

COMPUTE!

The Leading Magazine of Home, Educational, and Recreational Computing

COMPUTE!
Celebrating Our
10TH YEAR

SIGHTS & SOUNDS!

YOUR COMPUTER CAN CREATE HOLLYWOOD HOME VIDEOS

Step-by-Step Guide to Titling, Animation, & More

MOTOWN MUSIC

6 Top Products Put Digital Sound at Your Fingertips

PLUS! SPECIAL REVIEWS ON

- ▶ VCR Companion
- ▶ Home Video Producer
- ▶ Yamaha C1 Music Computer



USA \$2.95
Canada \$3.50

02193

1 2

0 71486 02193 3

THE GAMES:™



SUMMER, WINTER,



You're in Seoul, Korea sweating alongside the world's greatest athletes. Or the Canadian Rockies facing finely-tuned challengers who've waited a lifetime for a shot at the gold.

You're geared up. You're set. You're playing The Games.

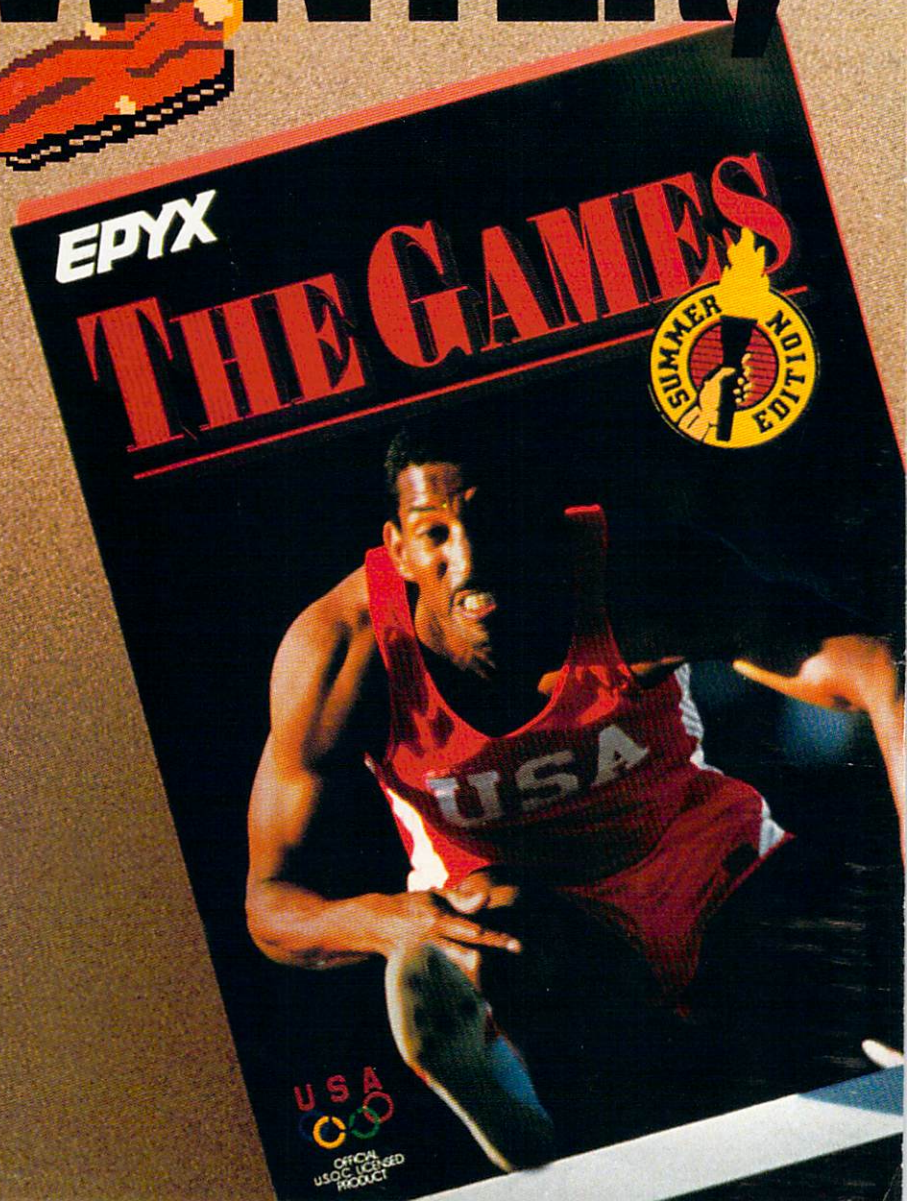
SUMMER EDITION:
Eight events that test your power, skill and guts.

Relive the heart pounding excitement experienced by the 1988 U.S. Olympic Team.

