV. The latest incarnation of Timeworks' well-established Word Writer series is full-featured, attractive, and fairly easy to use. Sacrificing a WYSIWYG display in favor of greater speed, *Word Writer IV* offers eight fonts, ranging in size from 9 points to 72 points. A macro and some bookmarks automate your work. Add an 85,000-word spelling checker, a 60,000-word thesaurus, and a simplified outliner, and you can get down to a good writing session.

Curse of the Azure Bonds. With incredible success, SSI's new Advanced Dungeons and Dragons series tackles the challenge to squeeze a full-blooded fantasy role-playing game into the Commodore 64's limited memory. *Pool of Radiance,* first in the series, was big, bold, and—on the Commodore 64—almost unplayable. *Curse of the Azure Bonds* streamlines the system even as it adds strong new features. The result is a playable adventure with fast disk access, no mean feat on our favorite machine.

GEOS 128 2.0. With the Commodore 128's 80-column display and fast disk access, the upgraded GEOS shines. Sporting a graphical interface, GEOS lets you forget the unwieldy commands of the Commodore 64 BASIC, and it offers desk accessories such as a calculator, an alarm clock, and a notepad. Add full-featured versions of *geoWrite* and *geoPaint,* and you have an impressive collection. Among the new additions are *geoSpell, geoLaser* (a laser-printer driver), and full support for the 1571 and 1581 disk drives. GEOS 128 is now a true alternative to other stand-alone programs.

Neuromancer. Based on William Gibson's groundbreaking cyberpunk novel, Interplay's unusual game emphasizes the seedy, the high-tech, and the downright disorienting. Given the unrelenting smoothness of the novel, such an adaptation is a major

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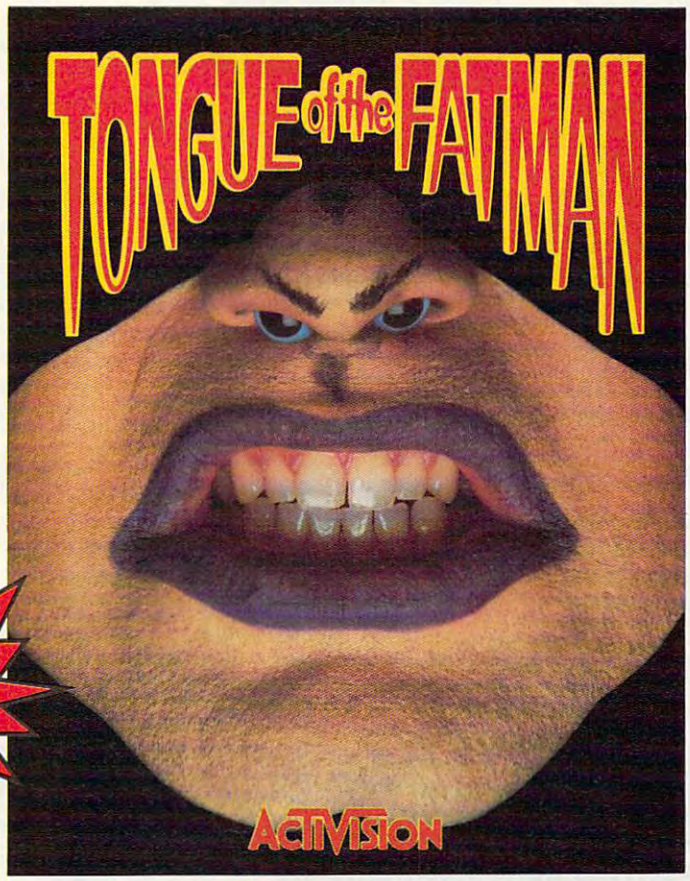
Welcome to the Fight Palace.



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Two creatures in a pit, strange moves, magical weapons, wild betting and your host, Mondu the Fat. Pick your lifeform, load up on bio-weapons, then punish or perish in the most outrageous game ever created—*Tongue of the Fatman.*

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Control and combat a variety of aliens, each with different moves and special animations. Ten beings to master.

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Best of the Rest

achievement. You learn to ride data links into high-security areas. If you're good, you'll not only become a successful "cowboy," you'll also find a way to save yourself.

Storm Across Europe. Last year marked the 50th anniversary of the start of World War II, and SSI was the only computer-game company to mark the event properly. This game attempts nothing less than a simulation of the entire six years of the war, on a glorious and grand strategic level. Best of all, the game has a three-player mode. You and two friends, in a single evening, can try to change the course of the largest war in history.

Notable Nominations

With two separate days of Gettysburg and four other well-chosen battles, ***Decisive Battles of the American Civil War*** **(Volume 2)** represents war gaming at its finest.

Until now, Commodore 128 owners have waited in vain for 128-specific software. ***Spectrum 128,*** a paint program, takes full advantage of the machine.

Might and Magic II, a fantasy role-playing game, gives Bard's Tale and Wizardry a run for their money.

Arkanoid was so popular, it's no wonder Taito released a new version called ***Arkanoid II.*** *Breakout* was never like this.

Strong graphics and an interesting theme make ***Destroyer Escort*** a superb blend of action and strategy. ⊡

Where to Pick Up These Picks

Arkanoid II—$29.95
Taito
267 W. Esplanade
North Vancouver, B.C.
Canada V7M 1A5
(604) 984-3344

Curse of the Azure Bonds—$39.95
Storm Across Europe—$59.95
SSI
Distributed by Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
(415) 571-7171

Decisive Battles of the Civil War (Volume 2)—$39.95
Strategic Studies Group
1747 Orleans Ct.
Walnut Creek, CA 94598
(415) 932-3019

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

GEOS 128 2.0—$69.95
Berkeley Softworks
2150 Shattuck Ave.
Berkeley, CA 94704
(415) 644-0883

Might and Magic II—$39.95
New World Computing
14922 Calvert St.
Van Nuys, CA 91411
(818) 785-0401

Neuromancer—$39.95
Interplay
1575 Corporate Dr.
Costa Mesa, CA 92626
(714) 545-9001

Spectrum 128—$39.95
Free Spirit Software
P.O. Box 128
58 Noble St.
Kutztown, PA 19530
(215) 683-5609

WordWriter IV—$49.95
Timeworks
444 N. Lake Cook Rd.
Deerfield, IL 60015
(312) 948-9200

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C. Itoh Prowriter Jr.	7.00	9.00	–
Citizen 120D/180D	5.00	6.00	7.95
Commodore MPS 802/1526	6.25	7.25	–
- MPS 803	4.95	5.95	7.00
- MPS 1000	3.95	4.95	6.75
- MPS 1200/1250	5.00	6.00	7.95
Epson MX80/LX800	3.75	4.25	6.75
IBM Proprinter	5.75	8.00	12.00
Okidata 82/92	1.75	2.25	4.50
Okidata 182/192	6.50	7.50	6.00
Panasonic K-XP 1080	6.75	7.75	–
Seikosha SP 800/1000	5.25	6.50	7.95
Star NX10/NL10	5.00	6.00	7.95
Star NX1000	4.50	5.50	6.75
Star NX1000 – 4-Color	–	8.75	–

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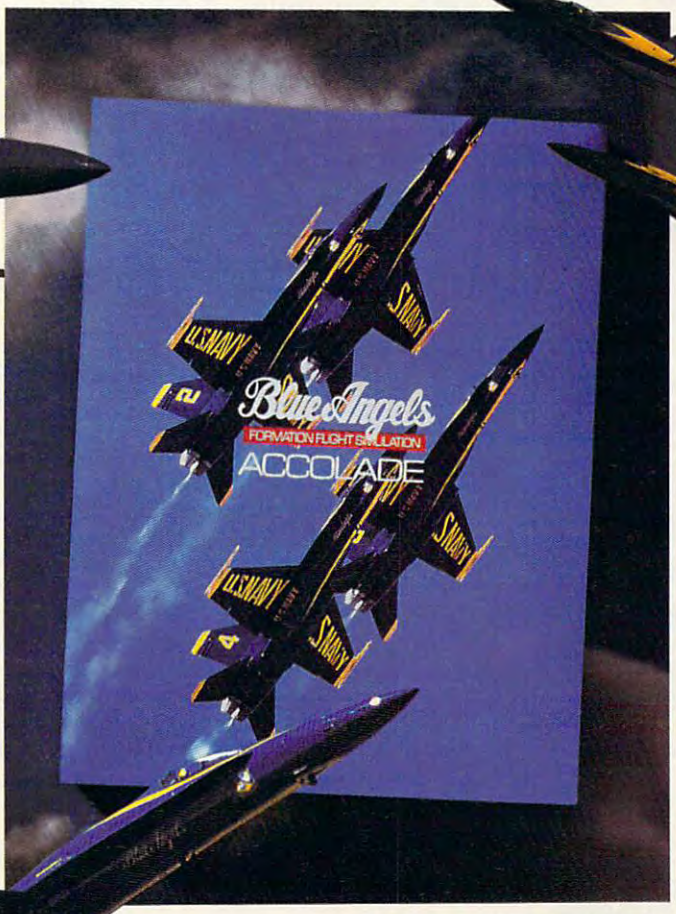

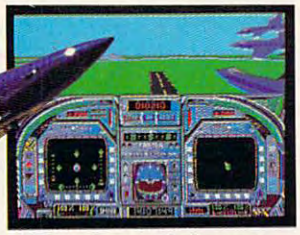

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RESOURCES

CHOOSE YOUR SOFTWARE CAREFULLY

REVIEWS AND BOOKS

Read as many reviews as you can get your hands on. Reviews are subjective, and they reflect the audience they're written for. If you're looking for home computing software, don't read reviews in a magazine for high-powered business users; check reviews in a home computer magazine.

Reviews are usually published anywhere from one to six months after the release of a title. If it's an older package that you're considering, you should look at old magazine issues in a local library.

Make sure that you pick up the December and January issues of your favorite magazines and save them. Almost every consumer-oriented computer periodical will publish its annual picks and recommendations. You can refer to these issues through the next year, even longer for some products.

There are a number of books that will prove valuable when you're searching the software ranks. We've included a list along with the publisher's name, address, and phone number.

Consumer Product Guide—$26.95
Simon & Schuster
Gulf + Western Building
One Gulf + Western Plaza
New York, NY 10023
(800) 624-0023

The Computer Blue Book—$15.95
National Association of Computer Dealers
14925 Memorial Dr.
Building A
Houston, TX 77079
(800) 223-5264

Online Communications Software—$24.95
McGraw Hill
Princeton Rd.
Hightstown, NJ 08520
(800) 262-4729

The MENU Software Guide for IBM & Compatible Personal Computers—$29.95
MENU
P.O. Box Menu
Pittsburgh, PA 15241
(800) 843-6368

The Connection—free
7249 Whipple Ave. NW
North Canton, OH 44720
(800) 336-1166

Before You Go Looking

Know exactly what you want, and you'll find the best software for you. If you answer several questions in advance, chances are you'll match the best features with the best price.

Decide what you want the package to do; then list specific features that you'll need. Assess your equipment's limitations and assets—which features are necessary and which could be traded for other capabilities? Last, determine how much you're willing to spend.

With those preliminaries decided, and this resource page as your guide, you'll have a much better chance at getting the most from your software dollar.

STORE DEMOS

Most stores have trial copies of software, or the salespeople will take a package off of the shelf so that you can try it. If the sales staff isn't very accommodating, try another store.

Make sure that you try titles from different companies. Unless you already know what you want, you'll need to see a variety of products to make an adequate comparison.

Many retail stores, especially chains like Babbages, post listings of what is currently the best-selling software. (*COMPUTE!* publishes its own Hotware list, supplied by Egghead Discount Software, at the back of each issue.) While you're in one of these stores, be sure to check for the titles that you've been looking at. Popularity doesn't necessarily indicate the best product, however, so don't base your decision solely on these top-seller lists.

Find Out from the Source

Every software vendor will answer questions over the phone. Vendors won't be totally objective since they want you to buy their product, but the information will be accurate. If you don't know the name of the manufacturer, your local computer store will be able to help. A salesperson can tell you the names, addresses, and phone numbers of software publishers. *COMPUTE!* lists that information with its reviews.

Online Answers

Most online services have vendor-support areas. CompuServe (P.O. Box 20212, Columbus, Ohio 43220; 800-848-8199) and GEnie (401 North Washington Street, Rockville, Maryland 20850; 800-638-9636) are two examples. For specific publishers on CompuServe, try entering GO BORLAND, GO ASH-1 (Ashton-Tate), GO WPSG (WordPerfect), or GO WORDSTAR. These are just a few of the specific vendor SIGs. You can find smaller companies by entering GO PCVENA or GO PCVENB. It's simpler on GEnie (and less comprehensive): Just type PCSUPPORT and you'll see a menu of vendor-support areas.

User Groups

Often, user groups can answer your questions, too. Most meetings include demonstrations of newly released software. Whoever demonstrates the program can tell you how easy it is to use and can discuss its features.

User groups usually meet once a month. You can find out when and where they meet by calling a local computer retail store.

Some groups support local electronic bulletin boards and telephone information lines. Almost every group publishes a newsletter that will tell you about meetings and list contact numbers; sometimes the newsletters will even review new software. Local dealers may have the newsletters on hand. ⊡

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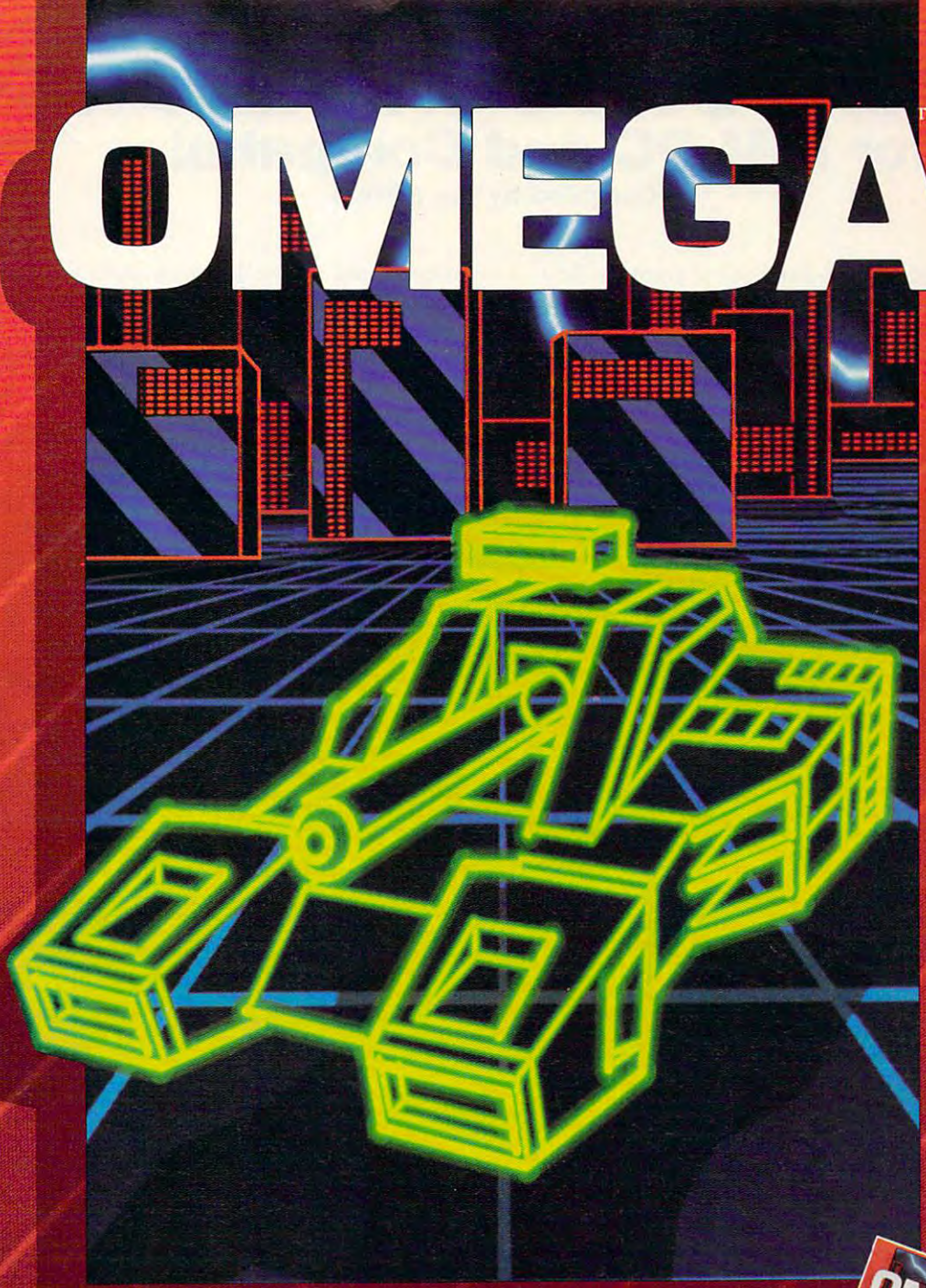

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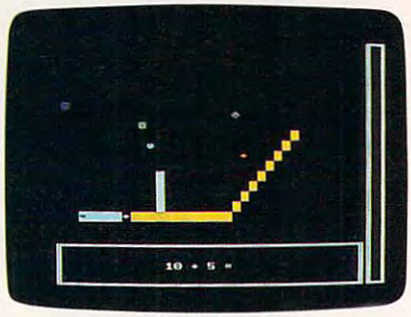

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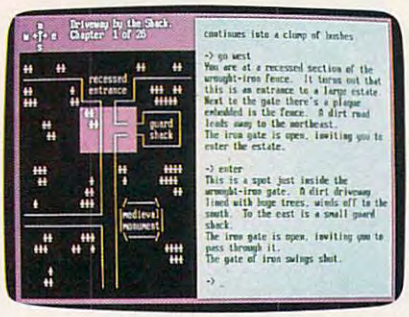
Test your mathematical skills with these four educational games: Math Catch, Math Run, Math Lander, and Math Shoot. Master all four levels in a game before advancing to the next game. Choose the addition, subtraction, multiplication, or division problems, or let the computer select for you. Game features include high-score save, custom key definitions, onscreen help, and difficulty-level settings. Requires 256K, DOS 2.1 or higher, and any monitor except Hercules.



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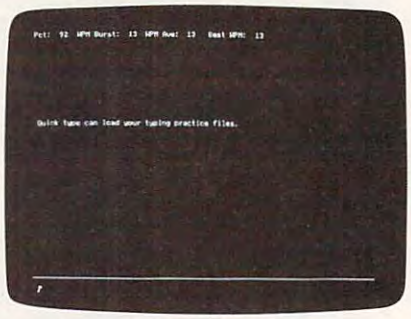
Search for clues in the text-based maps and diagrams in this tricky game of mystery. You'll get hours of entertainment—and anxiety—as you solve the countless puzzles and enigmas that reveal the secret of *Skullduggery*. Requires 256K and DOS 2.1 or higher.