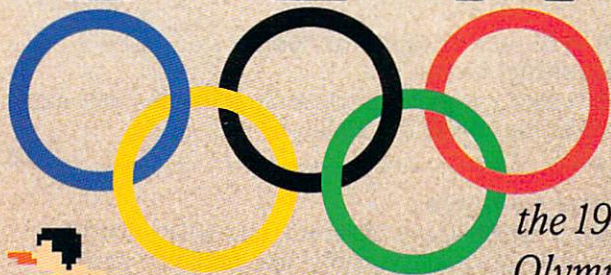
Sprint down a 110 meter track, clearing hurdles in a fraction of a second. Or jam your pole in the planting box and vault over a cross bar.

Hold a handstand in the Rings competition, straining every muscle in your arms. Follow up with a perfect triple twist in the diving event.

Then try for another medal or two in Sprint Cycling, HammerThrow, Uneven Parallel Bars or Archery. It's your chance to make history.



U S A



The only computer games to earn an official license from the 1988 U.S. Olympic Team.

WINTER EDITION:

Set world records without leaving home.

Race down a snowy slope or jump off one. Ski a slalom or cross-country course. Speed skate, figure skate, cruise the luge at 95 mph. Then see what the judges think of your heroic efforts.

To keep your pulse racing regardless of temperature, The Games feature exciting sound effects, dramatic camera angles, first person views and 3-D imagery.

Plus the traditional pageantry — colorful flags, opening, closing and awards ceremonies — staged in realistic settings.

Take on the computer or your friends. (Up to eight can play, each representing a different country.) And to make the action even more heated, play with an EPYX high performance joystick.

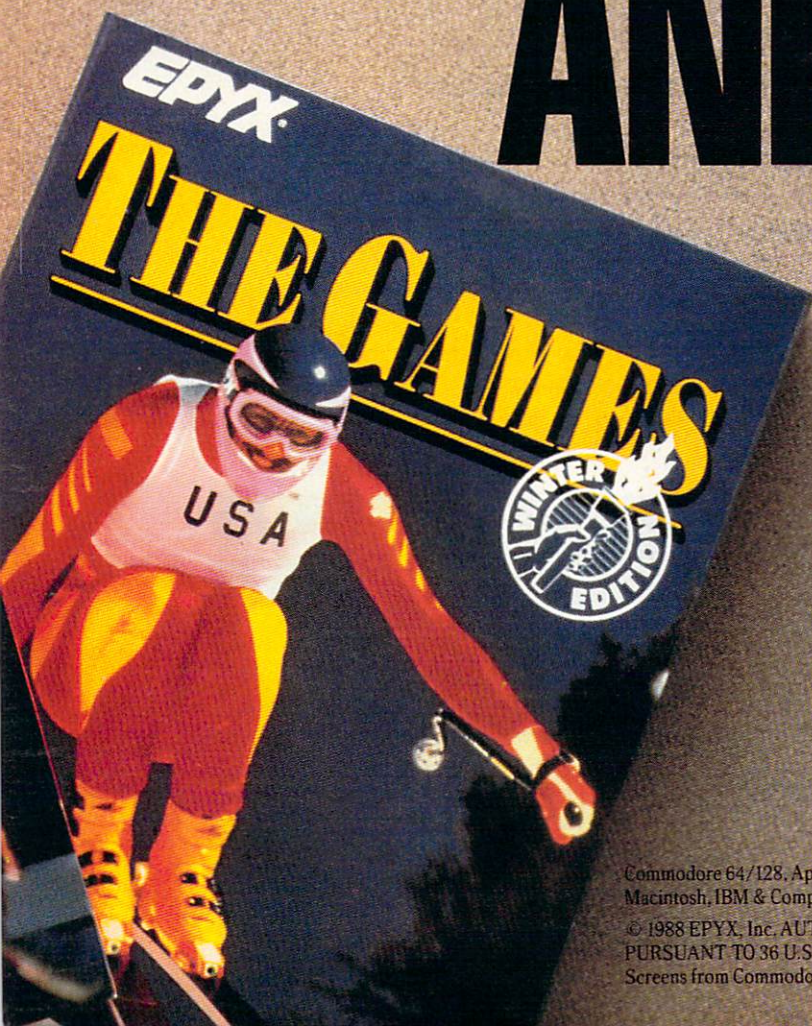


SPRING

AND FALL.



You'll find that The Games will keep you in the mountains, in the water and on the edge of your seat all year long.



Commodore 64/128, Apple II & Compatibles, Macintosh, IBM & Compatibles, Amiga.

© 1988 EPYX, Inc. AUTHORIZED PURSUANT TO 36 U.S.C. SECTION 380. Screens from Commodore and IBM.

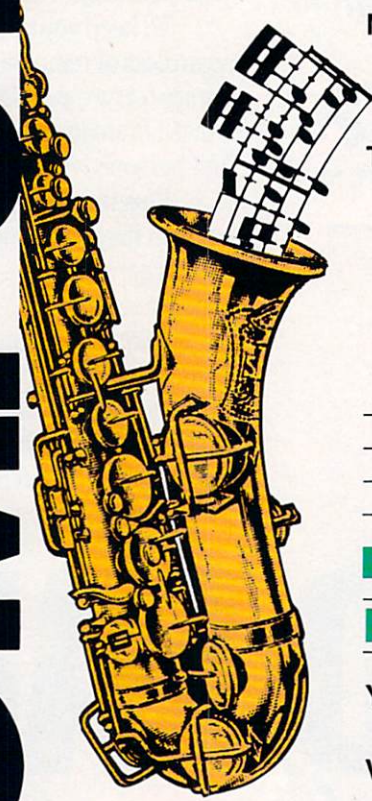
EPYX®

COMPUTE!

DECEMBER
1988

VOLUME 10
NUMBER 12
ISSUE 103

The Leading Magazine
of Home, Educational, and
Recreational Computing



FEATURES

How to Be a Movie Mogul with Help from Desktop Video

Today's hottest computer application adds the Hollywood look to your home videos. A step-by-step guide.

Steven Anzovin _____ **18**

Music by the Numbers

Keyboards, synthesizers, digitizers, and MIDI—the top products that turn your computer into an audio studio.

Joey Latimer _____ **40**

Time to Give:

COMPUTE!'s Holiday Gift Guide

Dozens of gifts—from the unique to the practical—for the computer holidays.

Edited by Heidi E. H. Aycock _____ **30**

REVIEWS

Yamaha C1 Music Computer

Joey Latimer _____ **74**

VCR Companion

Duncan Teague _____ **78**

Home Video Producer

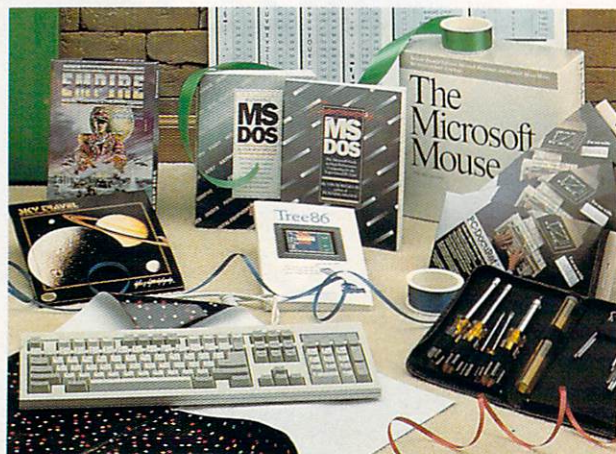
Ed Ferrell _____ **85**

SideKick Plus

Keith Ferrell _____ **86**

Constellation Software

Rhett Anderson _____ **90**



COLUMNS

Editorial License

Apply the Mom and Dad Factor and you'll help everyone who owns a home computer. / *Gregg Keizer* _____ **4**

News & Notes

The Gang of Nine steps out, IBM's Son of AT (a step back?), and the Flintstones step into your computer. / *Editors* _____ **6**

Gameplay

Put together a hilarious horror movie and skillful storytelling to get a great game. / *Orson Scott Card* _____ **12**

Impact

It's the dawn of the Show-Me Age—electronic presentations make a powerful visual message. / *David D. Thornburg* _____ **14**

Discoveries

Terrific computer gift ideas that bring learning, and more, home. / *David Stanton* _____ **96**

Levitations

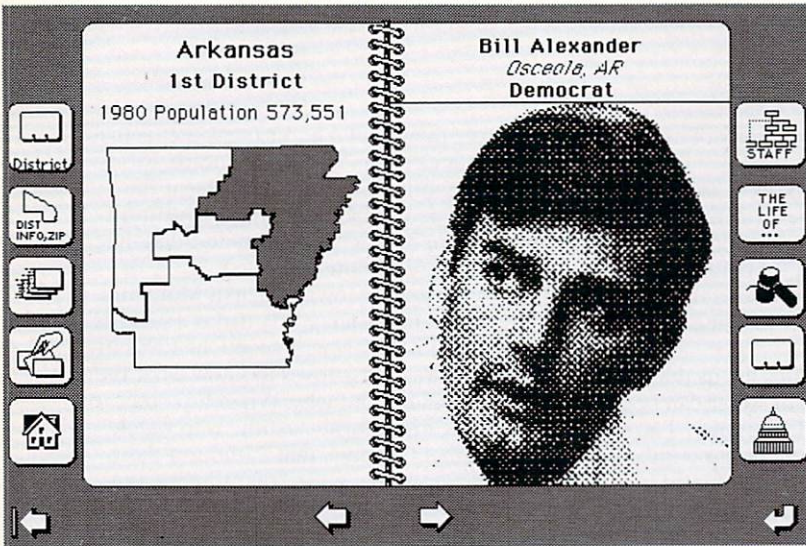
Is nothing sacred? What's wrong (and maybe right) with every home computer. / *Arlan Levitan* _____ **104**