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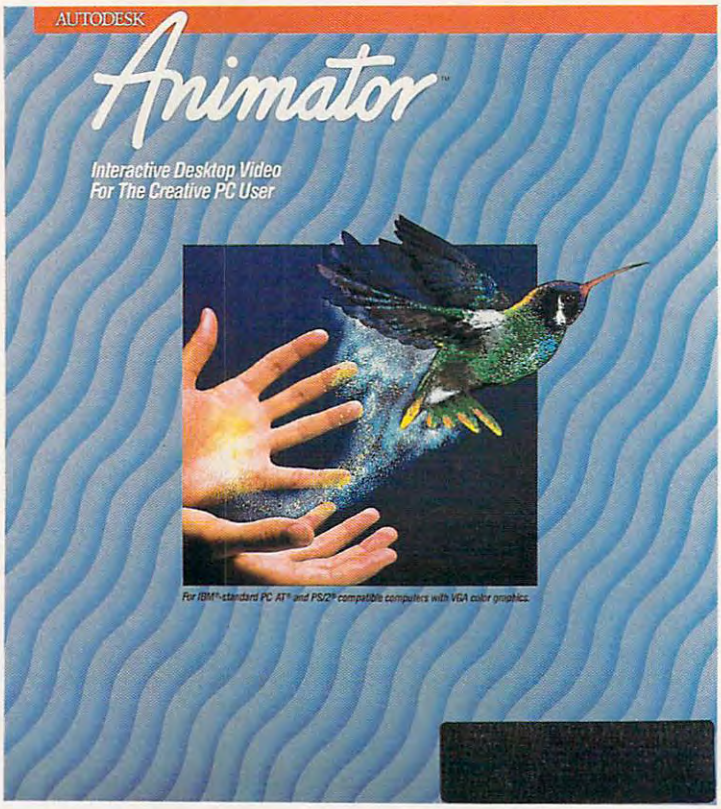

COMPUTE! CHOICE

LOADED WITH FEATURES, THIS PROGRAM OFFERS PC ANIMATION THAT'S WORTH BRAGGING ABOUT

STEVEN ANZOVIN

For years, PC users had to suffer in silence when tiresome Amiga and Macintosh owners boasted about the amazing animation and presentation capabilities of their machines. As every artist knew, PCs were great for spreadsheets and databases, but, without adding expensive custom graphics boards and software, MS-DOS just couldn't cut it in the animation arena. Even with the advent of the VGA display standard, you couldn't find PC animation software that matched what was out for the Amiga and the Macintosh. So, serious animators and desktop presenters shunned the PC for other platforms. A new program, *Autodesk Animator* from Autodesk, may change all that, luring the dedicated computer animator into the PC studio.

Autodesk Animator is a complex, professional-level program that includes full-color paint tools, image-processing effects, several types of animation, and a flexible text editor with video-style titling effects. The program runs on any IBM PS/2, AT, 386, or compatible with MCGA or VGA graphics and a hard disk (the program writes temporary files that can overwhelm a floppy's storage capacity). Currently the program works only in the 320 × 200 pixel, 256-color MCGA mode, which keeps animation files down to a manageable size. You'll also need a Microsoft-compatible pointing device for drawing and animation, though you can select most program options from the keyboard. Two thorough, well-written manuals and a demonstration videotape guide you through the labyrinth of program features.

You access *Autodesk Animator*'s cornucopia of features through a se-

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TIVITY

ries of panels. The Home panel, which appears whenever you open the program, contains a basic subset of painting and animation options: drawing and magnifying tools; a small color palette; buttons that control playback of animations; a selection of ink types, including glass and smoothing inks; and buttons to call up other panels. As with most graphics applications, you select options from drop-down menus, clicking on buttons (called *slots*), typing text into dialog boxes, and dragging things around the screen.

From the Drawing panel, you select any of the more than 20 drawing and painting tools, as well as color effects like drizzle (a dripping brush effect) and gel (translucent overlays). From the Ink Types panel, you choose painting/image-processing effects, such as embossing, smearing, softening colors, sparkles, tiling, and antialiasing (a technique that softens the jagged edges of images to make them appear smoother).

The Color Palette panel offers full control of all 256 onscreen colors in RGB (Red, Green, and Blue) and HLS (Hue, Luminance, and Saturation) scales, plus extensive color remapping and arranging tools. Using options in the Titling panel, you specify and edit color text in a full spectrum of fonts, styles, and inks. (One nice feature imports ASCII text files into the program and lets you edit them; this is a good tool for turning an outline created with a word processor into titles for a slide show.)

The videotape uses examples like this to guide you through *Animator*'s features.

The tools in these panels, with their context-sensitive menu options, make *Autodesk Animator* the most complete color-graphics program yet for the PC. The selection of special-effects inks and brush types alone is worth the program's price because the choices aren't available on any other microcomputer graphics program. If all you needed was a high-end paint program, *Autodesk Animator* would do the job, even though some artists might wish for *MacPaint*-style icons and a point-and-click interface. The 320 × 200 resolution might also be a point of complaint for artists wanting the increased detail of a higher resolution, especially for onscreen text.

Still, as wonderful as color paint may be, animation is where the action is, and this program can act. *Autodesk Animator* creates five types of animation: traditional cel-type, frame-by-frame animation; optical effects; polymorphic tweening; titling effects; and color cycling.

Cel animation, the kind that is traditionally used in cartoons, involves painting successive images on a series of frames and playing the frames back quickly enough to create the illusion of motion. This type of animation is easy to understand. If you've ever buzzed through an animation flip book, you know how cel animation works. But all that drawing and animating adds up to extensive manual effort. *Autodesk Animator*'s blue-framing feature thankfully reduces the work. This feature shows a temporary silhouette of preceding frames on each new frame, allowing you to line up a succession of pictures quickly and accurately.

Optical and polymorphic tweening animation take even more of the load off of you. With optical animation, you select an area of a picture and tell *Autodesk Animator* to move or rotate it along one of the screen's Cartesian axes—horizontally on the *x*-axis, vertically on the *y*-axis, or into

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and out of the screen on the *z*-axis—across a specified number of frames. Once you get the hang of navigating in illusory three-dimensional space with two-dimensional pictures, you can create spectacular spinning and tumbling effects. Titling animation works much the same way (you can spin and tumble text as easily as pictures) but adds slow and fast scrolling for subtitles and end-of-program credits.

Polymorphic tweening automatically transforms the shapes of special polygons available from the Draw panel. Say you want to transform a star polygon in one frame to a square polygon in the next. You draw the star on the first frame, copy it to the next, and drag the points of the star until it looks like a square. *Autodesk Animator* generates the in-between images of the shape change for a smooth, finished animation.

Color cycling is a simple form of animation in which a selected area cycles through a range of colors at a set speed. This feature creates glowing and flashing effects.

All the varieties of animation that I tested played with impressive smoothness, although I did notice some staticlike artifacts in the upper part of the screen during animation playback. I'm not sure whether these were a product of the program or of my display hardware. Otherwise, *Autodesk Animator* is quite robust.

You can play animation files, called *flics* in *Autodesk Animator* lingo, backward and forward or one frame at a time at any speed up to 30 frames per second. You can also edit these files by splicing, dicing, cutting, pasting, merging, superimposing, and underlaying. You edit the flics with tools from the Frames and Time Select panels. Through the Player utility included in the package, you can run flics outside of *Autodesk Animator.* You can, for example, set up an animated presentation on a single disk and play it automatically when it's loaded into any compatible computer. You can also set up a presentation to respond to mouse or keyboard commands as you narrate the show. Using *Autodesk Animator's* scripting tools, you can chain together a series of animations and play them in sequence. In essence, the length of an *Autodesk Animator* presentation is limited only by the capacity of your hard disk. Chaining animations is helpful when you transfer animation to video, eliminating much of the splicing that would otherwise have to be done in video postproduction.

What can you do with *Autodesk Animator?* Basically, the program is best suited as an engine for desktop presentations and desktop videos. The typical animated bar graph or pie chart, the meat-and-potatoes of desktop presentations, is easy to create with *Autodesk Animator's* polymorphic graphics. Just create a flic, paint a background, create the foreground polygons—the bars of a bar chart, for example—and move them over the background across a series of frames.

Teachers can apply the same principles to school and training presentations. Imagine demonstrating the difference between the Ptolemaic and Copernican models of the solar system with a simple animation. Or try showing the exact assembly method for your company's new widget with a moving presentation.

A skilled animator can draw

***Animator* tweens the frames between your first image and your last one.**

Disney-style (if not Disney-quality) cel animations for commercials, presentations, and art animations in record time using the blue-framing feature. *Autodesk Animator's* titling and optical effects offer some of the same features that video-graphics professionals play with on their big guns, the ADOs and the Quantels; the program is perfect for creating the type of flying text and logos that are so popular on broadcast television. And, because *Autodesk Animator* imports picture files from *AutoCAD* and other Autodesk CAD products, you can use it to create technical presentations, such as a fly-through of a three-dimensional architectural model created with *AutoCAD* and *AutoShade.*

Animation is a highly specialized application, and most computer animators choose a particular computer platform based on whether it offers a program that creates the effects they need. Many artists and designers run their business on a PC but buy an Amiga 500 or a Macintosh II just to create animations. So *Autodesk Animator's* software rivals are not in the PC world but in the Amiga and Macintosh worlds.

Holding its own against such competitors as *DeluxePaint III* for the Amiga and *Macromind Director* for the Macintosh, *Autodesk Animator* stands up quite respectably. It offers animation capabilities that are more flexible than those of *DeluxePaint III.* Polymorphic tweening, blue-frame silhouetting, and color and ink effects are impossible to create with the Amiga's venerable graphics and animation standby. *Autodesk Animator* lacks *DeluxePaint III's* custom-brush and perspective tools, however, and its tool set is not as easy to use. You could get the best of both worlds if you created graphics in the PC version of *DeluxePaint II* and imported them to *Autodesk Animator* for image tweaking and animation. Under the Pic and Flic menus, you'll find options for importing still-image files from other PC graphics-file formats. You can also import graphics files from the Mac, the Amiga, and the Atari ST, plus animation files from the Amiga and the ST.

As for *Macromind Director, Autodesk Animator* offers similar color paint and animation features—albeit with a less polished interface, no integration of digitized sounds with animation, and a lower screen resolution (*Macromind Director* uses the standard Mac II screen format of 640 × 480 pixels and 256 colors). Still, just about any presentation or animation effect you can create with *Macromind Director* can be duplicated with *Autodesk Animator,* and this PC program can do some things, such as image processing, that *Macromind Director* can't handle. Both programs have a sharp learning curve and take some study to master, but you can expect this with any full-featured animation program. Given that *Macromind Director* lists for more than twice the price of *Autodesk Animator* and has to run on a $7,000-plus color Macintosh, the Autodesk program is a steal.

In short, with *Autodesk Animator,* cartoon jockeys can boast boldly about animations created on a PC. *Autodesk Animator* is one of the programs that will help usher in a second golden age of animation.

Autodesk Animator

IBM PCs and compatibles with 640K, a hard disk, VGA/MCGA, and a Microsoft-compatible pointing device—$295

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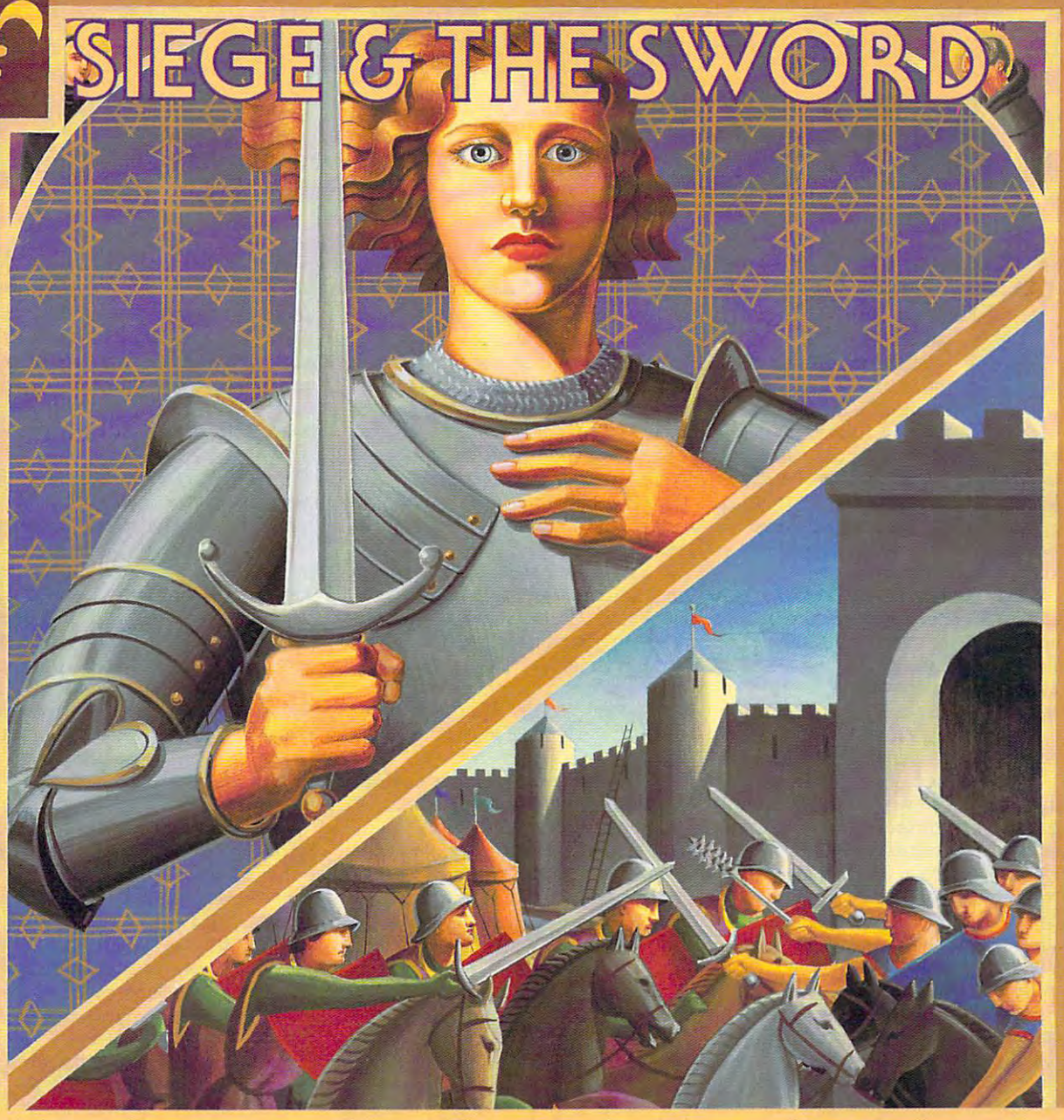

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IMPACT

DAVID D. THORNBURG

Jane Miller, a semiretired school teacher in northern California, is a grandmother whose life has changed in the past six months. As a computer resource teacher, Jane learned the ins and outs of educational computing at a point in her career when many teachers are looking forward to retirement.

Not content to leave computers at school, she brought the revolution home in a box when, to her surprise, she won a complete IBM PS/2 Model 25 system in a drawing. Jane also received a modem and a free subscription to Prodigy, the dial-up information service created by IBM and Sears.

As a grandmother, Jane is a member of a growing segment of our computer-using society, so I was interested in her perspectives on Prodigy. Her first response was that working with Prodigy is like creating a magazine. You can explore any topic from stocks to recipes and examine specific subjects in depth. All this with just the press of a key.

While browsing one day, she came across an online version of the *Los Angeles Times Cookbook* and has since found some good recipes that her family enjoys. Through a connection to the Grocery Express, she has been able to create a master shopping list from which she can then order food. Orders placed by noon are delivered that day. While she isn't able to order frozen foods through this service, she thinks it will be a boon to those who are shut in and unable to make trips to the market.

Jane's grandchildren, Brian (8) and Jill (4), have found their own worlds to explore through her computer and Prodigy. Among their favorite computer pastimes are the Storyteller's Corner, where each day brings a new chapter from a story. Previous chapters can be seen as well for those who missed a day.

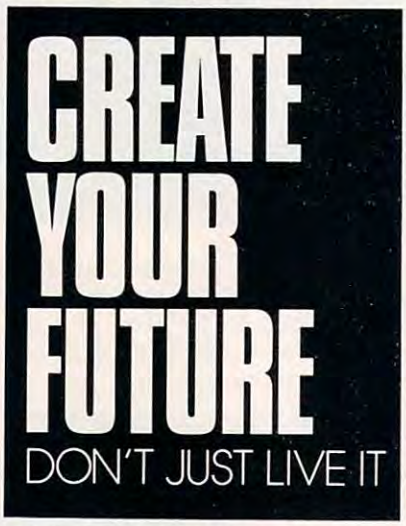
One of the more interesting services is called Punch Line. A cartoon is shown on the screen and users are invited to submit their own punch lines. Winning entries are made available in a file, along with the names of the contributors. Another interactive exercise allows children to write their own stories and have them judged. For a service that costs only a few dollars per month (plus local phone charges), Prodigy has a lot of specialized capabilities.

Jane hasn't had the time to chat with other users through the electronic mail service, but she did address a software question to Brøderbund through the program and received a response in one day.

As she puts it, "With services like this, you never have to be bored; there's always something to do."

Her only complaint was that she gets tired sitting in front of the screen for long periods of time.

Jane's enthusiastic response to computer-based information services is quite heartening. Services of this



type have been available since the late 1970s, and many futurists have had to eat their words as they predicted the revolution that such services would bring.

In their landmark book on the subject, *The Network Nation*, authors Starr Hiltz and Murray Turoff predicted that the use of such services would be commonplace by the mid-1980s. This prediction (made in 1978) has not come true. Even with government support, countries like Canada and England have failed to bring the power of this technology to the citizenry in other than small ways.

While the technologists were debating the relative merits of Telidon, Viewdata, and other formats, the public was unconvinced. Shortly after the introduction of the Color Computer, Tandy marketed a nifty low-cost telecommunications terminal in the same compact box. I am one of maybe ten people who bought one.

The capabilities of the information services have always been impressive, even in the late 1970s, yet the use of such services has always been limited among personal computer users.

The argument used to be that of "tying up the telephone," yet the rapid rise of home-based fax machines seems to weaken that one. Another argument relates to Jane's fatigue after sitting in front of the CRT for a long time. However, many avid home computer users gladly spend hours mastering a new adventure game, so this can't be the critical factor.

Expense may be a factor, although Prodigy seems to have addressed that issue by offering its service for a low monthly fee and then selling advertising space on the network.

Perhaps the hesitancy has nothing to do with any of these factors. Perhaps the limitations are not technological or financial. The only limitation to the use of these services is that provided by the mind of the user. Perhaps, just perhaps, the reluctance of the vast majority of home computer owners to take advantage of such services is that they can't think of any interesting ways to use the system. If this is the case, we need to work on increasing our collective imagination. We need to think about what can be, not about what has been. We, like Jane Miller, need to create our future, not just live it. ⊡

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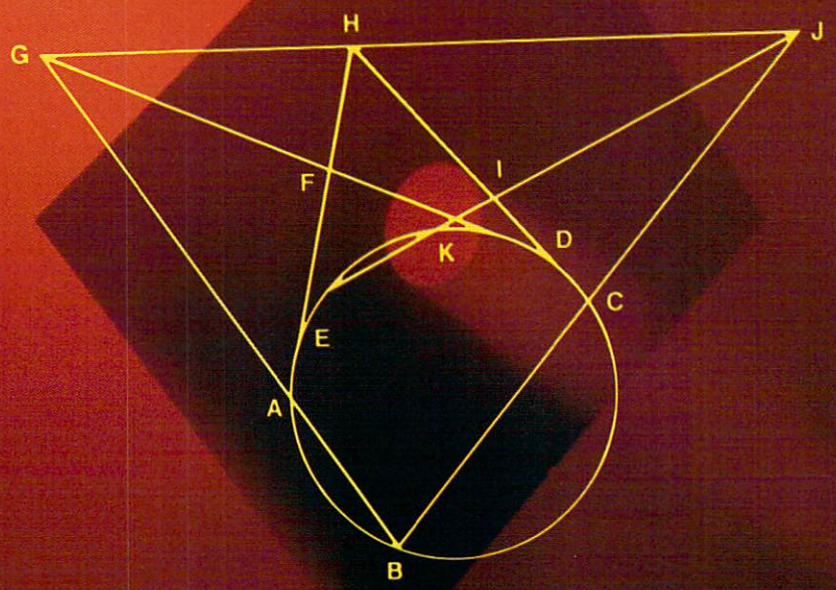

DISK ANATOMY

JACK NIMERSHEIM

YOU USE FLOPPY DISKS EVERY DAY—BUT HOW MUCH DO YOU REALLY KNOW ABOUT THEM?

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Despite all the gee-whiz, high-tech storage media floating around out there in the PC marketplace—330-megabyte hard disks, streaming tape drives, WORM drives, CD-ROM drives—it will be a long time before we abandon the good old dependable floppy disk as the medium of choice for many day-to-day operations such as software distribution and file backup. But even though floppies are as common as white bread, how much do you really know about them? Novice computer users can always benefit from a basic understanding of how their equipment works—even the floppy disks they buy at the drugstore. And if you're an experienced computer user who has been taking the tried-and-true floppy disk for granted, here's a chance to get reacquainted.