Letters

Old PETS never die. / *Editors* _____ **16**

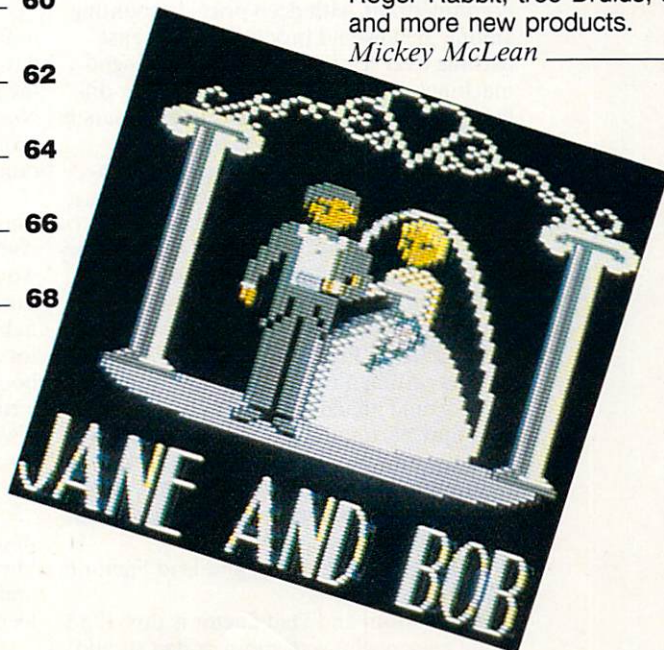
New Products!

Roger Rabbit, tree Druids, alarm bells, and more new products. / *Mickey McLean* _____ **49**



COMPUTE! SPECIFIC

MS-DOS	
<i>Clifton Karnes</i>	58
64 & 128	
<i>Neil Randall</i>	60
Apple II	
<i>Gregg Keizer</i>	62
Amiga	
<i>Rhett Anderson</i>	64
Macintosh	
<i>Sharon Zardetto Aker</i>	66
Atari ST	
<i>David Plotkin</i>	68



Cover photo © 1988 by Mark Wagoner.

editorial license

GREGG KEIZER



The Mom and Dad Factor— My Way to Make Sure That Home Computing Spreads

There are not that many of us. Not really.

We may think, because we have one or maybe want one, that everyone shares our passion for personal computers. Those of us who work for computer magazines are particularly prone to this thinking since we often have not just one computer at home, but several.

But recent estimates tell us that no more than 20 percent of American households have a personal computer. The number of computers in homes has climbed over the years, of course, recently fueled by inexpensive MS-DOS machines, but it's not anywhere near the level of, say, VCRs. The fact is that there are too few people with personal computers in the one place where the machines can have the most impact on their lives—in their homes.

Maybe you're thinking that it doesn't matter if everyone has a computer. You have yours, and that's all that matters. Right?

Wrong. It's to our benefit to get as many personal computers into as many homes as possible. We should be, in essence, home-computing salespeople. The reasons are self-serving and the motivations selfish.

With numbers come strength. Imagine that as many households had a computer as now have VCRs. VCR prices are aggressively competitive, with deep price discounting among the low-end products and intense battling over features among the high-end machines. Computers wouldn't be any different—the current price and feature wars in the PC-compatible world are the proof.

Imagine software stores in the numbers now common for video-rental shops. That would be a natural if homes had as many computers as VCRs. The appetite for software—especially entertainment and educational packages—would be nearly as voracious as today's videotape feeding frenzies at 5:00 on Friday afternoons.

So getting the American masses a machine would arguably help us all by driving down prices, upping features, and making software more accessible. It makes sense to convince our friends, neighbors, and relatives that a personal computer is a good addition to any home. But how?

By keeping the Mom and Dad Factor in mind, that's how.

The Mom and Dad Factor is this: Find some reason why *your* mom or dad should have a personal computer, and you'll have a reason you can use with dozens of others to

convince them that a home computer is the consumer electronic gizmo of choice. Moms and dads, millions of them, represent the untapped pool of potential buyers just waiting for a solid, practical, mom-and-dad-like reason to buy a home computer.

I've found my own personal Mom and Dad Factor, for instance. My dad is a weather freak. Born with farmer's blood, he loves to watch the weather—loves to know what the weather will be, and why. When he comes to my house, his favorite pastime is to watch the Weather Channel, that 24-hour-a-day cable program that gives you more weather info than Willard Scott ever heard of.