Floppy Autopsy

Floppy disks come in two basic sizes: 5¼- and 3½-inch. (Recently, Zenith introduced a 2-inch floppy disk for its newest laptop. It's still too early to predict, however, how much of an impact this new size will have on personal computing, or even what success that particular laptop can expect.) You might think that only the 5¼-inch model warrants being called a floppy disk, based on its pliable construction. But the basic design of a floppy disk is fairly straightforward, regardless of its size. Inside both the soft, protective shell of a 5¼-inch disk and the solid plastic case of the 3½-inch version rests a circular piece of oxide-coated, flexible mylar or polyvinyl chloride (PVC)—the true source of that endearing sobriquet: *floppy disk*.

The mylar or PVC disk (called a *cookie* within the disk industry) lies between two layers of nonwoven cloth or synthetic fabric, called a *liner*. This liner serves a dual purpose. First, it reduces the friction of the cookie spinning against the disk's outer shell. The liner also sweeps away dust and other particles as the cookie rotates, thus preventing these minuscule objects from contaminating the disk. Once this "cookie sandwich" is prepared, it's enclosed within an additional protective covering, the outer shell that you associate with the term *floppy disk*.

A 3½-inch disk (also called a *microfloppy*) has an outer shell of molded plastic, a much more rigid material than the flexible sheet of plastic used to manufacture the protective sleeve on 5¼-inch disks. The microfloppy disk also sports a special metal shutter that covers its head aperture—the opening through which a disk drive's read/write heads access the disk's recording surface—when the disk isn't in use. This shutter slides back each time you insert the microfloppy disk into a drive to allow read/write operations. Because of the rigid shell and the special shutter device, a 3½-inch disk is more durable than its 5¼-inch counterpart. I've sometimes heard 3½-inch disks called *shirt-pocket* floppies, since they can be carried easily in a shirt pocket without much risk of damage.

Both sizes of floppy disks include some form of write-protect device. On a 5¼-inch disk, it's a small notch cut into one corner of the disk sleeve. Covering this notch with a piece of tape (or the special tab included with most 5¼-inch disks) prevents data from being written to a disk. Microfloppies, on the other hand, use a plastic slide tab built right into the disk's outer shell for write protection. Slide this tab back so you can see through the disk's write-protect hole, and you can't write to that disk. These two opposite techniques can lead to confusion for new users, but the simple rule is this: Cover the notch of a 5¼-inch disk to protect its data; uncover the write-protect hole on a 3½-inch disk to do the same thing.

Floppy disks store data by recording magnetic fluxes on an oxide coating that's applied to the mylar or PVC cookie. One type of flux corresponds to a binary 0, while a different magnetic flux is associated with a binary 1. The pattern of these fluxes are then correlated to specific data values in much the same way that the binary notation 00000101 represents a numeric value of 5. Three factors come into play when determining how much data (that is, how many magnetic fluxes) a specific floppy disk can store: number of sides, density, and formatting.

SINGLE- AND DOUBLE-SIDED DISKS ARE MADE OF IDENTICAL MATERIALS.

Taking Sides

A floppy disk can be single-sided or double-sided, meaning data can be stored on either one or both surfaces of its cookie. Both single-sided and double-sided disks are made using identical methods and materials and may even come from the same production lot. Whether a disk is certified as being single- or double-sided, however, depends entirely on how well it passes a series of quality-control tests. If both sides of a disk pass these tests, the manufacturer certifies the disk for use in a double-sided disk drive. Should only one side of the cookie pass muster, the manufacturer

Photo by Mark Wagoner

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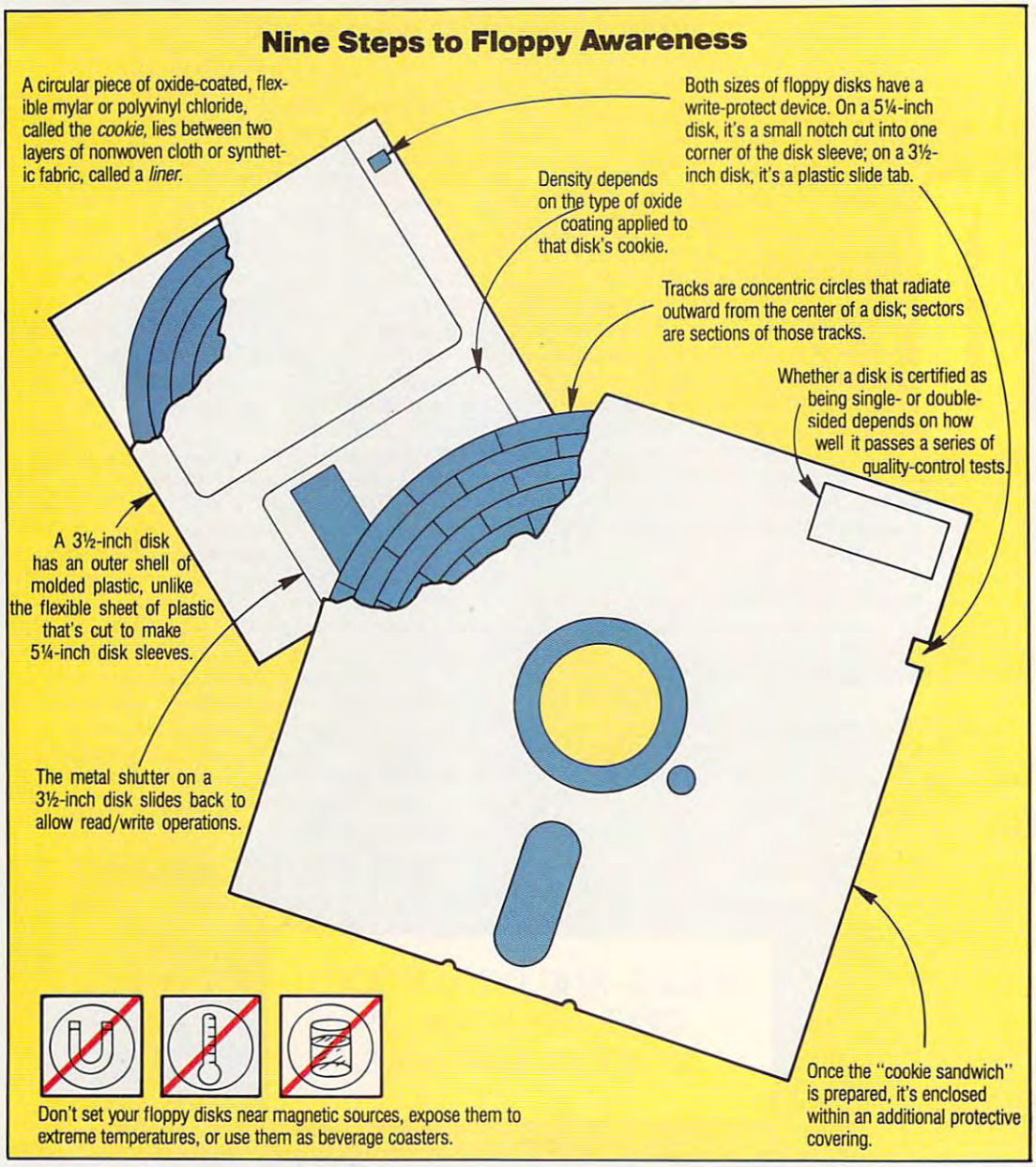

is expected to sell that disk for use with single-sided disk drives.

Double-sided disks work perfectly well in a single-sided disk drive. I don't recommend, however, that you use single-sided disks for double-sided operations. Attempting to store data on an unreliable disk surface can result in the loss of that data—always, in accordance with Murphy's Law, when you least expect or can afford it.

Density

Density refers to how tightly magnetic signals can be reliably packed onto a disk. And this, in turn, depends on the type of oxide coating applied to that disk's cookie. Rather than having a standard oxide coating, high-density disks use special alloys that allow more information to be packed onto a smaller space.

There are three types of density ratings for floppy disks: single density, double density, and high density. Single-density disks are a leftover from the early days of PCs, when floppy drive technology was relatively primitive. Such disks have become pretty much obsolete in recent years. You generally need only concern yourself with double-density or high-density (sometimes called *quad-density*) data storage. In the 5¼-inch format, you need a high-density disk to take advantage of the 1.2-megabyte drives installed on many AT-class machines. Similarly, high-density disks allow you to store up to 1.44 megabytes of data on a 3½-inch floppy disk (provided you have a high-density drive in your computer), as compared with 720K of storage on a 3½-inch double-density disk.

Density ratings on disks are backward-compatible. That is, a high-density floppy disk can be used in a double-density disk drive. You should refrain, however, from formatting a double-density disk for high-density operations. It might do in a pinch, but you can never be sure that your data won't be lost or damaged. ▷

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Formatting

Before you can use a floppy disk to store data, you have to format the disk. Formatting a disk is comparable to laying the foundation of a building. How you lay a foundation greatly influences a building's final appearance. Similarly, how you format a disk determines its ultimate data-storage capabilities. (Some systems, like the Macintosh, refer to formatting as *initializing*.)

Prior to being formatted for the first time, a floppy disk resembles a blank sheet of paper in that its oxide or alloy coating is distributed evenly across the cookie's entire surface. During formatting, two critical items are magnetically encoded into this featureless surface: tracks and sectors.

Tracks are concentric circles that radiate outward from the center of a disk, much like the individual lanes delineated on a running track. Tracks allow a disk drive's read/write heads to position themselves properly as they move back and forth across the recording surface of a floppy disk, searching for the specific data you have requested. How many tracks a floppy disk contains after formatting depends on your disk operating system and the type of format you specify. On a high-density 5¼-inch disk formatted to 1.2 megabytes with MS-DOS 3.0 or later, for example, 80 tracks are encoded onto the disk.

Tracks are broken down into sectors. Think of a sector identifier as resembling the wooden barriers placed across the lanes of a running track during the high-hurdle event. Individual sectors are analogous to that portion of the lane situated between each of the barriers. And, the number of sectors dividing a track, much like the number of tracks created on a disk, depends on your version of DOS and the type of format you specify.

Once you have created tracks and sectors on a disk, that disk is ready for data storage. But how does your disk drive know the specific track and sector on which it should save a particular piece of information? And how does it know how to retrieve that data once it's stored? To coordinate these activities, a disk requires a road map.

The File Allocation Table

In addition to tracks and sectors, a third critical item is encoded on a floppy disk during formatting: the file allocation table (FAT). The FAT stores important information about each disk sector.

Most important, the FAT is used to record which areas of a disk are already in use and which ones are still available for data storage. Each time you create or erase a file, a disk's FAT is updated to reflect this activity. The FAT also keeps track of the specific sectors allocated to each file a disk contains. For example, the FAT for a floppy disk containing your word processing program might specify that the beginning of its built-in dictionary is located in sector 3 of track 10. Each time you go to look up the spelling of a word, the program looks to the FAT—its road map—for directions on how to get to the dictionary.

Floppy Care and Feeding

By now you've probably picked up some useful information about how floppy disks work. But you need to know how to keep your floppies working or you could be in for a nasty surprise. Though not as fragile as some people believe, floppy disks can fall victim to a variety of potential hazards.

First and foremost, there's magnetism. Since data on a disk is stored magnetically, the presence of a magnetic field can send that data off to never-never land. I once had a client who encountered problems retrieving an important data file from one of his floppy disks. I traced his difficulties to the fact that he kept track of his disk by attaching it to a metal filing cabinet next to his desk with a magnet. Other, less obvious sources of magnetic fields include ringing telephone bells (real bells, not electronic tones), television picture tubes, and even small motors such as those used in electric pencil sharpeners.

Floppy disks, especially the 5¼-inch variety, are also susceptible to extreme temperatures. As a rule, you should store your disks where the temperature is fairly constant, ideally between 50 and 125 degrees Fahrenheit. Heat from direct sunlight can also damage a floppy disk. Leave a disk on the front seat of your parked car in the noonday sun, and it will warp faster than a record album on a radiator.

Finally, don't use a floppy disk as a beverage coaster. This may sound obvious, but the obvious is what you're most prone to overlook.

Floppies Forever, Redux

Despite the emergence of megasize hard disks, CD-ROMs, WORMs, RAM cards, and a plethora of other exotic offline storage devices, floppy disks are going to be around a long time, and with just cause. Rarely has so simple and elegant an object found such success in the PC marketplace. With your newfound knowledge of this durable medium, you can make the right choice when it comes to choosing, using, and treating the floppies in your life. ⊡

Jack Nimersheim is an independent computer consultant in Covington, Kentucky. You can read his news and views for beginning and intermediate DOS users in "DOS Prompt," part of the MS-DOS section of COMPUTE! Specific.

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How to tell if an integrated software package is right for you.

Look How Things Have Changed.

When integrated software first appeared, it had limited functionality, was difficult to learn, cumbersome to use, and cost between $300 and $500. Today most integrated products have a more complete set of features, are easier to learn, and are priced between $149 and $259.

Amazingly, critics say Eight-in-One™, a product costing only $60, is the easiest to learn, easiest to use, yet has the highest performance. Who needs an integrated package the most? And what can you do with them?

Home Office and Small Business People Have Discovered a Secret.

Working in a home office or small business usually means that you do a little bit of everything - write reports, do financial analysis, schedule appointments, track customer information, and anything else it takes to run a business without lots of people. If you have all of the tools you need in one integrated software package you get several immediate advantages.

Imagine having a collection of robust applications, poised in a single program, ready to tackle all of those tasks you always thought that a computer should be good for . . . to put a graph into a letter and have it finished three minutes later . . . to instantly check your next appointment, or automatically dial a customer on the telephone while you're in the middle of working on a spreadsheet.

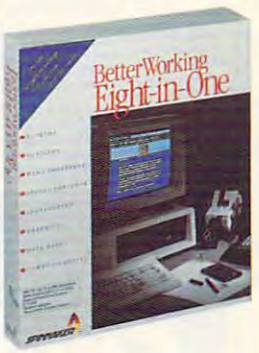
With integrated packages you can save a lot of time. Since you probably teach yourself how to use software (unlike working in a large corporation where you'd get training and support from the department down the hall) you'll appreciate how much more quickly you'd become productive using one integrated package rather than many separate programs. Because when you learn one tool, you've learned them all.

And you can save a lot of money too- over $1000. Because you won't have to buy many separate packages like a word processor, spreadsheet, database, graphics, and communications program, just to get all of the tools you could find in one complete, affordably priced, integrated package.

What Do You Get In The Best Integrated Packages?

The best integrated packages put a complete solution at your fingertips. They provide you with all of the useful tools that you need to do your job- a word processor, spreadsheet, database, outliner, desktop organizer, communications module, graphics program and powerful spell checker and thesaurus.

Well designed integrated packages are obvious-to-use. All of the options are right there on the screen. And each tool should work in the same way, so that after spending a few minutes working with one of the applications, you've virtually mastered the entire program.



Compute! Editor's Choice

What's more, the best integrated packages are lightening fast. Doing things like recalculating a large spreadsheet or spell checking a letter should never slow you down. So with a high quality integrated package you take full advantage of the power of your computer. Many users say they get their work done in half the time.

Surprises in Eight-in-One.

Here's why over 150,000 people in home offices and small businesses have switched to Eight-in-One in the last two years.

With Eight-in-One you get more useful tools than you find in other integrated packages. You not only get a powerful spreadsheet, word processor, database, graphics, and communications program, but also a desktop organizer, outliner, spell checker, thesaurus and pop-up calculator.

You might expect the most expensive packages to have the highest performance. But Eight-in-One actually outperformed Microsoft Works® and PFS: First Choice™, costing more than twice as much, in a recent test conducted by a nationally recognized independent software testing laboratory.

Eight-in-One is the only program that's truly obvious-to-use. Knowing what to do next is always apparent from the on-screen prompts and drop down menus. According to Eight-in-One users, this experience goes beyond "easy learning". They say it's more like not having to learn at all, because everything is so obvious on the screen.

The Experts Agree . . .

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"You don't need to open the manual at all to use BetterWorking Eight-in-One"
-PC Magazine

"Eight-in-One may be the only computer program you'll ever need ..."
-New York Times

"... PFS: First Choice and Microsoft Works, move over!"
-PC Magazine

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Visit your local software dealer today, or call Spinnaker at **1-800-826-0706**, to learn more about why Eight-in-One is the right integrated software package for you.

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PC PRIMER

HINTS AND TIPS FROM OUR READERS

Every time you want to change graphics modes in *PC Paintbrush IV,* you must run PBSETUP and install new graphics drivers. Luckily, you can use DOS batch files to get around this unfriendly requirement.

After deciding which graphics modes you want to use, install the program using PBSETUP for each mode. Rename PAINT.BAT to something that's representative of the mode you selected, such as CGA4.BAT, EGA16.BAT, or VGA256.BAT. Now, instead of typing *PAINT* to run *PC Paintbrush,* type the filename that puts you in the desired mode.

A more elegant solution is a batch file that gives you a menu for different video modes. Before creating the batch file, you'll need to create a special program using DEBUG. The following example is simple for the sake of clarity, but you can add your own enhancements.

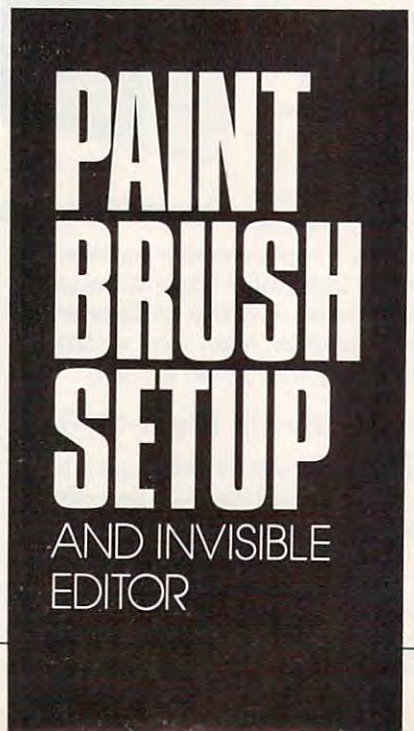
Let's start by making a file called KP.COM. Make sure that you're in the *PC Paintbrush IV* subdirectory (usually called PBRUSH) and enter the following. The computer's prompts are in plain text; you should type the characters listed in boldface.

```
C>PBRUSH>DEBUG KP.COM
File not found
- E 100 2B C0 CD 16 B4 4C CD 21 C3
- RCX
CX 0000
: 9
- W
- Q
```

Now you'll have to write the menu batch file using a text editor or EDLIN. Keep it simple until you get it working. You can embellish it once it's functional. The following example allows you to choose from one of three batch files named CGA4.BAT, EGA16.BAT, and VGA256.BAT. You can have as many choices as will fit on your screen.

```
@ECHO OFF
CLS
ECHO 1) CGA
ECHO 2) EGA
ECHO 3) VGA
ECHO 4) Quit
:GETKEY
KP
IF ERRORLEVEL 52 GOTO END
IF ERRORLEVEL 51 GOTO
   MODE3
IF ERRORLEVEL 50 GOTO
   MODE2
IF ERRORLEVEL 49 GOTO
   MODE1
GOTO GETKEY
:MODE1
CGA4
:MODE2
EGA16
:MODE3
VGA256
:END
```

The ERRORLEVEL numbers are ASCII codes for the keys; your DOS manual will contain a table of these if you want to use different ones. The IF ERRORLEVEL statements must be in descending order with respect to the ASCII codes.



Power users may want to add some additional features. Instead of invoking a batch file with only its filename, enter CALL FILENAME and control will pass back to your menu batch program. You might then want to put a label before the CLS called :BEGIN. After calling each batch file, add a line that says GOTO BEGIN. Then you can select another graphics mode without having to retype the menu batch file.

One last thing. If you want to make sure that *only* the specified keypresses are honored by the batch-file processor, you'll have to add to the IF ERRORLEVEL statements. Instead of IF ERRORLEVEL 81 GOTO END, make the line read IF ERRORLEVEL 81 IF NOT ERRORLEVEL 82 GOTO END.

Richard C. Leinecker
Winston-Salem, NC

Free Text Editor

You can easily add a few lines (such as DEVICE=ANSI.SYS) to your CONFIG.SYS file without using a text editor or a word processor. The DOS COPY command is all you need. If you enter

COPY CONFIG.SYS + CON

at the DOS prompt, the computer copies the current contents of the CONFIG.SYS file back to CONFIG.SYS. Then it displays the filename (CONFIG.SYS) and CON and waits for you to add as many lines as you want to the file. Type the line you wish to add and press Enter to continue on to the next line. When you've finished, press F6 or Ctrl-Z to write the amended file to the drive.

Tony Roberts
Greensboro, NC

Do you have advice that makes a PC more productive? If so, we'd like to hear from you. Send your tip, no matter how brief, to COMPUTE! Feedback, P.O. Box 5406, Greensboro, North Carolina 27403. If we publish your suggestion, we'll send you a gift.

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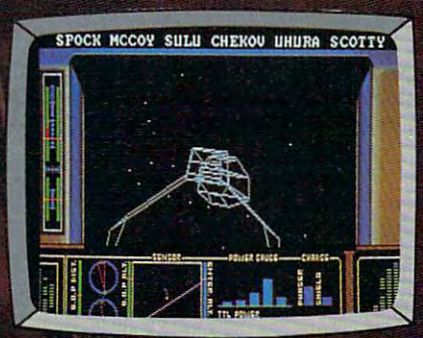
Spock! — aren't you supposed to be dead?

I rebooted!



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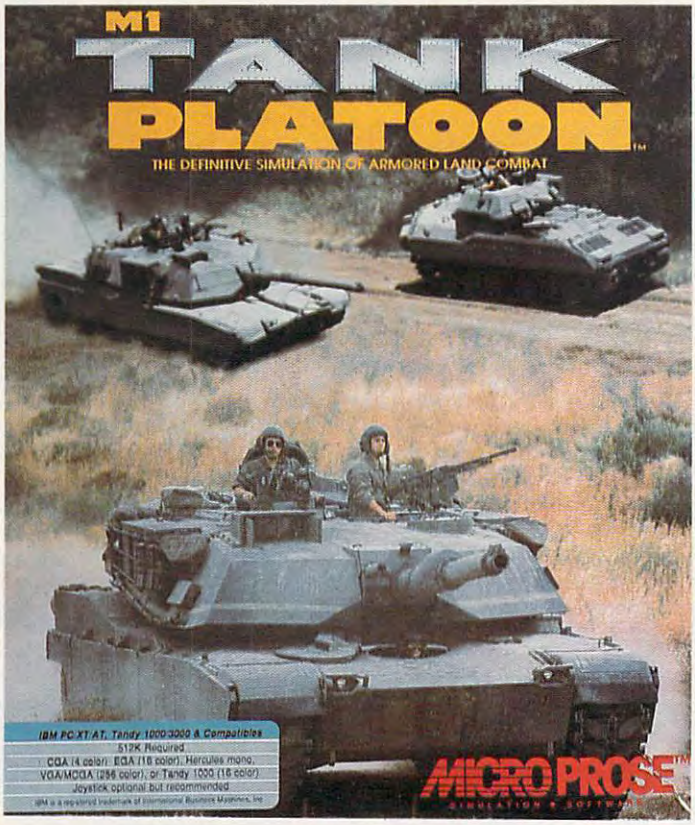
ENTERTA



COMPUTE! CHOICE

COMMAND A PLATOON OF TANKS IN THIS INCREDIBLY REALISTIC WAR SIMULATION

RICHARD SHEFFIELD

You scramble to button up the Tank Commander's hatch as whistling Soviet artillery shells rain down on your position. They'll be coming now. Your platoon of four M1 Main Battle Tanks is tucked in neatly behind a ridge line with just their gun turrets exposed. You wait, the sound of approaching thunder growing ever nearer.

Off to the east, a wave of Soviet armored vehicles roll forward, toward the hill you've been commanded to defend. The enemy consists of T-72 and T-80 Main Battle Tanks, BMPs, BTRs, missile launchers—everything but *Sputnik*.

A quick scan of the battlefield shows more enemy activity off to the northeast. More T-72s—bad news. They start to move toward your flank. Luckily, you've planned for such contingencies. The two Bradley Fighting Vehicles you have on overwatch duty spot them from the big hill behind you. A flash and a puff of smoke let you know that they're engaging the tanks with TOW antitank missiles. That should keep them busy for a while.

You turn your attention back to the advancing swarm. The valley below you looks like Red Square on May Day. To keep from wasting ammo on long-range shots, you let the range close before giving the order to fire. When the laser beam you're bouncing off the lead tank gives a range reading of about 3000 meters, you figure that should do. Over the radio net you give the fire-at-will order and each of your tanks starts to operate on its own.

"Gunner, HEAT!"

The loader slides a HEAT round into the gun breech and jumps back out of the way.

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INMENT

"Up!" comes the reply.

"Engage front!" you cry. Your gunner is way ahead of you. The enemy T-72 is square in the gun sights and the big gun is laid on.

"Fire!"

"On the way!"

Sounds like war, but war was never this fun. And this is only half of the simulated combat experience MicroProse brings to you in *M1 Tank Platoon.* This fantastic game is really two games in one. On one level, it's like a miniature war between toy soldiers that have come alive. You order your tanks and support vehicles to move, and off they go, firing when they spot an opponent. At the same time, you have to react to a rapidly changing tactical situation. Your units will respond to your orders and engage the enemy as best as they can.

Once you get the battle going, however, you don't have to just sit back, give orders, and watch. Not in this war. Shrink yourself, jump into one of your tanks, and do your best to affect the battle's outcome. You get the best of both worlds in this game: the tactics and unit placement of a strategic board game and the driving, shooting, and first-person views of a pure simulation.

The action takes place over the rolling hills and valleys of West Germany, and with good reason. There are only two places in the world with any concentrations of M1s: Germany and Texas. As co-designer Arnold Hendrick puts it, "In Texas, all there is to fight against are other Americans and various armadillos."

As platoon commander, you must guide your troops into battle.

You won't find the large, full-color maps you see in other MicroProse games. "New terrain is generated for every mission to keep the game from being repetitive," explains designer/programmer Scott Spanburg, who has been working on *M1 Tank Platoon* since 1987. The terrain takes on strategic importance because the gently sloped hills allow you to place your tanks in realistic "hull down" positions.

One of the first orders of business after you load the game is to receive your platoon and give it a macho name. I called mine Rich's Rogues. (After getting plastered in my first couple of missions, a more fitting name would have been the Fleeing 59th.) Then you must select your assignment. When you first start out, it's best to spend a good bit of time in the two training assignments: Static Gunnery, where you shoot at stationary targets, and Moving Gunnery.

Operating the gun is only one of many things you need to learn on the live-fire range. Take this time to master the somewhat complicated process of giving orders and moving your troops. Learning to split and reform your platoon, to give platoon and individual vehicle orders, to jump from one vehicle to the next, and to call in accurate mortar fire is extremely beneficial to your health. Fortunately, *M1 Tank Platoon*'s keyboard overlay, optional joystick commands, and clear interface make it easy to learn your way around. But once the metal starts to fly, it's easy to get flustered and give an order to the wrong group. The manual provides two well-written tutorials that lead you, step by step, through your first two training sessions.

When you're ready for the real thing, you can hone your combat skills by choosing Single Engagement. These battles vary in difficulty and let you experience all of the classic armor-battle types: Break Throughs, Meeting Engagements, Hasty Attack, Assault, Defend Position, and Rearguard Action.

Once you're comfortable with the rigors of combat, you can select Campaign to start a series of connected battles. Your performance during each battle determines your next assignment. If you stop the initial Soviet

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advance, your next mission will probably put you on the offensive, and you can try to pound the Reds back into East Germany. The campaign continues until one side or the other can put together a string of victories. If you lose all four of your tanks in any one battle, or lose an entire campaign, the history of your platoon will end and you will have to start a new one.

The level of difficulty is set by choosing the experience level of the troops you will be fighting. You can start off by beating up on green Second-Line troops, then move up to First-Line, Veteran, and finally Elite opponents. Each time you move up a level, you affect three battle components: The enemy troops have higher skill levels and better command, the enemy has newer and better equipment, and the operation of your equipment changes from optimistic (Department of Defense–advertised specifications—in other words, propaganda) to pessimistic (the way it is in the real world).

Your last stop before rolling into battle is the Bivouac Area, where you outfit your platoon and get your briefing. The Outfitting area gives you your first look at your All-Volunteer Army troops. You have 16 men under your command, 4 to a tank: Tank Commander, Gunner, Driver, and Loader. Each has a skill rating from Inept to Excellent. They'll be poorly trained at first, but if they live long enough, you can improve their skills through promotions and decorations. Think of managing your troops as a kind of game within a game, and you'll increase the complexity of this simulation even further.

At the Briefing Area, you'll get your orders for the day and find out if you have any support in the form of Bradleys, APCs with Infantry Squads, M901A2 Missile Carriers, or even another platoon of M60 tanks. On some missions, a little artillery and air support are thrown your way. Scout and attack helicopters ("helos") may be called in, but they last about as long as blue jeans in a Moscow department store. Air Force A-10s ("Warthogs") are much more useful. They can punch portholes in enemy tanks as well as scare off Soviet Su-22 attack aircraft. Unfortunately, the Warthogs are rarely available.

When you issue the Go to Battle command, the balloon goes up and the battle is on. This is no place for the meek or the faint of heart. The battlefield is all rock and roll, so you'd better get your platoon on the move and be prepared for losses. Even at the easiest levels, you'll likely come home with a bloody nose your first few times out. But while the learning curve is steep, your command decisions will improve quickly with experience—so jump right in and take your licks. You'll quickly learn that it's much easier to keep up with the action from the Map Board screen. If you try to "micromanage" and do everything at the vehicle level, the situation can quickly get out of hand.

The 3-D graphics in this game are some of the best I've seen. Everything scrolls very smoothly, even on my mediocre 10-MHz AT. By using the lower level of detail, you'll get very good results even at 4.77 MHz. As you would expect, the game supports

A direct hit gets you out of a jam.

CGA, EGA, MCGA/VGA, Hercules monochrome, and Tandy 1000 graphics modes. Tandy sound is also supported, as is the Ad Lib sound card.

Borrowing from its flight-simulator technology, MicroProse has not only painstakingly reproduced the tank interiors, but also included superior external views. Using Outside View, for example, you can hover above your platoon as it moves into contact with the enemy. Watching your four tanks respond to your orders for formation changes and swing their gun turrets to engage the enemy is a new and truly awesome sight in simulation gaming.

Once the battle is over and the dust settles, your evaluation takes place at the Bivouac Area. The screens describe how well you did in attempting to accomplish your mission and how effective you were in stopping the enemy from accomplishing his. Your performance is measured in two ways and, just as in a real conflict, there may not always be a clear winner. You get a numerical rating based on the combat power of the enemy vehicles destroyed, the enemy quality level, and how well you accomplished your mission. You also get an efficiency score, which tells you how close your rating was to the maximum score available for that mission.

Depending on how well you do, you get a certain number of promotions and decorations to hand out to your platoon members. Each time soldiers are promoted or decorated, they improve one skill level. This is really the only part of the game I have a gripe with. Unlike other MicroProse games, there is very little fanfare or feeling of accomplishment associated with promotions and decorations. And since you never know what medal you are awarding until after it has been given, you don't have that series of short-term goals to shoot for. I miss the chance to win the Bronze Star and then the Silver Star—all the way up to the Congressional Medal of Honor. The totals of Average, Good, and Outstanding career points are listed in the manual, but they only apply to a completed career of 99 missions. Believe me, that's a long way off.

M1 Tank Platoon uses MicroProse's standard dual copy-protection scheme: identifications embedded in the manual *and* a key disk. If you hated it before, you'll hate it again.

Still, these obstacles and objections are minuscule in comparison with the superb gameplay and graphics. All things considered, this may be MicroProse's best release yet. The bottom line is that good tactics work and bad ones don't—that's as it should be. *M1 Tank Platoon* is fast-moving, exhilarating, and probably as close as most of us will ever come to the experiences of the young tank commanders Harold Coyle described so well in his book *Team Yankee:*

As his tank raced along behind 66, Garger realized that he was thoroughly enjoying himself. At first it was frightening. Men were dying there in the valley. But there was no denying the feeling. He had never felt so alive. Standing in the turret of 31 as it raced along, the image of the U.S. Cavalry riding out to the rescue flashed through his mind. The only things missing from the scene were the troop's guidon and a bugler sounding the charge. This was his moment. This was why he had joined the Army. "To hell with it," Garger thought, "This is great! Too bad it can't last."

M1 Tank Platoon
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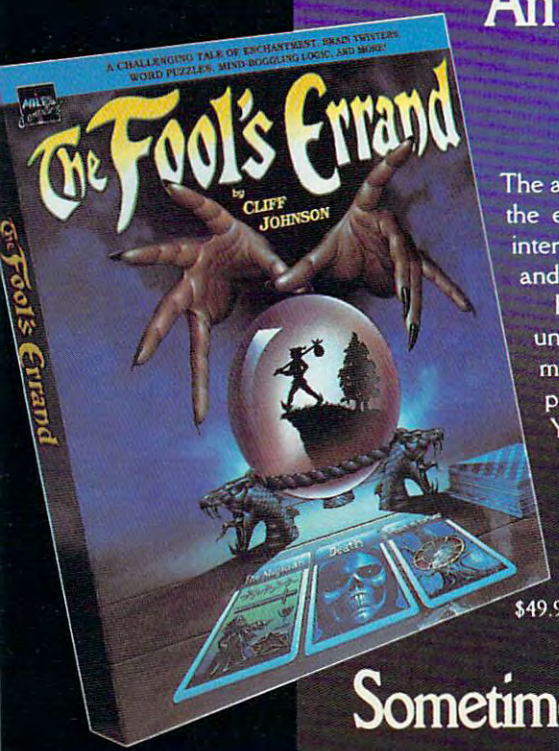

The award-winning *Fool's Errand* is a game like no other. It tells the enchanting story of the fool in his search for wisdom, intertwined with over 80 original puzzles: graphic, word, logic, and more.

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Sometimes, it's wise to play the Fool.

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GAMEPLAY

ORSON SCOTT CARD

Believe me, I am *not* afraid to fly. I like airplanes. I especially like *big* airplanes, the kind that look like office buildings lying on their side.

It's takeoffs and landings that bother me just the teeniest bit. My first hint that maybe I had a problem was when I was reading *Time* magazine right through a bumpy descent and landing. When we finally got safely on the ground, I realized that I couldn't remember a single word that I had read. And then, when I tried to turn the page, I found that my sweat had glued several pages together so thoroughly that they couldn't be separated without tearing.

I needed help.

It happened that on one trip I bought a pack of playing cards with a different piece of Japanese art on each one. Waiting for takeoff on the return flight, I pulled the cards out of my carry-on bag and began to look through them. It was then that I remembered a solitaire game that my Aunt Delpha had taught me when I was a kid. A game that didn't require a spread—I could play it with two piles of cards in my lap.

I lost five straight games (you can't actually *win* this game, you understand), and then I noticed that we were in the air. Solitaire was the distraction I needed!

I've been a solitaire junkie ever since. I guess this is the phase you come to when you're too old and slow to get your name on the vanity board in the arcades.

But much as I enjoy playing, I was appalled when I saw that Spectrum HoloByte had actually gone to the trouble of creating a computer version, *Solitaire Royale*. I mean, are there people so stupid and lonely that they need a computer to help them play solitaire?

Then one day I was waiting for an endless printout on my 386 machine, and there was the Amiga and there was *Solitaire Royale*. I fired it up and discovered that the game designers had done everything right—and in some ways solitaire could be significantly better on the computer than with a real deck.

For one thing, spreads take almost no time; gone is the tedious gathering, shuffling, and dealing between games. (Yes, I'm *that* lazy.) There are several different decks of cards, and you can customize the background color so you don't get bored staring at the same screen. The interface is obvious and intuitive with plenty of help. There are a lot of different solitaire games; if you cycle through them, you can compete with yourself or someone else and put points up on a vanity board.

One good thing about *Solitaire Royale* is also a bad thing: You can't cheat. Or, rather, you can't "improvise new rules" when you get stuck. The only fudge factor is that you're able to peek into a pile or back up one move—not enough for serious solitaire cheaters.

But the sheer pleasure of playing with such a beautiful, well-designed computer game makes up for the enforced discipline.

I wish I could say the same for the Leisure Genius's (Virgin Mastertronic) *Monopoly*. In some ways it's a fine adaptation of the venerable board game—the screen looks terrific, and the game has been transferred without modification. This is real Monopoly, without compromises to computer limitations.

That makes it all the more frustrating to find mistakes arising from sheer carelessness. For instance, I couldn't find a way to back out of a trade when I'd mistakenly pressed Y instead of N. The only way out was to make an outrageous proposal to the computer opponent. More annoying was the computer's failure to display how much money you had when you had to make financial decisions. Why should I have to write down my cash total on *paper* when there's plenty of room on the screen?

In all, I found the annoyances in *Monopoly* grew more vexing the longer I played. Why shouldn't the escape key back me out of a procedure? When it's my turn, why don't all the properties I own flash slightly? Why are we forced to use forgettable numbers to refer to players instead of choosing from a menu of memorable names? Why can't I make immediate counteroffers when the computer proposes a trade?

Don't get me wrong, Monopoly is fun, and the computer adaptation didn't completely kill that. But for me, the advantages of playing the game on computer (you can play alone, you can save a game, and setup time is nearly 0) just doesn't make up for the annoyances.