Now there's a way for my dad, and others like him, to have almost instant access to detailed weather information. Two telecommunications services specialize in weather data: Metacommet offers its *Accu-Weather Forecaster*, while WeatherBank has its *WeatherBrief*. Both let you download weather data and create maps and charts so that you can track thunderstorms, locate low-pressure areas, and chart cloud cover. *WeatherBrief* has the more graphically involved maps and charts, and it provides more esoteric information. *Accu-Weather Forecaster*, on the other hand, is simpler to use. Both services charge reasonable connect-time rates, so it doesn't cost much to frequently update the data.

My dad would love this stuff. He'd sit in front of the computer at least once a day—twice on the weekends—and call up the patterns of warm and cool air over the Northern Plains, watching the fronts approach on his screen, and anticipating the rain for his trees and crops.

And though this weather forecasting may be the only reason he'd have to use that computer at the start, that probably wouldn't last for long. Once a personal computer has its foot in the door, it has a nasty habit of making itself useful, then necessary, for all sorts of things. Like helping keep the books for my dad's Christmas tree farm, or letting him fly an airplane—something he always wanted to do, but never found the money for—with a flight simulator. In other words, typical home computing.

We'd add him to the list of home computer users. One down, millions to go. I know this will work for me, that my Mom and Dad Factor can convince my computer-leery parents to let one in the house.

Come up with your own Mom and Dad Factor, use it, and make home computing easier for all of us. □

NOW SPEND LESS TIME KEEPING YOUR BOOKS — AND MORE TIME BUILDING YOUR BUSINESS.

Introducing Andrew Tobias' Checkwrite Plus™: Check to ledger to budget to tax category — in a keystroke.

"I spend too much time on bookkeeping!" That's the complaint we hear again and again from managers of growing businesses. And the reason we're introducing Andrew Tobias' Checkwrite Plus.

Checkwrite Plus makes check writing and bookkeeping faster and easier

When you write a check or receive income, your checkbook balance automatically knows, your budget automatically knows, your cash flow projection automatically knows, and the transaction is recorded in the proper tax category — all in a keystroke!

You can print a month's worth of checks in seconds and balance your checkbook in a breeze.

You can recall transactions by date, check number, amount, or payee — in about as much time as it takes to read this sentence.

You can manage your accounts payable and receivable, track and analyze loans, even print amortization schedules.

And with your financial data base at your fingertips, you can monitor and print essential reports like budget vs. actual spending, P&L, cash flow, and more — faster and easier than ever before.

More time to build your business

Checkwrite Plus brings your financial routine under time-efficient control. It pinpoints spending trends (and areas where you're overspending) which would take forever to uncover by studying your checkbook.

It gets you ready for your accountant (and saves you money on accounting time charges). But most important of all, Checkwrite Plus gives you more time to do the things you need to do in order to build your business.

Time-saving features the competition can't match

Only Checkwrite Plus is written by financial expert Andrew Tobias, whose make-it-simple style gets you started fast. (You won't even need the manual.)

Checkwrite Plus performs more bookkeeping functions than other check writing programs. It can handle multiple bank accounts, print invoices, and handle credit cards, unlike the leading competition.

Checkwrite Plus performs bookkeeping functions more thoroughly than other programs. You get income and expenses by tax category — not just a list. You get more complete budgeting and cash forecasting, and better graphics. Reports are a whole lot easier to create.

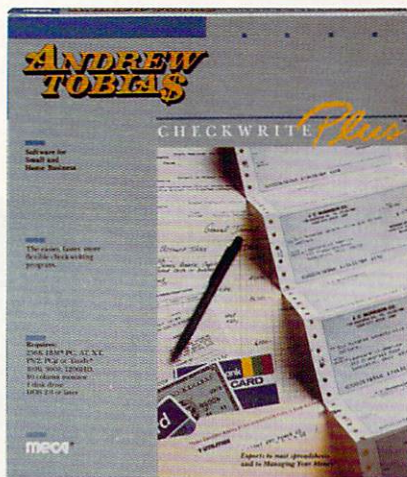
Checkwrite Plus is more flexible. You can quickly **customize** the program to meet your needs, right down to the check layout. (Our leading competitor locks you into his check layout.)

Want to export data to 1-2-3? It's free and easy with Checkwrite Plus. (The other guys charge extra for a transfer utility.)

And Checkwrite Plus easily exports to Andrew Tobias' **Managing Your Money**. (It's always nice to know that you can trade up to more comprehensive software without having to re-enter all your data.)

For Business People Who Write Checks

If you manage a small business, are an independent contractor, a consultant, doctor, property manager, or accountant, Checkwrite Plus will prove a valuable tool that frees your time. Its speed and simplicity make it great for personal use too.