COMPUTERS SHOULD **FORGE NEW FUN** FROM OLD STANDBYS

I think computer adaptations should make board games *more* fun—without adding any annoyances. Without more control, more variations, a more pleasurable experience, you might as well get the *real* game off the closet shelf and start shuffling cards and rolling dice. ⊡

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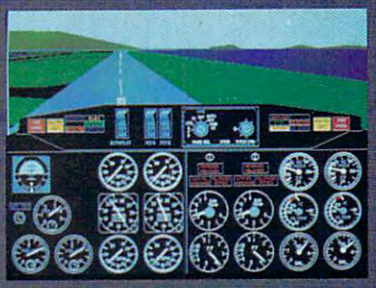

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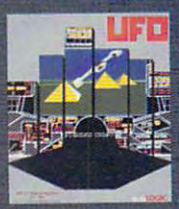

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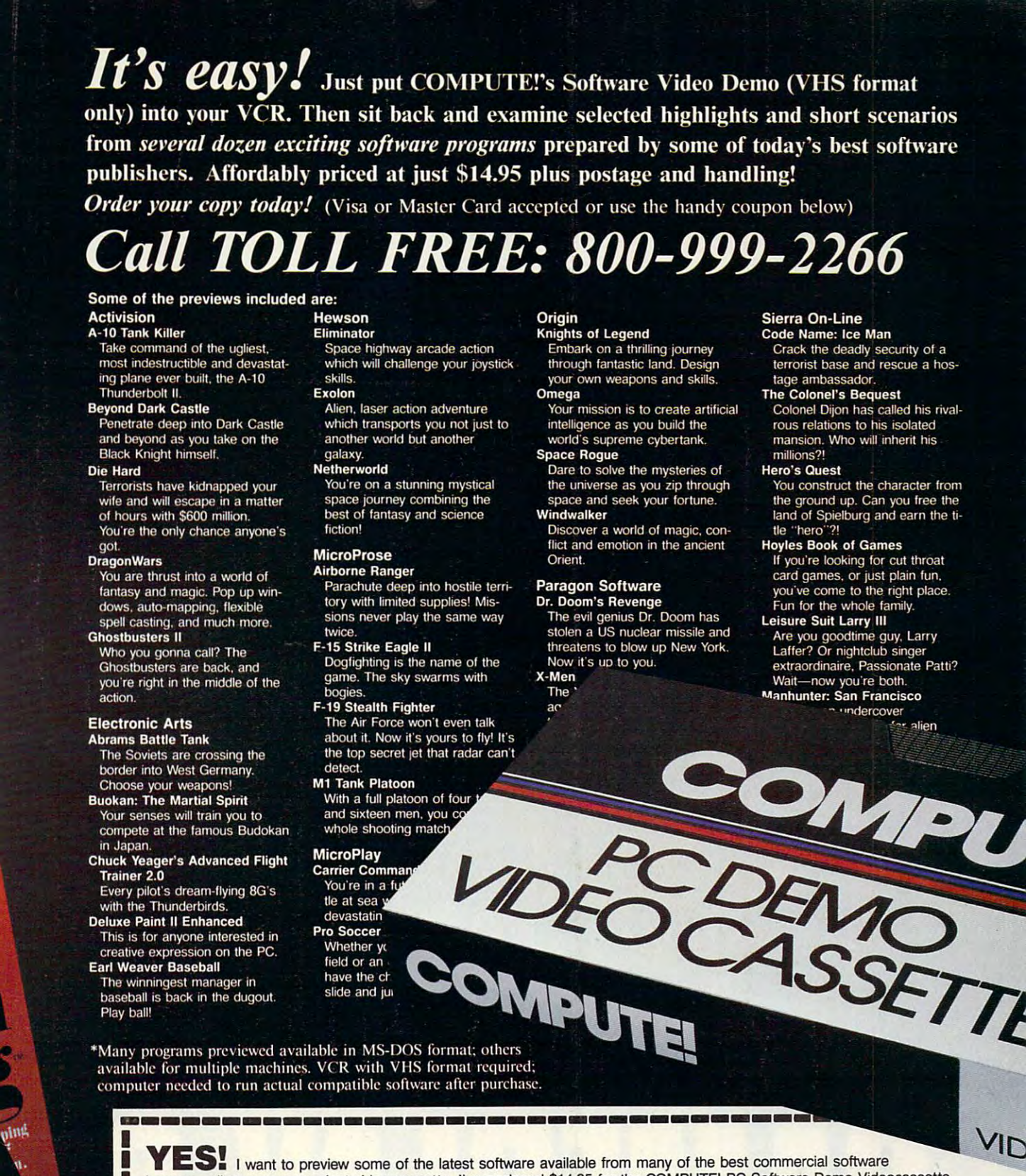

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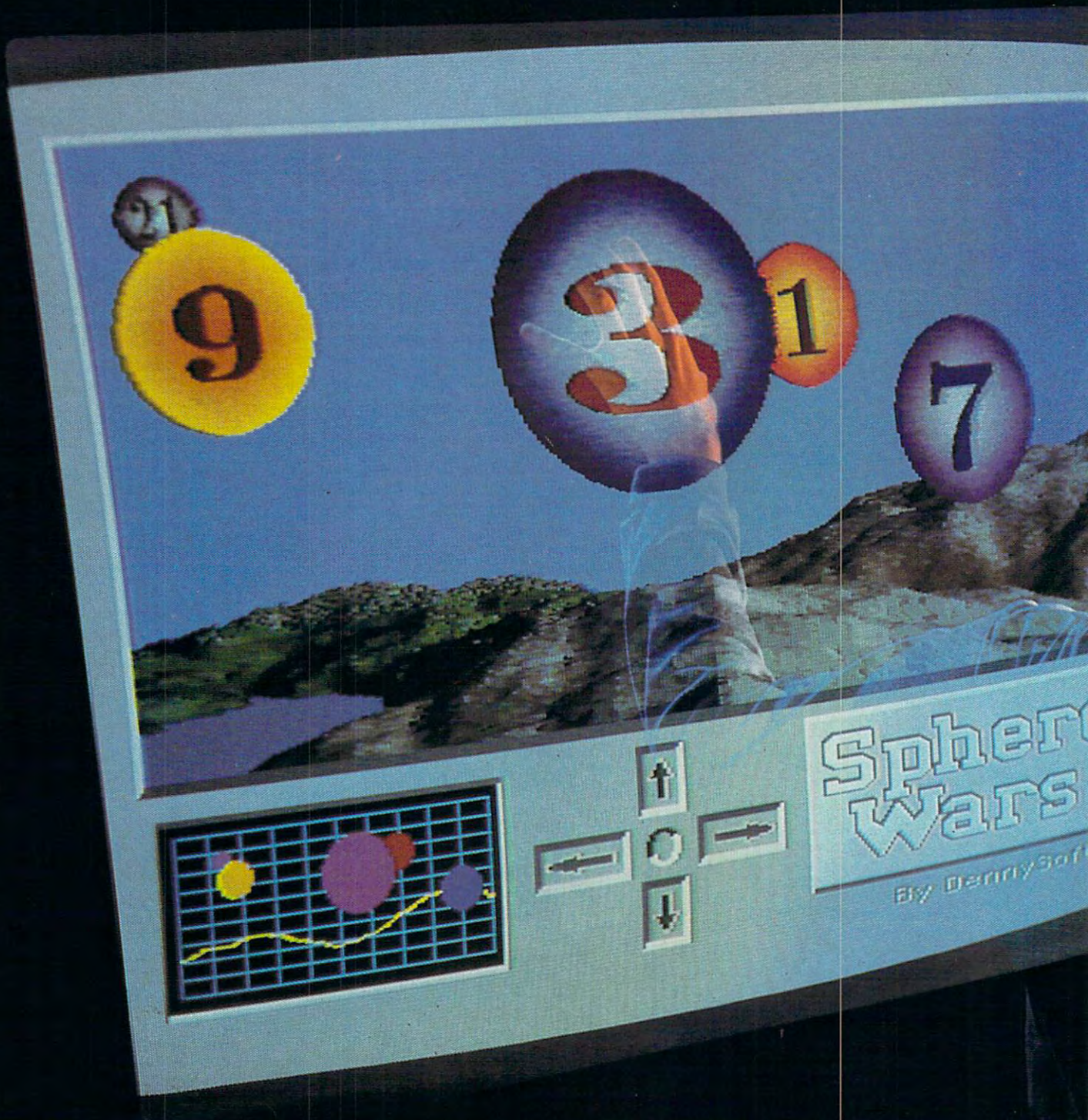

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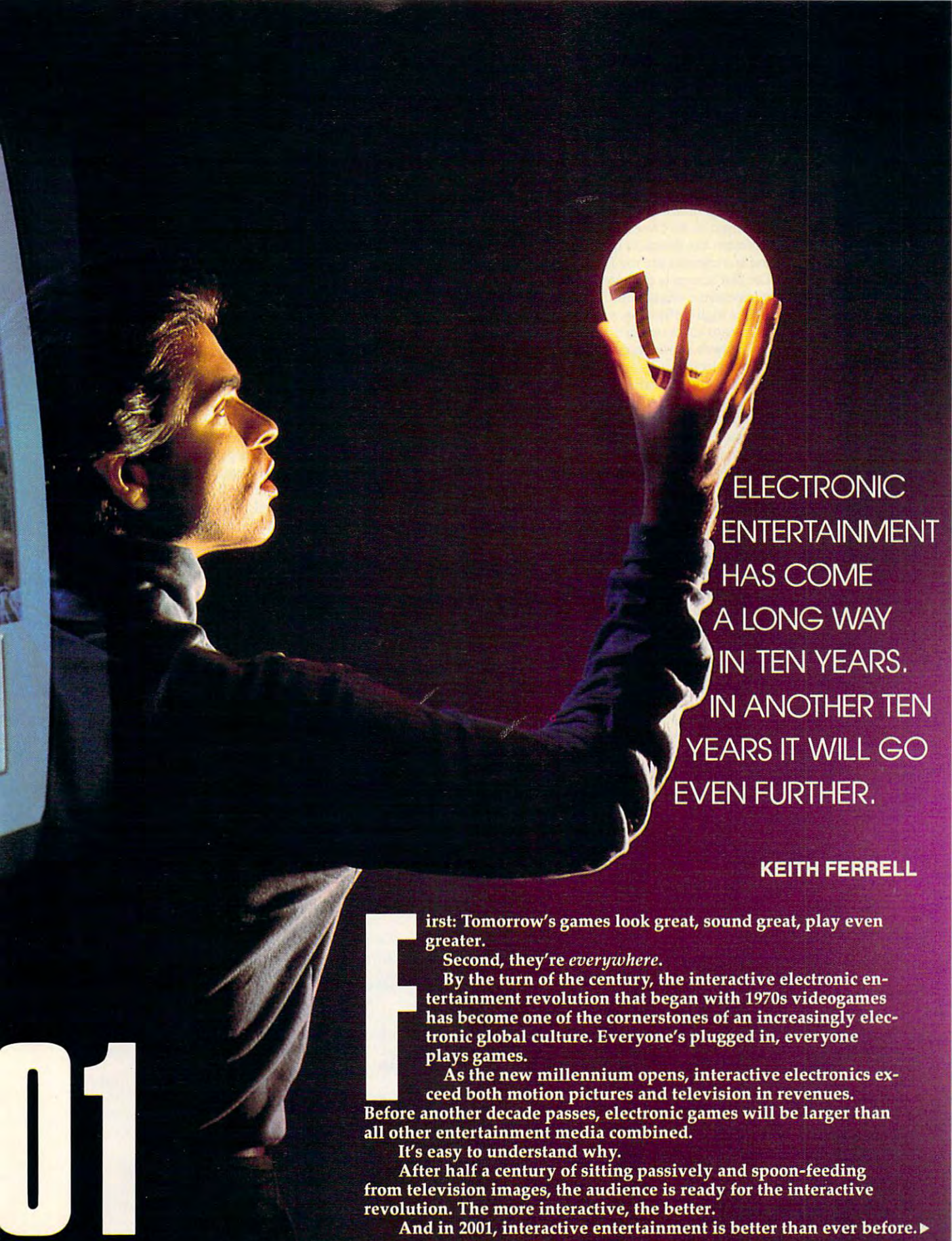

01

ELECTRONIC ENTERTAINMENT HAS COME A LONG WAY IN TEN YEARS. IN ANOTHER TEN YEARS IT WILL GO EVEN FURTHER.

KEITH FERRELL

First: Tomorrow's games look great, sound great, play even greater.

Second, they're *everywhere*.

By the turn of the century, the interactive electronic entertainment revolution that began with 1970s videogames has become one of the cornerstones of an increasingly electronic global culture. Everyone's plugged in, everyone plays games.

As the new millennium opens, interactive electronics exceed both motion pictures and television in revenues. Before another decade passes, electronic games will be larger than all other entertainment media combined.

It's easy to understand why.

After half a century of sitting passively and spoon-feeding from television images, the audience is ready for the interactive revolution. The more interactive, the better.

And in 2001, interactive entertainment is better than ever before.▶

GAMEPLAY 2001

Play TV

Game consoles are no longer simply discrete pieces of equipment, although the giant game manufacturers still produce plenty of stand-alone decks that can be moved from place to place.

For the discriminating, affluent consumer, sophisticated gaming is built into the smart TV that's the center of household entertainment.

More than slightly intelligent, able to tailor its output to its owners' tastes, these televisions represent the pinnacle of consumer electronics, and supergames are the flags planted on the peak. The flat screen is mounted directly on the wall, an electronic window into worlds real and imagined, a high-definition window that responds in an instant to its owner's entertainment whims.

Superb sound augments gorgeous images. A serious electronic game room has speakers scattered throughout, tomorrow's version of surround sound, aurally enhancing gameplay by adding symphonic scores to heroic sections, subtle sounds to suspenseful scenes. Whole studios have sprung up to provide digital scores and effects for interactive entertainment.

Multiple Media

The most visually and aurally realistic games arrive via disk, disc, or fiber.

Laserdisc games deliver motion-picture-quality video and sound. With gigabytes of storage capacity, the laserdisc has become the preferred publishing medium for interactive stories, games in which narrative plays as large a part as strategy or reflexes. Stories unfold against photographic-quality backgrounds.

Compact discs, with storage more limited than laserdiscs, nevertheless serve a large segment of the game market. Strategy games are particularly popular on CD, where icons and maps achieve stunning levels of detail.

There are still plenty of personal computers around, and plenty of people who play games on them. New personal computers take this into account; they're virtually multimedia machines with hi-res graphics, stereo sound, and fast gameplay. Most personal computers include a CD drive, as well as ports for other peripherals, input devices, and dedicated game controllers.

Game control has evolved along with game quality and style. The traditional joystick has long since given way to more sensitive devices, many of them adapted to specific pursuits. The basic controller owes much to cartridge game devices of the late 1980s, with directional input, menu-selection buttons, and fire/action toggles.

Flight simulator yokes give flyers a complete instrument panel; sports car drivers and spacecraft pilots use similarly designed consoles, shaped for the games they play. Electronic golfers swing electronic clubs that deliver data to the computer and then to the TV; a living-room slice slices onscreen as well. There are interactive tennis rackets, fishing rods, exercise mats, boxing gloves, and more.

For many game players, though, the most exciting peripheral of all may be the telephone line.

Play Phone

As optical fibers replace traditional telephone wires, they eliminate many of the technical difficulties that have plagued telecommunications

The Ethics of Entertainment

In 2001, some problems remain unsolved.

Questions of excessive violence still plague the interactive entertainment industry, questions that have grown more serious as the games grow ever more realistic.

Taking a cue from the film industry, arcade games have added slow-motion death, flying body parts, and gore. One of the year's big hits is a body suit equipped with blood squibs: One wrong move and the game draws fake blood.

Sex, too, rears its head. Both erotic and overtly pornographic software find a ready market—and a ready cadre of protestors. Interactivity makes possible degrees of pornography exceeding even the worst of the smut-film boom. Statutes against pornographic software appear in several states, but the portability of pornographic code makes enforcement nearly impossible.

Some people even protest the nonviolent, nonobscene software. Literacy dropped sharply during the latter half of the 1990s. While passive television takes much of the blame, interactive entertainment carries its share of responsibility as well. Kids can't read, but they can *play*. A few ambitious adolescents have gone so far as to file suit against school systems that impose traditional reading, writing, and arithmetic requirements, arguing that education should have more relevance to their electronic entertainment environment.

Educational software remains the poor cousin of the entertainment industry, forced to adopt game-style techniques and approaches to academic content.

Organized lobbying efforts in the mid-1990s failed to achieve legislated restrictions on game content, but the handwriting is on the electronic wall. Much as the comic-book and motion-picture industries have done in earlier decades, entertainment software developers and publishers impose certain restrictions and standards upon themselves.

Conferences are held and committees called to order. These groups develop and implement a system of rating codes. Game packaging now bears clear statements of content and suggested age restrictions.

Some developers think the industry's self-regulation is still too lenient. Their concerns extend beyond the well-being of their audience. They see themselves as engaged in the creation of an artificial reality, one that bears certain obligations.

For these developers, as well as for many dedicated players, the electronic playground is as real as, if not more real than, the actual world. Because of that, the ethics of artificial reality carry a very real weight.

The Association of Ethical Game Developers gathers strength and influence. Its credo states: "Our games enhance and enrich players' lives. Our products treat their electronic characters with respect and dignity."

As yet, no one has sued to protect the rights of a wholly electronic character. But the lawyers are talking. . . .

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games. Clear phone signals and high-speed modems make possible high-quality group games between dozens or even hundreds of players. Especially popular are the online electronic wars in which players choose vehicles, ordnance, and alliances, wreaking artificial destruction on each other.

Telephone games also find a ready audience among role-playing enthusiasts. For the most dedicated role players, a group electronic reality has come to exist, an alternate place whose appeal is limited only by the player's time and ability to pay his or her phone bill.

Athletics and board games are also building large long-distance followings. Organized leagues exist for computer sports enthusiasts, while chess and other board games have spawned telephonic tournaments avidly followed by both players and spectators.

Body Play

Fast-action, reflex-driven arcade scenarios remain the hottest game medium for kids and teenagers. To play the best, you need a body suit: neuroelectronic arcade armor, softwired for flexibility, able to detect even the subtlest physical response to visual input. These "living" arcade suits come close to dumping the player into the game world—too close, some parents say.

But parental disapproval hasn't hurt gamesuit sales. Some parents find themselves joining in, eager to prove that they can be as adept in a game suit as they once were with joysticks. (Chiropractors have enjoyed a booming business as a consequence of middle-age arcade enthusiasm.)

Of all the game categories, though, athletics remains the industry leader. It's a sports-minded world, and electronic sports are on almost everybody's mind.

Play Ball

A typical setup for an electronic-sports enthusiast consists of a huge wall screen that has windows for the scoreboard and for closeups of various parts of the field. Game control is executed via dedicated controllers that vary with each sport.

Our athletic gamer partakes of both real and imaginary contests. If baseball is your particular enthusiasm, you can put together a setup that gives you a multimedia diamond in your living room. When playing defense, use the top half of your controller, where a nine-button layout simulates field positions, a separate control area gives you access to an array of pitching styles and strategies. For offense, you can can swing from the controller or with a Smart Bat, which transmits your body language to the machine. (Practice batting sessions are available on disk.)

Every major league stadium, present and past, is stored on optical disk, as are player and game statistics. Extending a trend begun in the earliest days of interactive electronic sports, players can build their own dream teams and pit them against the best players in history. For a fee, you can download the day's games and replay them to prove your superiority to that of your favorite team's manager.

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Even better, players can exercise a degree of control over on-field action that should satisfy even the most ardent armchair manager. Instant replay is available at the touch of a button. Question the umpire's calls. Indulge in strategy. Instigate a fight.

And that's just baseball. You should see boxing.

On the Road

Leaving home? This much fun can't be left behind.

Portable games have been a growth market for more than a decade, and the growth shows little sign of letting up. Twenty-first–century portable games provide high-quality, if not high-definition, color images, fast screen movement and animation, and stereo sound (delivered through headsets, eliminating the boom-box dilemma). Most game manufacturers release their products in formats compatible with the most popular portable decks, as well as for stationary home units.

But you don't have to have a portable console to play while away from home. The newest airliners offer passengers, for a fee, the opportunity to play games on consoles built into the seatback trays. (First-class passengers play for free.) Interactive games are built into the TV sets in better hotels, and concierges are more than willing to put you in touch with other guests who share your gaming tastes.

Electronic gaming has become a destination, as well as a way to pass time while en route. Interactive game resorts provide places where like-minded gamers can get together to compete against each other, hobnob with top designers, and acquire tips and hints to improve their play.

The best of the players are in it for more than play. Both Las Vegas and Atlantic City offer an increasingly wide range of interactive games in which you pit your skills against the house.

The motto for gambling gamers: *Put your money where your mouse is.*

Brave New Game World

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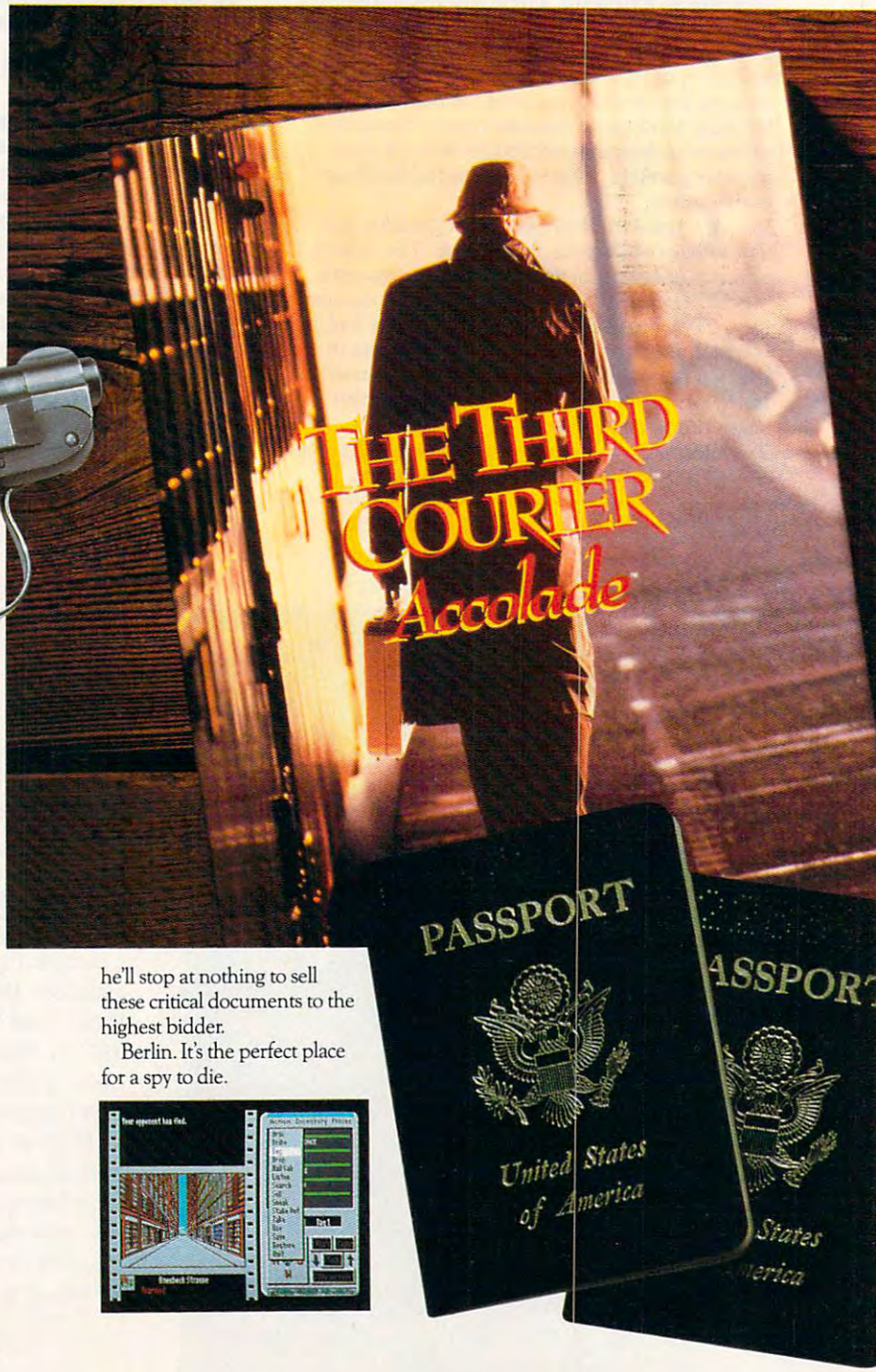
Actual game screens from IBM PC EGA version of the game. Other versions may vary.



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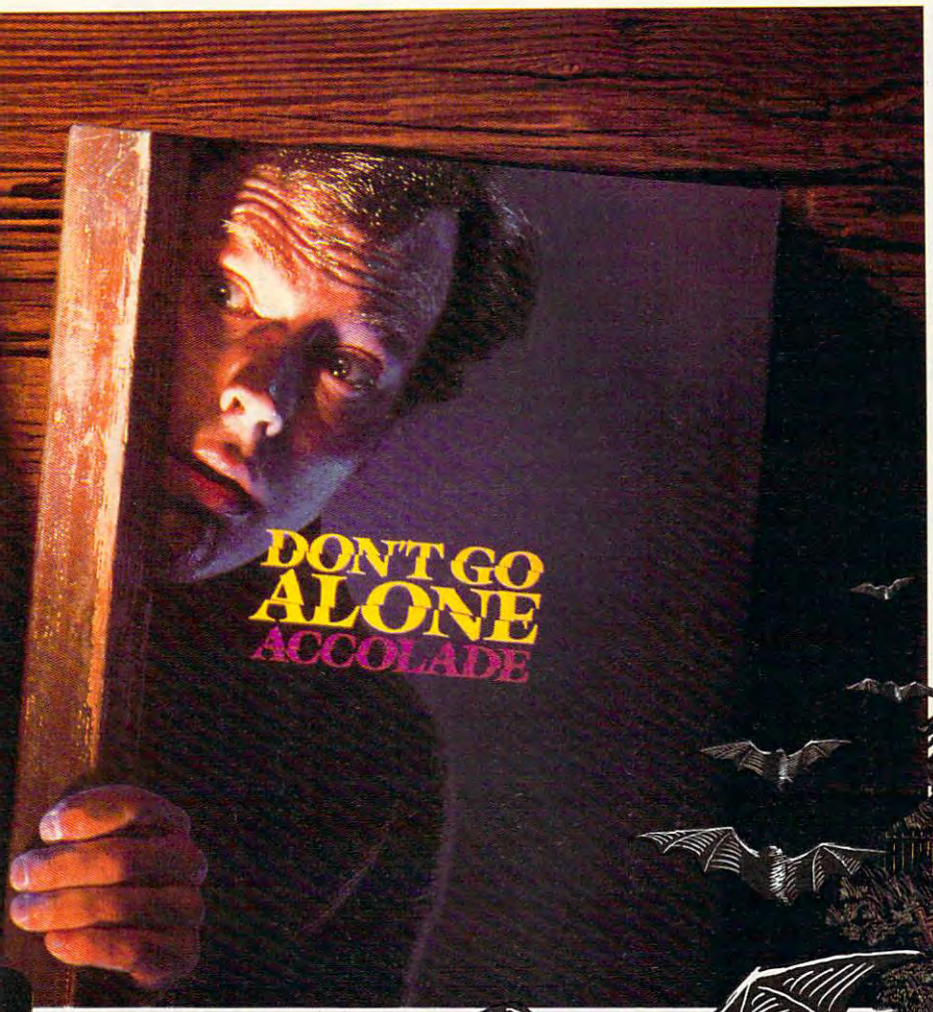
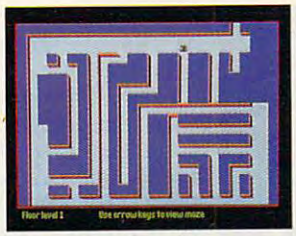
eat & Fears.





attempting to solve the mysteries of this enormous "fortress of fright." Now you, joined by an expert team of 16 polter-professionals, are destined to battle the 100 monsters that dwell inside the multi-level mansion.

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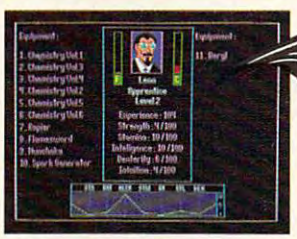

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GAMESCOPE

HINTS AND TIPS FROM OUR READERS

Here are some tips for making it through MindScape's *Deja Vu.*

To get a lot of quarters for cab fare and ammo, go to the casino in the basement of Joe's Bar by taking the elevator from the Weird Room and pressing the second button from the bottom. Once there, start taking your quarters one-by-one from your wallet and putting them into the shorter slot machine on the right.

The machine will happily eat the first 5 or so quarters you insert, but with the next, your persistence will be paid off by hitting the jackpot! Now you have 24 more quarters.

To get rid of the mugger, simply give him a quarter. He'll leave you alone for the rest of the game.

To get confessions from Marsh Vickers and John Sternwood, get the vials of sodium pentothol from Dr. Brody's office and take a cab to 626 Auburd Road. Once there, punch out the butler at the door, go upstairs to the bedrooms, and inject each sleeping subject with the truth serum.

Kevin Jiang
Bathhurst, N.B., Canada

Adventure-Game Peeking

If you've ever played an adventure game and wished you could look through all of the clues and keywords in the program, this tip is for you. All you need is some patience, perseverance, and the DEBUG program included with MS-DOS.

Start by running the adventure game you want to eavesdrop on. Quit back to the DOS prompt and type DEBUG. When you see the hyphen prompt, type D 0000:0000 and hit Enter. What it's doing is showing you the contents of memory at segment 0, offset 0. Pressing D and Enter shows you the next set of locations. Pressing D and Enter enough times will get you to the end of your computer's memory.

You won't see much that has to do with the game at first. The lower part of memory is dedicated to system stuff and device drivers. Once past this, you will begin to see what you're looking for. If you happen to see something that you want to come back to, write down the eight numbers that are separated by colons—for example, 1236:0012. To get back here later, you would type D 1236:0012 at the hyphen prompt. To quit, type Q and press Enter.

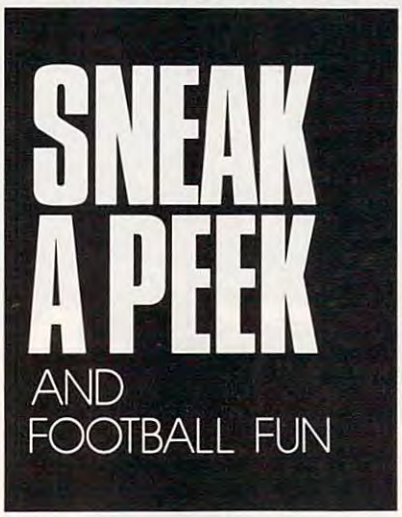
You might discover some interesting clues that you could send into "GameScope," such as the purpose of the mysterious leaf in *Space Quest.*

Richard C. Leinecker
Winston-Salem, NC

Sim Time, Sim Channel

Creating a town in Maxis's *SimCity* is a lot of fun, but keeping a growing population happy isn't easy. Here are some tips to make your mayoral term easier.

Set aside a remote area for industrial zones. Factories breed crime and pollution. If you put all of the factories in one distant area, you'll keep these slum-level factories from bringing down residential property values.



Build a town with no roads. If you only have a rail system, you'll never have to worry about traffic problems and automobile pollution. The citizens will complain about a lack of roads, but it won't affect your rating.

If all else fails and you run out of money, type the word *FUND* on the main screen and you'll find yourself with an extra $10,000. Be careful, though: If you embezzle often, you're likely to be caught.

Denny Atkin
Greensboro, NC

The Whole Ten Yards

The Super Bowl will be upon us shortly, and if you've been getting into the spirit by playing Accolade's *4th and Inches,* I have a few pointers that will turn you into a living-room Lombardi.

First, you have to establish your running game. My two favorite plays are the sweep and the screen pass. Because the computer's defense is so heavily weighted against the pass, you can usually spring a runner around the end for a good 20–40 yards.

Use a halfback or fullback for both of these plays because they're quick and big, making them hard to tackle. For a screen pass, which works great on a first-down situation, let your quarterback stand in the pocket for as long as possible, fooling the defense into thinking you're going long; then toss the ball to the runner and watch him go.

Running a sweep is a little trickier. The key here is learning how to run with the ball. As the defenders come at you, you'll notice that they tend to line up as a group. When they get close, move quickly to either side and then straight ahead. If two ranks of defenders are after you, step into the space between them—many times you can get past before the computer can react.

Peter Scisco
High Point, NC

If you have game tips and shortcuts of your own, we'd like to hear from you. Send your tip, no matter how brief, to COMPUTE! Feedback, P.O. Box 5406, Greensboro, North Carolina 27403. If we publish your suggestion, we'll send you a gift. ⊡

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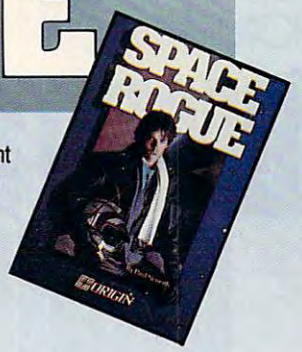

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LEARNIN

HIKE ACROSS THE U.S.A. WITHOUT LEAVING HOME

COMPUTE! CHOICE

HEIDI E. H. AYCOCK

Stricken with a case of wanderlust, I grabbed my walking stick and booted *PC USA*. Oh sure, I could have played some fantasy role-playing game and explored the depths of darkest Mordor. Or I could have chosen a military game and cut a path of silent but dangerous intrigue through the sea. But there are so many interesting things about the United States that I decided to gather treasures and encounter strange creatures in a land that is both familiar and unusual. With *PC USA* as my guide, I was on my way to new knowledge and understanding—as long as my hiking boots would hold out.

PC USA is an educational program for people of all ages. It presents statistics and charts about the United States in a manner that makes the information clear and useful. Besides the numbers and graphs, you get maps of the country, broken up into states and regions.

At first, I simply rambled across the countryside, traveling from state to state on *PC USA*'s map. I started by calling up the USA menu and choosing a region. The map magnified a view of the Southeast. Interested in which states were bought in the Louisiana Purchase, I chose the Group command and asked to see those states. Again the map zoomed to another view of the country, with the Louisiana Purchase marked in green. To find the city of Bluefield, West Virginia, I went to the menu again and asked where the city was. A green square marked my destination. From other menus, I could choose regions by the states or cities that I knew. State maps show rivers, major cities, and geographical features. A special utility figures distances between cities, and another draws a topographical map for you.

If the maps had been the featured players in *PC USA*, the program wouldn't be exceptional. But there's more.

Like a demographic compass, this program points you to population statistics, crime rates, industrial profiles, and other facts and figures. You'll also hike through historical

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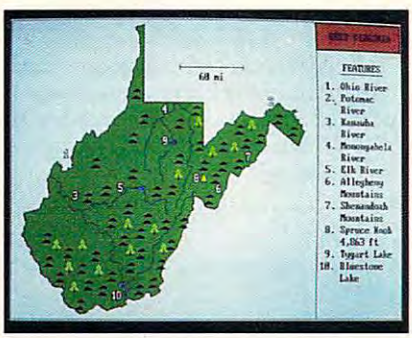
Like a demographic compass, this program points you to population statistics, crime rates, industrial profiles, and other facts and figures. You'll also hike through historical sketches, information on distances between cities, and other trivia that make each state a little more interesting. You can compare states by asking the program to represent the statistics on a map. You can also look at a profile of a state, flipping through screen after screen of average pay scales, average migration, and so on. Think of something you want to know; *PC USA* will probably be able to tell you.

The program designers have gathered statistics on 150 topics. Some are measured per capita; others are presented as raw figures, unrelated to a population or other base figure. All are based on data from such government agencies as the U.S. Bureau of the Census, the U.S. Department of Energy, and the National Education Association. To keep the information current, the program will be updated yearly. The updates will cost between $20 and $30.

Not interested in statistics? Choose another trail and discover concise state histories. *PC USA* has listed the important names and dates in each state's past. For example, you may discover that in 1820 both Missouri and Maine joined the United States—Maine as a free state, Missouri as a slave state. Stick this tidbit in your knapsack for any number of projects, from trivia contests to research papers.



State maps show rivers, forests, major cities, and other geographical features.

Maybe you're graduating from nursing school, and you must decide where to go to find a job. So you compare the number of people per nurse in the United States, calling up a mapped representation of the statistic. *PC USA* color-codes states by the ratio of people to nurses.

You can ask for the figures to be represented in five or nine ranges. The nine-range map is more detailed and therefore more precise. When I checked North Carolina's traffic fatalities in five ranges, the map showed between 800 and 2000 incidents in 1987. So I asked to see the map in nine ranges; North Carolina was in the 1300–2000 range. For still more precision, I called up North Carolina's database profile and found that the exact number was 1598. You can get as much or as little precision as you want from *PC USA*.

You can also ask for a bar graph that compares several states. Try lining up teachers' salaries in Alaska, Colorado, North Carolina, and Utah. You'll find that Alaska is the place to go if you want to make a lot of money teaching; $40,000 is the average teacher's salary there. But, after you check the climates of the four states, you may decide that you'd rather live in North Carolina.

Often you want to compare several characteristics of several states. This is possible to some extent with *PC USA*. For instance, you can ask for data on crime statistics, average life span, and climate for New York, Washington, and Texas. *PC USA* won't show you a compiled graph of all of the information, but it will cycle through the individual graphs and charts of this data so that you can draw your own conclusions.

If you can believe the standard tests you read about or that you hear about on television, not many Americans have studied geography. Myself, I always think Illinois is much farther west than it really is. (Sort of makes you thankful that you're not hiking across the country with me, doesn't it?) Using *PC-USA's* Point and Shoot command, you can move the pointer to any state and see what its name is. You can also label states with their postal abbreviations. I'm getting better at naming the states every day.

For homes across America, and even for those outside our country, *PC USA* will prove to be an extremely valuable resource. It's easy enough for the youngest information hunters in your family and meaty enough for the most diligent researcher.

The program's menu interface is simple to operate; you travel through clearly marked lists that branch from one choice to the next. Hitting any key summons the menus, but no one key is dedicated to one menu. Whichever menu was last called is the menu

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that pops up the next time you hit a key. Once you've activated a menu, though, choosing a command is a simple matter of moving the cursor with either the cursor keys or the mouse and then hitting Return or the mouse button. You could also select menus and commands by a code letter or number.

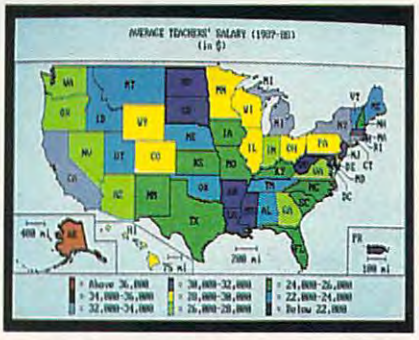
Some commands branch out to lists of items you must choose from. For example, when you issue the State Comparison command from the Database menu, you must then choose which states to compare on which topics. Again, this is a simple process: Move the cursor to the items you want to choose and hit Return; then move the cursor to the Done command and hit Return again.

I found the interface a little confusing at first. Not because it was hard to accomplish anything, but because it was so easy that I kept issuing commands when I thought I was just browsing. No problem, though. It's easy to get back to where you started, no matter how far afield your explorations take you.

Exploration is, in fact, the name of the game with *PC USA*. To get the most out of this program, you must be prepared to wander around the menus and experiment with the commands. The manual is short and concise because it can't really tell you much beyond the mechanical operations of the program. You have to discover the most useful ways to find information. It's up to you to figure out whether the map is more helpful than the bar graph, whether nine ranges of frequency are more helpful or more complicated than five, whether to compare three or seven states at a time. For children, this exploration is a wonderful way to learn how to read and analyze graphs and numbers.

Most important, you have to catch the unusual numbers. Would you be surprised, for example, to find that Alaska has the highest per capita number of sexual assaults? Less surprising, but equally fascinating, was a comparison of violent-crime rates, property-crime rates, and unemployment. Louisiana is one of the top two states for unemployment and one of the top states for violent crimes. The three states at the northeastern tip of the country are low in unemployment and violent crime. Property crime is more middle-range for Louisiana and the upper New England states alike. But here's a conundrum: West Virginia is the other state with the highest unemployment rate, according to *PC USA*. So you'd expect that state to have a high violent-crime rate also, in keeping with the pattern I had discovered earlier. In fact, West Virginia has one of the lowest violent-crime rates in the country and a very low property-crime rate. If this sort of riddle is interesting to you, then you'll love this program.

But even if you're not fascinated by such inconsistencies, you'll get a lot of value out of *PC USA*. Offering the same reference qualities as an almanac, this program is packed with easy-to-access data that will add detail and precision to reports, speeches, and debates. Children will be particularly pleased with how helpful this program can be when they write papers for school. They can find interesting trivia to add color to their reports, and



This U.S. map shows which states have the highest average teachers' salaries.

they can learn to uncover trends suggested by statistics.

To use *PC USA*, you need a PC or compatible with 512K of RAM. It runs best from a hard disk but can run off one floppy drive. *PC USA* takes advantage of most graphics adapters, but it doesn't support Tandy 16-color graphics. Although the program does offer printing, it only supports a few output devices so far: the HP Laserjet, the IBM Proprinter, and IBM color printers. Other printer drivers will be available later.

Printing may be the most impressive feature of *PC USA*. As long as you have a compatible printer, you can reproduce any of the screens on paper. You could print individual pictures of each state to create a set of flash cards to teach your kids to recognize states by their shapes. You can also print any of the graphs. For research projects, these graphics could be very useful, but you should check on how to document *PC USA* as a source.

I can highly recommend this program because it does everything it sets out to do. On the other hand, there are some weaknesses, and the primary one is the hardest to solve. *PC USA* is filled with numbers, but they are static numbers, statistics that don't lead to new statistics. The numbers are represented on charts and graphs, and the program makes only the simplest calculations on the data. You can't take several variables and measure them against several other variables. What I'm asking for is more than *PC USA* intends to be. However, as a newly blazed trail calls out to your traveling shoes, this program practically begs you to go further than it's willing or able to take you.