Introductory Offer

For a limited time you can purchase Checkwrite Plus for only \$49.95. That's \$20.00 off the regular price of \$69.95. Act now! Offer expires Jan. 31, 1989.

Money Back Guarantee

If Checkwrite Plus does not make your check writing and bookkeeping faster and easier, return it to us within thirty days for a full refund.

See your dealer

or call Toll-Free to order:

1-800-835-2246 ext. 12

...or mail the coupon today.

Requires:

256K IBM® PC, AT, XT, PS/2, PCjr or Tandy® 1000, 3000, 1200HD • 80 column monitor • 1 disk drive • DOS 2.0 or later
Not copy protected.

COM

SEND TO: **MECA VENTURES, INC.**
355 RIVERSIDE AVENUE
WESTPORT, CT 06880

1-800-835-2246 x.12

THIS IS THE ORDER OF _____ + \$2.50 shipping & handling
Name \$49.95

Address _____

City _____ State _____ Zip _____ Phone _____

Credit card # (V, MC, AMX) _____ exp. 5 1/4" 3 1/2"

YES, I want to spend less time on bookkeeping and have more time to build my business!
Send me **Checkwrite Plus** at the special introductory price of \$49.95 + \$2.50 shipping & handling. CT residents add \$3.75 sales tax.

MEMO: Allow 4-6 weeks for delivery. Offer expires 1/31/89.

Signature required _____



© 1988 • MECA

355 RIVERSIDE AVENUE, WESTPORT, CT 06880

news & notes

AppleFest Fallout

Bad news, good news. AppleFest, like the joke, had a little of both.

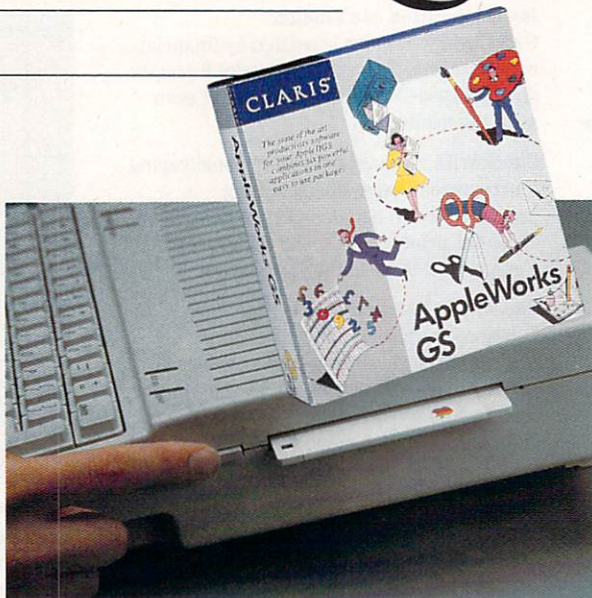
Overshadowed by price-hike announcements for the Apple IIGs, AppleFest in San Francisco gave thousands of users the chance to see the newest and the flashiest Apple II software and hardware.

Even before the show started, talk of Apple's new pricing dominated conversations. The Apple IIGs jumped to \$1,149, a 15-percent increase, while the RGB monitor normally sold with the computer went up \$100, a 20-percent hike. Apple attributed the price increases to higher costs for DRAM, the memory chips used in the computers. The fact that DRAM prices have begun to stabilize, however, combined with Apple's raising monitor prices, created a healthy bit of skepticism about Apple's motives.

Software publishers, in particular, were unhappy about the hikes. Bill Campbell, president of Claris, the publisher of *AppleWorks* and *AppleWorks GS*, said that he was concerned. "The price increases can't help," said Campbell. "They [the price increases] can't help us. Market share is critical to us."

Yet AppleFest participants managed to forget the bad news long enough to witness the debut of a new computer, the Apple IIc Plus, a replacement for the veteran IIc. The IIc Plus comes equipped with a faster microprocessor, an internal power supply, and an internal 3½-inch disk drive.

The other Apple announcement was the new operating system, GS/OS. Written specifically for the IIGs, it offers faster Finder operation,



faster disk access, and several enhancements that will be of use to developers.

As always, third-party publishers and manufacturers made the most noise at AppleFest.

Claris used the show to announce its recent acquisition, *AppleWorks GS*. The six-in-one integrated package combines word processing, spreadsheet, database, page-layout, graphics, and telecommunications modules in one program for the IIGs. Though the entire package is priced at \$299, Claris is offering an upgrade from *AppleWorks* for as little as \$99. If *AppleWorks GS* is as powerful and as fast as the original, it could sell a lot of Apple IIGs computers. (In fact, one rumor circulating at the show was that Apple may be planning on bundling *AppleWorks GS* with the computer.)