There are a few easily implemented improvements that would make *PC USA* a much better program. First and foremost, if the program won't make new comparisons from the data, it should include a memory-resident calculator so you can do your own figuring. I'd like to be able to calculate traffic fatalities per registered automobile when the program provides only raw numbers, for example.

I wish *PC USA* would let me bounce one statistic off another, for example, cross-tabulating data on the average life span for men against the top industry in the state. Lacking that feature, the program should let you split screens, perhaps offer multiple windows, so you can see data for one state side by side with that for another. You could also look at several different topics at one time for one state. As it stands now, not only must you understand how to make some complex comparisons of data, you must also remember the data from screen to screen.

My desires for even more comprehensive features spring from the fact that *PC USA* points you to all kinds of information and to dynamic relationships between numbers. If you have any curiosity at all, you'll start wondering why Massachusetts has such a low ratio of citizens to nurses, why Alaska has the highest rate of sexual assaults in the country, why the Joe Everyman in North Carolina lives to be 68 and Jane Everywoman lives to be 76. You can't find the answers in *PC USA*, but maybe finding the questions is enough.

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LEARNING

DISCOVERIES

DAVID STANTON

A voice cried out from Matilda Maxima, my brother's constant travel companion, "Left door is open! Left door is open!" "Fuel level is low," interjected her Parsec friend just as a new onslaught of space aliens began their attack. "Fuel level is low. Fuel level is low," repeated Matilda as if mocking our inevitable demise. "*A*—apple. *B*—bicycle. *C*—cat," babbled Stickybear, obviously overcome with fear.

Cousin Mac, forever imperturbable, began quoting profound words of wisdom from the ancient sages: "Why not start your own BBS? Parents can even include their own word lists in custom lessons. Every year readers eagerly await . . . the basic failing of Ma Bell," he advised. The vaguely familiar words didn't make much sense, but they provided a feeling of comfort, and we imagined there must be deep and eternal truths hidden within them somewhere.

All these utterances came not from human friends but from microchips and computer software. Some of it, many of us would rather not hear. Do we really need automobiles that nag? Or talking refrigerators? In day-to-day experience, talking appliances seem to add little to the quality of life. Still, the ability to simulate human conversation can prove useful in many educational applications.

Consider *Listening to Learn*. Developed about four years ago for the ill-fated IBM PCjr, the program is actually a beginner-level word processor. With it, children can write short essays, save them, and print them. What made *Listening to Learn* unique in its day was its ability to speak. The program uses a Street Electronics Echo voice synthesizer to sound out whatever is typed into it. Type *A* and the computer speaks the letter. Enter any word, real or imagined, and the machine attempts to pronounce it. The program even reads an entire text if you wish.

I first encountered *Listening to Learn* at Houghton College's Buffalo Campus. A professor there was studying its effectiveness with preschoolers from three to five years old. Could children learn something about the relationship between written and spoken language through a process of relatively unstructured discovery? The results were encouraging, but several factors kept the program from achieving the success it deserved.

Scholastic's *Talking Text Writer* offers comparable features and is more widely known. In addition, Scholastic publishes two other noteworthy "talkies," *Talking Text Libraries,* a series of talking classics on disk, and a spelling tutor called *Talking Text Spelling.* All three require a compatible speech synthesizer.

Several other publishers have also recognized the advantages of incorporating speech into their software for nonreaders. Children as young as 3 can work independently with Optimum Resources' *Talking Stickybear Alphabet, Talking Stickybear Opposites,* and *Talking Stickybear Shapes.* The company also has talking software for IBMs and Apple II's. The Learning Company's *Talking Reader Rabbit* uses digitized speech to help kindergarten to second-grade students improve their reading, spelling, and vocabulary skills.

Talking software can help older students with language-related learning problems, too. According to a recent press release, Optimum Resources has been awarded a grant to develop software that uses voice synthesis and voice recognition capabilities to help 8- to 13-year-old dyslexics learn to read. When released, the programs will run on IBMs and compatibles connected to additional hardware from Street Electronics.

SOME SOFTWARE SPEAKS FOR ITSELF

Laureate Learning Systems specializes in talking language-development software for students with special needs. Many support special input devices for the handicapped: Touch Window, The Power Pad (a touch tablet), and left/right rocker switches. Laureate's products are widely known and highly praised. They're good, and they come with a 30-day satisfaction guarantee.

Even Zenith has recognized the value of communicating by voice with a computer. It has introduced two systems that convert spoken commands into traditional keystrokes for operating all of the system's standard PC-compatible components, making it possible for quadriplegics and other disabled people to perform a wide range of tasks. Voice commands control a telephone-management system where calls can be placed and received, notes can be taken, and phone indexes and directories can be created. A special computer arm picks up heavy books and retrieves documents from the printer.

A home computer with speech capabilities can also assist those with impaired vision. A few months ago, this column mentioned two public domain programs for Macintoshes—*Macintalk* and *CNSay.* The first is a CDEV that gives the Mac a male voice. The second is a simplified word processor that can read any ASCII text file aloud through *Macintalk.* Of course, the process only works with documents stored on Mac-readable magnetic media. Add a scanner and the right OCR software, though, and your Mac could read written documents much like some very expensive specialized hardware you may have seen advertised lately.

Increasingly, educational software speaks for itself! ⊡

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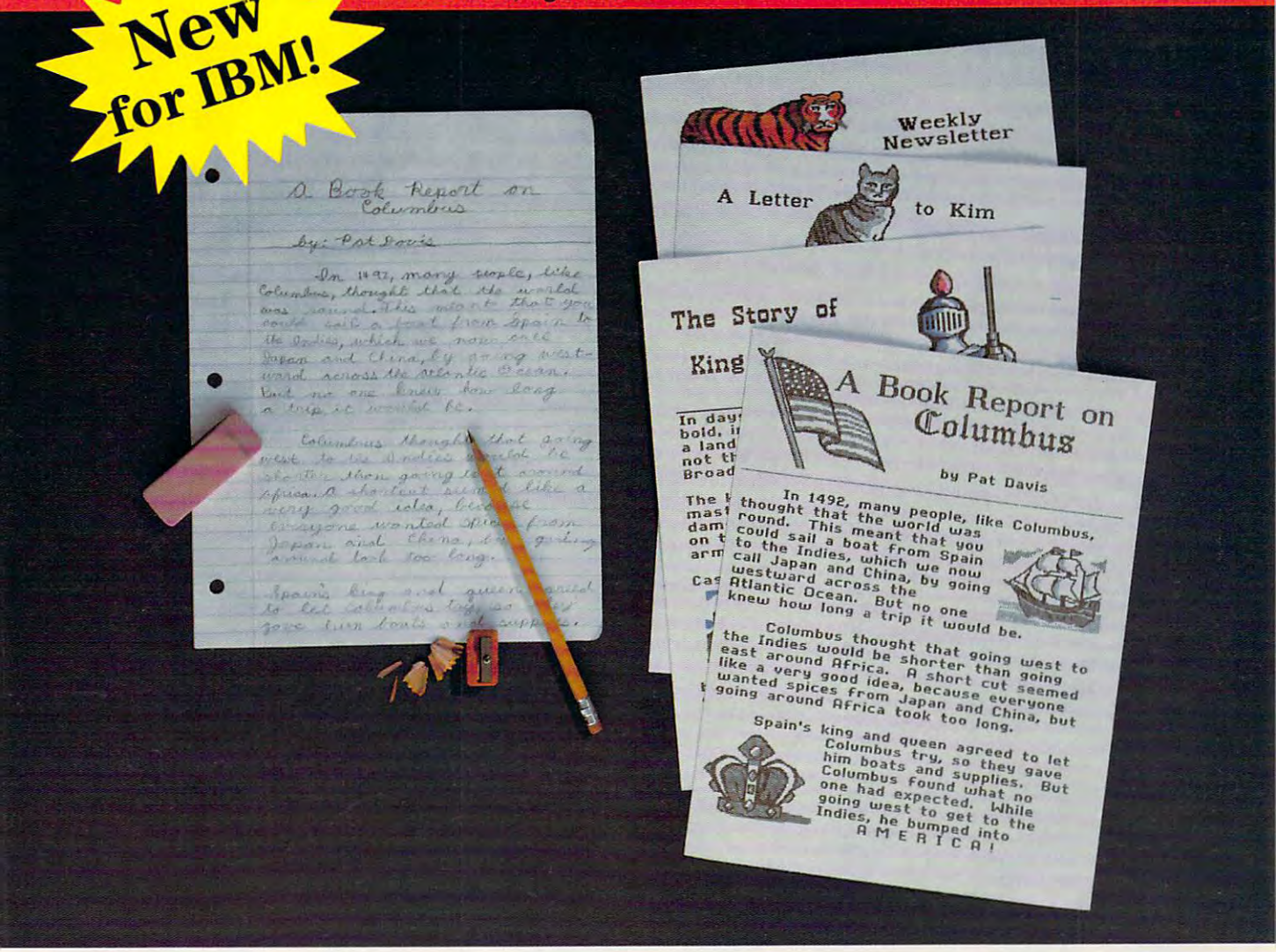

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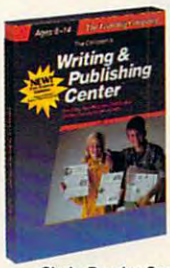

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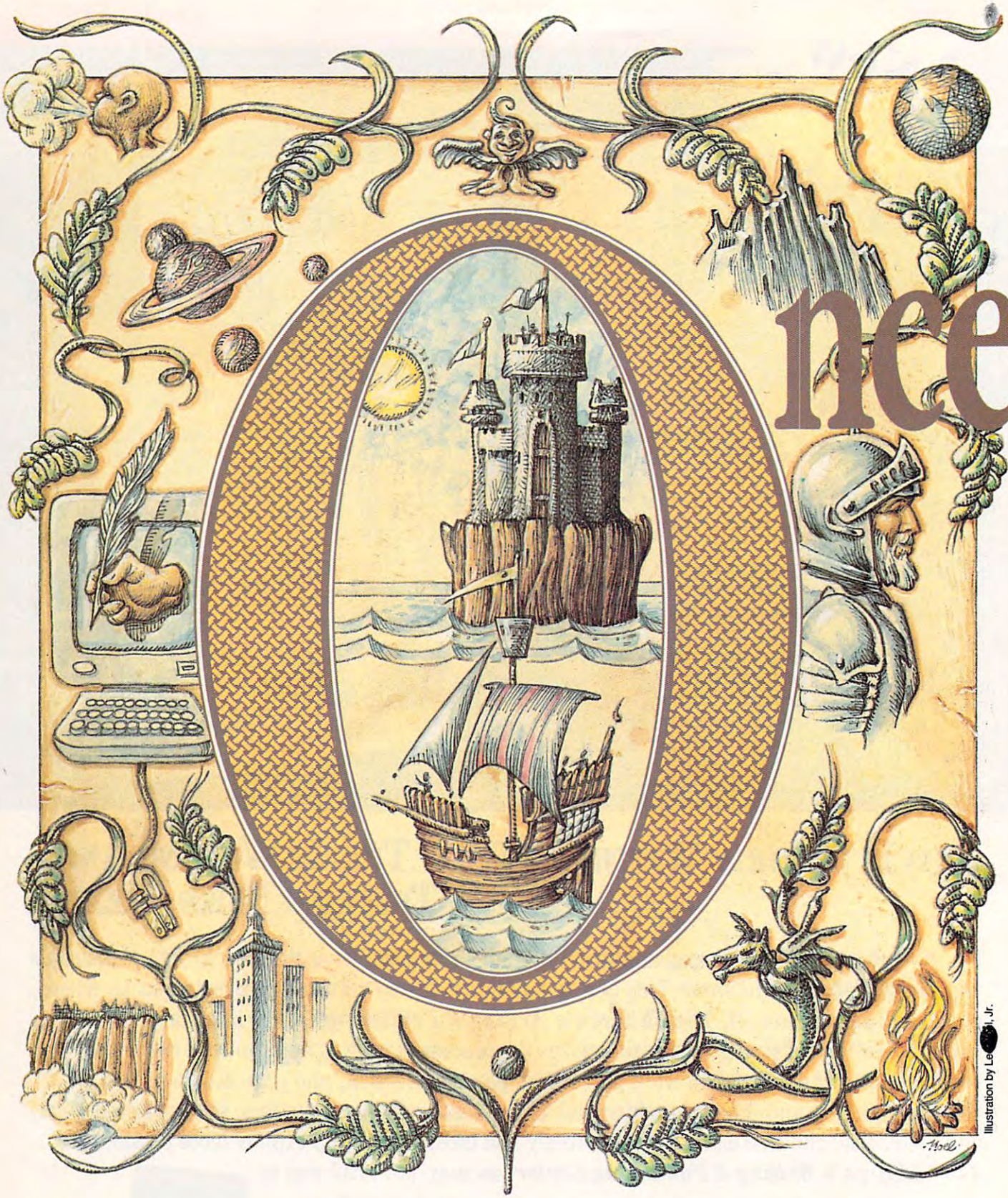

Illustration by Le[illegible]l, Jr.

HELP YOUR KIDS MAKE FRIENDS WITH THE WRITING PROCESS

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Upon A Time

LESLIE EISER

Hunched over the blank sheet of paper, his mind churned with a hodgepodge of misshapen ideas and incomplete thoughts. His palms itched and his fingertips hurt from scrunching up pieces of paper. As he wiped the sweat off of his hands onto his jeans, he muttered angrily, "Three whole paragraphs on my summer vacation! I'll never be able to do it."

Your kids never feel this way, right? Wrong. From a quick letter of thanks to a formal book report or a term paper, free composition can be a painful process. As parents, we want our children to be part of that rare minority that actually enjoys writing. To help your child develop a taste for writing, read on. By using some smart strategies and your home computer, you can help your child develop a taste for writing that will last a lifetime.

Communication First

Start helping your children write by encouraging them to talk. Ask your children to summarize the stories of books they've read, to describe movies they've seen, and to tell stories about what happens at school. Let them know that they have something of value to share, something worth communicating. The more descriptive they are in their verbal summaries, the easier it will be to encourage them to be descriptive in their writing.

Try to give your kids reasons for writing that are unrelated to school. Use letters to friends or grandparents, handmade birthday cards, and even shopping lists to teach children that writing is something you do every day. Have your kids label the photographs of a family trip, make up movie reviews for a friend, or just make up bedtime stories for a younger brother or sister. If your kids have trouble writing bedtime stories, you could tape them telling a story and then write it up yourself. Sometimes kids are very surprised that they can tell a good story.

If you're really serious about improving the writing skills of your children, the very best advice is this: Take the time to read to them. Studies have shown a definite relationship in children between hearing stories read aloud, reading independently, and writing.

A Good Start

When faced with a specific writing task, just getting started can be the hardest part. We've all seen our children gather their notebooks, sharpen their pencils, and then stare at the ceiling for hours while they work up the nerve to actually write something down. Help your children develop good prewriting skills by encouraging them to spend constructive time thinking about their stories before they start to write.

Begin by moving your kids away from the paper. Let them talk about some of the specific events in their stories. Once they've thought of what they want to say, getting it down on paper is much less difficult. Ask leading questions. "Will anything funny happen?" "Is this going to be a scary story?" "What are some words you can use to describe how the character felt at the beginning, in the middle, at the end?" Encourage them to think about a story as a series of events leading to a climax. The trick is not to offer specific answers, but to encourage your youngsters to think about the questions, to generate their own ideas. Try brainstorming for vocabulary

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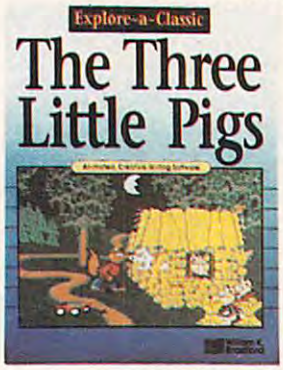
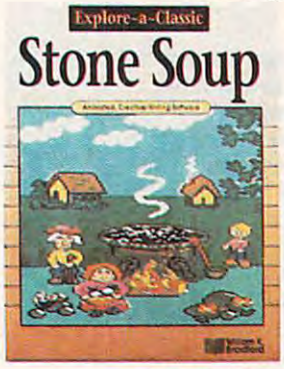
words or helping your young writers think up a good opening sentence that will quickly capture the reader's interest.

Another way to start is by describing the characters in detail. Allow your youngsters time to picture the characters, to imagine exactly what they will be like. Giving the characters names and describing the clothes they will be wearing also helps complete the image. For many children, drawing a picture at this point is an excellent way to solidify their ideas.

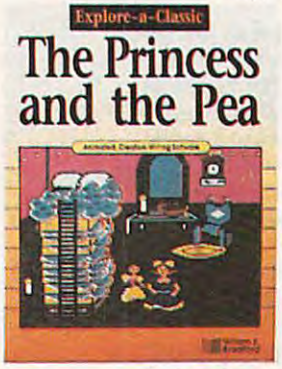


Some writers like to make notes or jot down an outline. Taking notes helps them determine exactly what to communicate at each point in the story, and it reminds them to keep a vision of the audience they are addressing in their minds as they write. Later, these notes will form the backbone of the story.

So where does a computer fit in? It fits very well in two places. First, a word processor alone will encourage children to write more often and in greater quantity. And, while the need for skillful editing hasn't changed, a word processor definitely makes that task far less painful. As an additional benefit, the printed results look reassuringly professional.



Second, story-starting materials, like those you'll find in the software discussed below, can add important structure to a child's work. Since the pressure to think of something to say is reduced through the leading questions and interesting graphics, frustrated writers can relax. Once they stop worrying about what they'll say, ideas will flow unimpeded. You probably won't turn your youngsters into great writers this way, but you'll show them that they can communicate effectively.



Explore-a-Classic starts kids off with an established story line they can modify.

In the last few years, computer programs have attempted to develop writing skills by specifically encouraging the prewriting techniques described above. Unlike word processors that start you off with a blank page, these programs provide a structure for the young writer. Despite their differences in interface and design, they share one thing in common: their purpose. All of these word processors are specifically designed to encourage your children to write, to inspire them to be narrators.

Kid-Friendly Word Processors

Fill-in-the-blank stories, like those found in *Dinosaur Discovery Kit,* from First Byte, can help young readers bridge the gap between writing and reading. First, a simple story with several incomplete sentences appears on the screen. After displaying each sentence, the program prompts your child to select an appropriate word or phrase for the blank. The program modifies the picture above the text so that it represents the new sentence, and then a computer voice reads the entire sentence out loud. When your child finishes the story, you can read it again or print it as a bedtime story. Combining oral and visual effects is a very effective way of reinforcing the connections between what you see, what you hear, and what you write down.

Writing the story down is easier with a word processor designed specifically for young users, such as *Muppet Slate,* from Sunburst Communications; *Children's Writing & Publishing Center,* from The Learning Company; and *Cotton Tales,* from MindPlay. All three sport oversized letters, easy-to-use interfaces, and attractive graphics designed to inspire frustrated writers.

Real beginners often find it easier to use a picture in place of a word. Both *Muppet Slate* and *Cotton Tales* have anticipated this need—pictures and words are interchangeable in these programs. They also offer hidden control options so that you can modify the word lists and limit the choices.

In addition to its graphics capabilities, *Muppet Slate* also contains a sophisticated word processor. There is a powerful fill-in-the-blank mode and an insert/typeover toggle. As in grown-up word processors, the text can be edited interactively anywhere on the screen. *Muppet Slate* also features attractive printouts, complete with a choice of several different border designs.

Children's Writing & Publishing Center is one giant step closer to desktop publishing for kids. It offers a choice of fonts in several different sizes, automatically wraps text around pieces of art, and supports either one- or two-column layouts. The final results look surprisingly professional for such an easy-to-use program. You can't exchange pictures for words, but the simplicity of the interface and the colorful graphics make this program such fun to use that your youngsters will actually want to write more often.