Desktop publishing software is still hot for the Apple II, and several companies, including Springboard (*Springboard Publisher 2.0*), Milliken (*Medley*), and Berkeley Software (*geoPublish*) released or announced new versions or new products.

Apple II owners have been jealous of the Macintosh for many reasons, not the least

of which is *HyperCard*, the hypermedia software. Two products are intended to reproduce on the Apple II what *HyperCard* has done for the Mac. *Tutor-Tech*, from TechWare, runs on 128K Apples and seems best-suited for creating hypermedia lessons for the classroom. Roger Wagner Publishing's *HyperStudio*, a program not ready at the time of the show, is a IIGs-specific program that will make excellent use of the machine's sound capabilities.

Even though it is not particularly supported by Apple, entertainment software packed them in at a number of booths, including Activision's, where hordes of teenagers played *Rampage* in a high-point contest for a IIGs. Epyx, another entertainment specialist in the Apple arena, showed its newest games, which include *Dive Bomber* and *The Games: Summer Edition*. Electronic Arts kept eyes glued to the screens with *Zany Golf* and *Skate or Die*, two fast-action packages for the under-20 gaming crowd. And Spectrum HoloByte got Apple IIGs owners addicted to its recent release of *Tetris*, the smash hit from the Soviet Union that's simple to play but difficult to

master.

Apple II remains a major power in the schools, MS-DOS inroads notwithstanding, and educational software releases reflect that muscle. The Learning Company's *Children's Writing and Publishing Center*, a desktop publishing-like program, is simple to use and creates colorful reports and newsletters. Davidson unveiled IIGs versions of two of its best sellers that use digitized speech, *Math and Me* and *Reading and Me*. The most innovative learning software, though, was from Tom Snyder Productions. Aimed squarely at preschoolers' parents, the self-termed "lapware" is a series of charming electronic storybooks that children and parents use together, with choices and paths unfolding as the program tells its tale.

Speed is at a premium in Apple II computing, even on the IIGs, so it's not surprising that Applied Engineering's biggest crowds were around the Transwarp GS, an accelerator board for the machine.

Not everything was Apple II-oriented at AppleFest—not with Apple stressing the Macintosh as a possibility for the home. Brøderbund let players try *Shufflepuck Cafe*, an air hockey-style game that brings back memories of the original *Pong*. Electronic Arts demonstrated its ultra-high-end graphics program, *Studio/8*, to oohs and aahs all around.

Nearly 30,000 attendees, another record, got to see the best and the brightest for the Apple II at AppleFest. Which products come through the holiday selling season unwrapped, and which come through unbought, is now in every Apple II owner's hands.

—Gregg Keizer

Look Out Virus-Spreaders!

Keep your viruses to yourself! Spreading these more-than-mischievous computer glitches could become a federal offense carrying ten-year prison sentences and fines.

Rep. Wally Herger (R, California) has sponsored a bill in the U.S. House of Representatives which provides criminal penalties and allows civil suits against people who affect, or could affect, interstate or foreign commerce by inserting viruses in computer systems.

"I saw a need for the federal government to step in and provide some sort of a deterrence, because as more people find out about viruses, more people would likely be interested in experimenting with them," Herger said. "I felt it was important to send a message that the federal government would be very tough on those who maliciously planted viruses in other people's computer systems."

Some states already have laws against computer viruses, but the Computer Virus Eradication Act of 1988 will help people who are damaged by viruses that have crossed, or could cross, state lines, effectively protecting people who live in states that don't have computer-virus laws.

Rep. Herger, from northern California, became interested in viruses when he heard a news report about computer crime. He saw viruses as a possible threat to national security. From this interest, he wrote an amendment to the Department of Defense Authorization bill. The amendment requires a study on how national security might be threatened by computer viruses. The Authorization bill was vetoed by President Reagan for other reasons, but Herger is confident that his amendment will be included in the version that is passed.

That interest in national security led to a concern for protecting private individuals, so he wrote the Virus Eradication Act, which has been referred to the House Judiciary Committee. The bill, sent to committee in July, will probably not go to the House floor for a vote until next session.

Computer law is complicated because it's difficult to define everything specifically enough to be comprehensive and broadly enough to account for technological changes. Current computer crime laws exist in the Computer Fraud and Abuse Act of 1986,

but they may not cover viruses.