Picture-Perfect Software

With all the fuss being made about right-brained versus left-brained learners, it's not surprising to find a lot of software specifically designed for visually oriented children. In these programs, children create individualized pictures with a modified art program before writing the story. Examples of this kind of software are *Puzzle Storybook,* from First Byte; *Kidwriter Golden Edition,* from Spinnaker; and *Transportation Transformation, Dinosaur Days,* and either package in the Story Starters series, from Pelican Software. In all of these programs, writers start by selecting a background; then they choose clip-art props and familiar characters to complete the picture. Finally, young authors use an independent part of the program to write a description of the picture or to tell a story.

The programs from Pelican provide the most intricate artwork and printing routines. On the other hand, *Puzzle Storybook* and *Kidwriter Golden Edition* offer more sophisticated word

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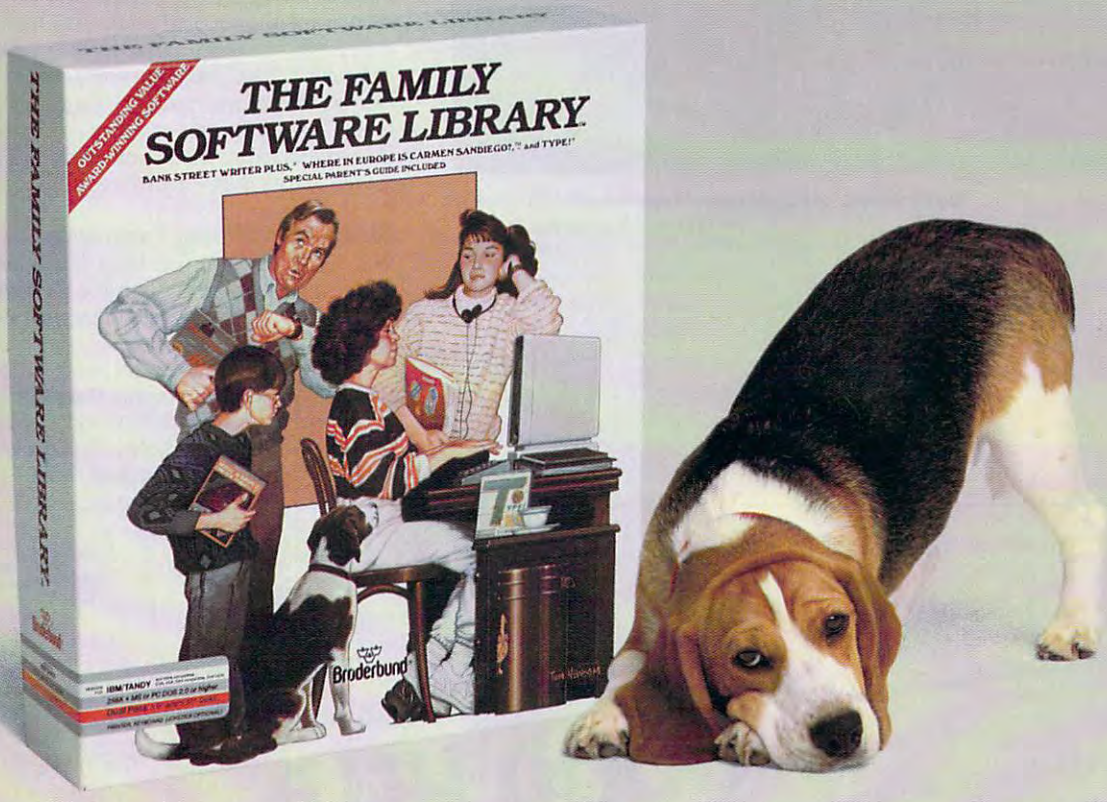
SORRY, SPOT.



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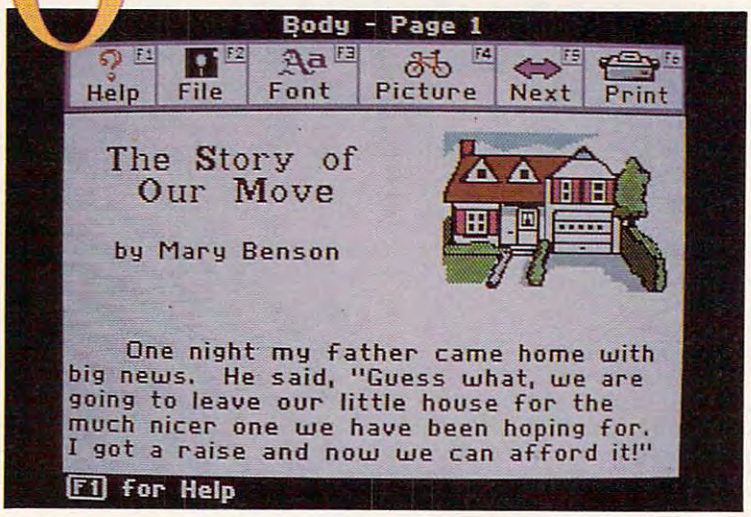

Young writers get professional results with *Children's Writing and Publishing Center.*

processing tools. Most importantly, they keep the text and graphics visually paired. In *Kidwriter Golden Edition,* you can place clip art or text anywhere on the screen at any time and edit it at will. *Puzzle Storybook* shows the graphics and text in separate boxes on the same screen. When the story is finished, *Puzzle Storybook*'s speech synthesizer reads each sentence aloud, a decided plus.

If your children really have trouble thinking of something to say, you can start them out modifying an existing story line. In the Explore-a-Story and Explore-a-Classic series, students begin by reading the original story, which is shown on the screen in a cartoonlike format with animated characters. Next, you encourage your children to change the actors, move the props, and even add text. These programs are very entertaining, but it's easy to spend more time playing with the animated actors than writing about them.

Structured Writing Exercises

The Writing Adventure, from DLM, and *The Railway Snoop,* from Sunburst Communications, provide highly structured writing environments.

The Writing Adventure is an older program that effectively uses graphic storyboards. As young writers explore a large cave, they take notes on what they observe. The program actually checks a notepad to be sure that they are tak-

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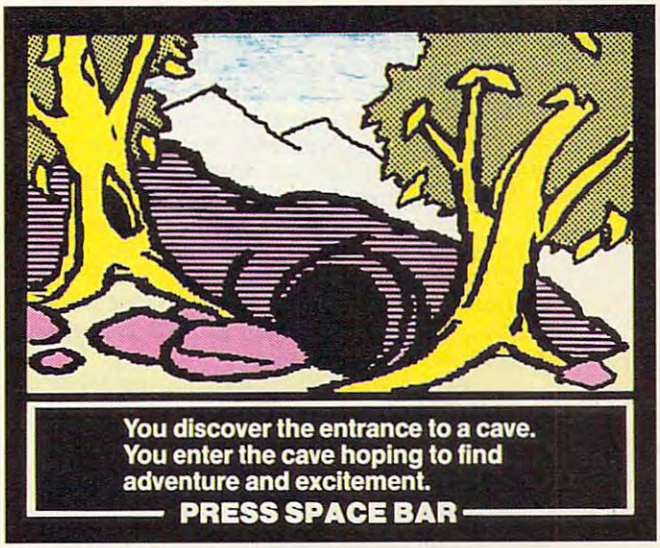
ing adequate notes. It checks the quantity, not the quality, of the recorded observations. The program provides structured questions to make this task easier, and children choose from a menu of branches to get around.

After your young writers visit between 5 and 15 sections of the cave, the program instructs them to write a story using their notes as a guide.

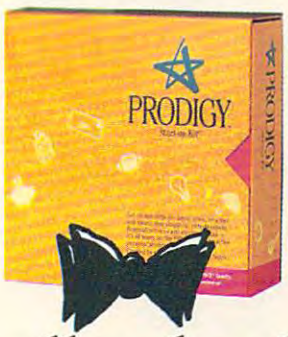
Although the random nature of the branching makes the stories sound disorganized, the concept itself is interesting. The cave is fun to explore, and your children's notes can be quite involved. Even weak writers will spend significant amounts of time creating the notes and then writing and rewriting each adventure.

The Railway Snoop is a companion to *Magic Slate II,* a word processor specifically designed for children. *The Railway Snoop* stands out from similar programs because it carefully focuses and directs young writers while it leaves room for free composition. It sacrifices neither structure nor creativity, so your child gets the advantage of both.

Through prompt boxes that appear only on-screen, children write multichapter adventure stories. Extensive teaching materials include cut-out models of railway stations and instructions for building an entire railway yard. *The Railway* Snoop encourages youngsters to write more descriptively, to include personalized elements that add interest to a narrative, and to think about a long story as a sequence of related events. ▷



Children learn about gathering notes and writing stories in *The Writing Adventure.*



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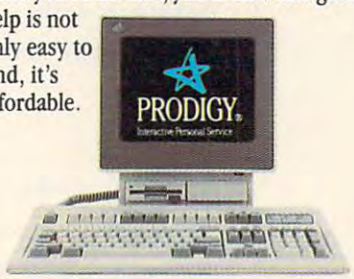

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Once Upon A Time

From Cartoons to Branching Stories

Sometimes the best way to convince youngsters to write is to make them think that they aren't writing at all. Several writing programs disguise themselves as art programs: *Cartooners,* from Electronic Arts; *Create with Garfield, Deluxe Edition,* from DLM; and *Story Tree* or *Super Story Tree,* from Scholastic.

In *Create with Garfield,* your children place Odie, Jon, and Garfield in different poses and different situations. Students practice their writing skills by adding text balloons to each frame, composing short stories similar to those they see every day in the newspaper.

Cartooners effectivly uses the Apple IIGS by letting kids design animated cartoons from a selection of actors, backgrounds, and special effects. The results can be very attractive, and, in designing a cartoon, the young author is practicing important communication skills that can later be transferred to paper.

Super Story Tree provides writers with the structured framework of a branching story. Tremendously open-ended, the combination of graphics and sound capabilities make this program an attractive alternative for older children who still can't commit more than the minimum effort to their writing.

The End

Is a computer necessary for encouraging kids to write? No, but there are many good reasons to introduce a young writer to a word processor and some story-starting ideas. Whatever we can do as parents to relieve the anxiety of our children, to encourage them to communicate both orally and in writing, is going to help them be more successful in the future. To accomplish that goal, let's get writing. ⊡

Leslie Eiser has three children and lives in Montreal. She has many years of experience as an educator, a computer user, a writer, and a mom.

Cures for Writer's Block

Cartooners
(Ages 5–14)
Apple IIgs 1MB—$59.95

Electronic Arts
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San Mateo, CA 94404
(800) 245-4525
(415) 571-7171

Children's Writing & Publishing Center
(Grades 8–14)
Apple II with 128K—$59.95
IBM PC and compatibles with 384K—$69.95

The Learning Company
6493 Kaiser Dr.
Fremont, CA 94555
(800) 852-2255
(415) 792-2101

Cotton Tales
(Ages 4–8)
Apple II—$49.95
IBM PC and compatibles—$49.95

MindPlay
3130 N. Dodge Blvd.
Tucson, AZ 85716-1726
(800) 221-7911
(602) 322-6365

Create with Garfield, Deluxe Edition
Apple II—$39.95
Commodore 64/128—$39.95
IBM PC and compatibles—$39.95

The Writing Adventure
Apple II—$59.95
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DLM
P.O. Box 4000
One DLM Park
Allan, TX 75002
(800) 527-4747
(800) 442-4711 (in Texas)

Dinosaur Days
Apple II—$39.95
IBM PC and compatibles—$39.95
Macintosh—$39.95

Dinosaur Days Plus
Apple II with 128K—$49.95

Story Starters: Science
(Ages 5–14)
Apple II with 128K—$49.95

Story Starters: Social Studies
(Ages 5–14)
Apple II with 128K—$49.95

Transportation Transformation
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Apple II—$39.95

Pelican Software
21000 Nordhoff St.
Chatsworth, CA 91311
(800) 247-4641
(800) 222-7026 (in California)
(818) 341-9611

Dinosaur Discovery Kit
(Ages 3–8)
Amiga—$39.95
IBM PC and compatibles with 512K and color monitor—$39.95
Macintosh—$39.95

Puzzle Storybook
(Ages 3–8)
Amiga—$39.95
IBM PC and compatibles with 512K and color monitor—$39.95
Macintosh—$39.95

First Byte
3100 S. Harbor Blvd.
Suite 150
Santa Ana, CA 92704
(800) 523-8070
(714) 432-1740

Explore-a-Classic
Apple II with 128K—$49.95
IBM PC and compatibles—$49.95

Explore-a-Story
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Lexington, MA 02173
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Kidwriter Golden Edition
(Ages 6–10)
Apple IIgs with 768K—$49.95
IBM PC and compatibles with 5¼-inch drive—$49.95
IBM PC and compatibles with 3½-inch drive—$54.95
IBM PC and compatibles (combination package with 5¼- and 3½-inch disks)—$59.95

Spinnaker Software
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Cambridge, MA 02139
(800) 826-0706
(617) 494-1200

Muppet Slate
(Ages 5–7)
Apple II—$75.00

The Railway Snoop
(Ages 11–13)
Apple II with 128K—$59.00

Sunburst Communications
39 Washington Ave.
Pleasantville, NY 10570
(800) 431-1934 (in the United States)
(800) 247-6756 (in Canada)

Story Tree
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Apple II—$32.95
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New York, NY 10003
(800) 541-5513

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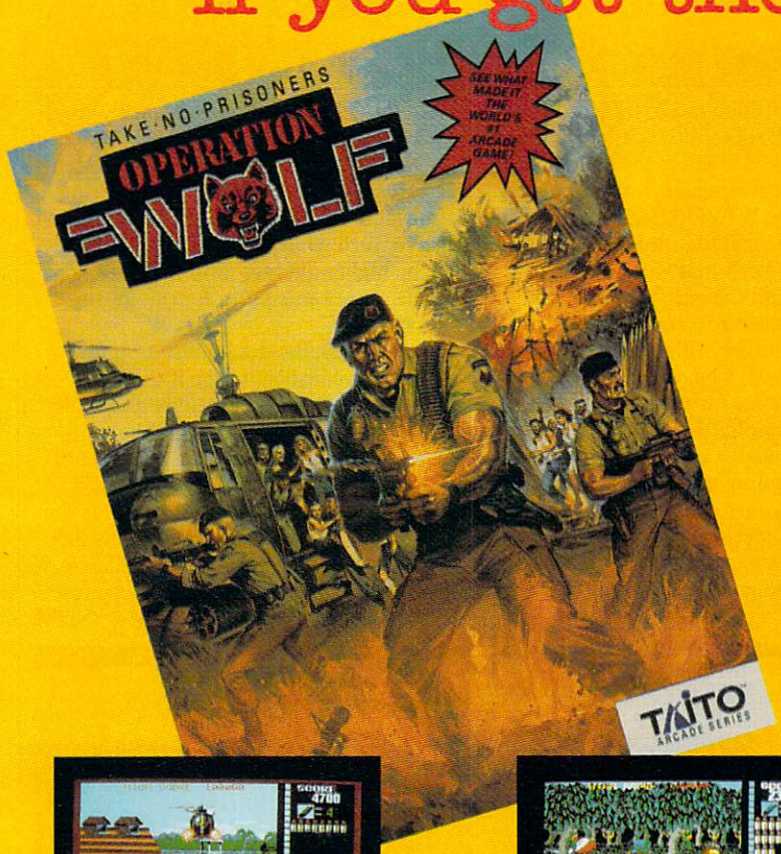

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HOMEWORK

HINTS AND TIPS FROM OUR READERS

Nothing encourages success as much as success itself. This is as true for some school children as it is for most entrepreneurs, so try using the spreadsheet, an old favorite of the business world, to get your kids motivated in the education world.

Start by setting up a spreadsheet to keep track of grades. If you have more than one child, you can set up their scores on the same spreadsheet. However, don't try to compare the kids' scores against each other: The assignments won't be comparable and the subsequent rivalry wouldn't be constructive.

For each child, name the spreadsheet columns after the assignments you're tracking. For example, call them Addition Test, Subtraction Test, Fractions Project, and so on. You may not know how many tests your children will take, but you can always add new columns as you go. Make sure to name the row after the child being tracked.

To get a graph for the performance of each child, follow the charting instructions included with your spreadsheet. Use the line graph, as it presents a history of your child's performance, showing improvements and declines.

Before you start this project, consider whether your child would respond well to this kind of motivation. Troubled students—those with learning disabilities or emotional stress—might not benefit from this kind of evaluation.

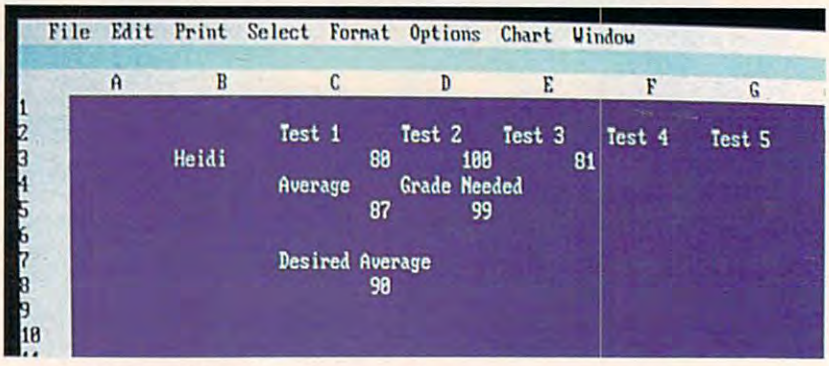
Aiming High

For more motivation, try calculating what test score your child needs to earn in order to jump into the next grade range. For example, if I have an 87 average after three tests, what would I need to make on my fourth test in order to have an A average?

You can use the same spreadsheet you set up to chart your child's progress. Just below the row of test scores (mine are 80, 100, and 81), set up a cell to hold the child's average. I used cell C5. Select the cell that will hold the average (C5, in our example), and type =AVG(C3:Z3). In this case, C3 is the cell that holds my first score, Z3 is the cell that will hold my last score, and the colon instructs the spreadsheet to average the information in any filled cell between those two points. The cell, Z3, is an arbitrary choice for the last cell; I'm just assuming that I won't have more than 24 grades. It's easy enough to change this by going into the formula and adding more cells to the range. The spreadsheet will count the filled cells in that range (that is, only the cells that hold grades) and use that number in the averaging function.

Now my average shows in cell C5. In this example, my average is 87 after three tests. I want my average to be 90 or better, so I select cell C8 and type 90. If I needed to move from a C average to a B, or if my teacher's scale put an A at 94, I could move to cell C8 and change the number to fit those needs. To figure what score is needed to move from an 87 to a 90 average (which would move my grade from a B to an A), select cell D5 and type =C8*(COUNT(C3:Z3)+1)−SUM(C3:Z3). In this case, C8 holds the grade point average I need to earn an A. The COUNT function counts all filled cells in the range (C3:Z3), much as the AVG function did. We added 1 to account for my next test. That half of the equation figures out what total score I need to bring up my average to 90. The second half totals my current test scores. In short, I'm subtracting what it took to make my current average from what it would take to make the higher average, and the answer is the score I must aim for (99 in this example).

Check the documentation for your spreadsheet to see if the AVG and COUNT functions are available to you. If they're not, you'll have to write your own functions. That's not too hard: Simply type =SUM(C3:E3)/3 for the average, where C3 is the first cell that holds a grade, E3 is the last, and 3 is the number of cells. For the score that would improve your letter-grade average, type =C8*4−SUM(C3:E3), where C8 refers to the desired average, 4 is the number of tests you've taken plus the one you're about to take, and (C3:E3) refers to the scores for the tests you've already taken. The only drawback to this method is that you'll have to change the formula each time your child takes another test.



A simple spreadsheet formula figures the score you need on your next test.

Heidi E. H. Aycock
Chapel Hill, NC

Do you have advice that makes a better teacher out of your PC? If so, we'd like to hear from you. Send your tip, no matter how brief, to COMPUTE! Feedback, P.O. Box 5406, Greensboro, North Carolina 27403. If we publish your suggestion, we'll send you a gift. ⊡

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