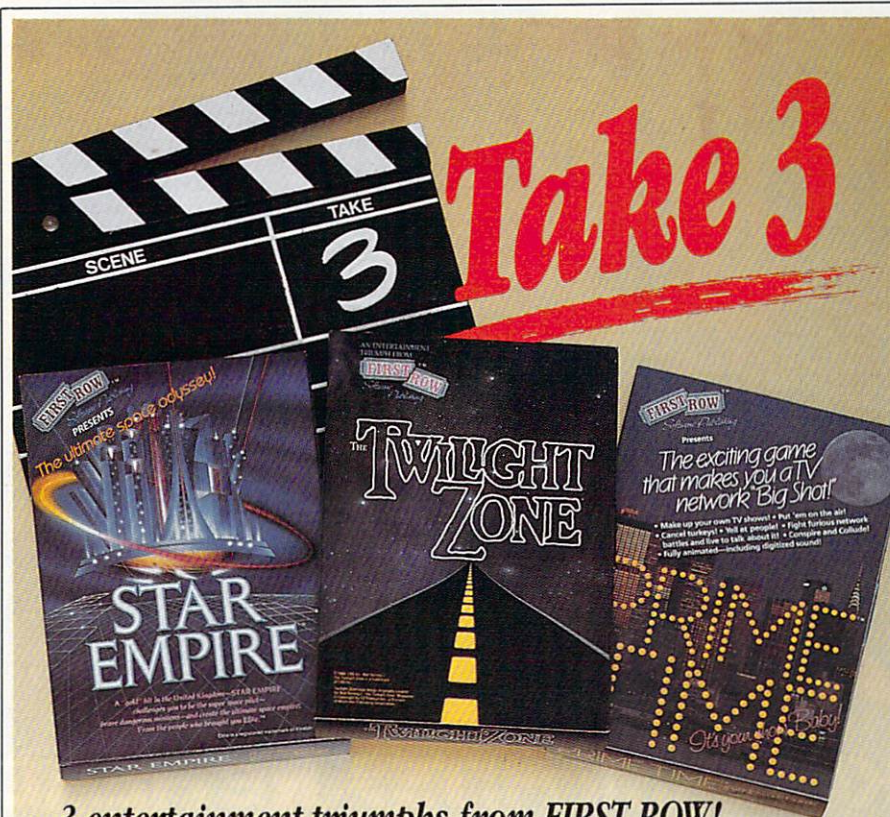
"It's a question that you have to weigh," said Glenn McLoughlin, analyst in science and technology with the Congressional Research Service at the Library of Congress.

"You have to consider whether the current federal computer crime law is comprehensive enough to include the issue of

computer viruses," he said.

"What he [Rep. Herger] has tried to do is sharpen and focus the current federal computer statutes to include computer viruses," McLoughlin said. "I think Congressman Herger has written a very sound and good bill to start the ball rolling."

— Heidi E. H. Aycock
continued on page 10



3 entertainment triumphs from FIRST ROW!

- ★ **The TWILIGHT ZONE** Out of the 6th dimension comes the long-awaited graphic thriller
- ★ **STAR EMPIRE** A space odyssey—from the people who brought you ELITE™
- ★ **PRIME TIME** A comic satire about network TV

3 computer games destined to rise to the "Top of the Charts"!

CHECK YOUR LOCAL RETAILER OR CALL DIRECT 215-337-1500

FIRST ROW
T.M.
Software Publishing

FIRST ROW SOFTWARE PUBLISHING, INC.
900 East 8th Avenue
King of Prussia, PA 19406
(215) 337-1500

The Twilight Zone ©1988 CBS, Inc.



KONAMI HITS ARE HEADING HOME.

With our new software, your favorite arcade games come alive on your home computer.

If you own an IBM, Amiga or Commodore computer — Watch out! Because 4 of Konami's most awesome adventures are about to invade.

You'll confront the missions you've dreamed of in Rush 'N Attack, Contra, Jackal and Boot Camp. And you'll find yourself face to face against unequal challenges, with incredible graphics, awesome music, and sound effects that'll blow you away.

So check out Konami's newest action wherever great software is sold. And be prepared for war.

 **KONAMI**



YOU'LL FIND KONAMI GAMES IN THESE STRATEGIC LOCATIONS.

BABBAGES

CHILD WORLD AND CHILDREN'S PALACE

ELECTRONICS BOUTIQUE

FEDCO STORES

LIONEL KIDDIE CITY, LIONEL PLAYWORLD AND LIONEL TOY WAREHOUSE

TOYS "R" US

WAREHOUSE ENTERTAINMENT

ZAYRE

(Boston and Washington D.C. Area Stores Only.)

Attention Dealers:
For further information on Konami's line
of computer games, call customer service
at (312) 595-1443.



KONAMI

Only Rush 'N Attack and Contra will be available
for Amiga in 1988. ©1988, Konami Inc.

ARIZONA
MESA
Compute or Play
1000 Fiesta Mall

CALIFORNIA
BAKERSFIELD
Software Etc.
2701 Ming Ave.
V. Plaza

CHULA VISTA
R & R Software
1048 3rd Ave.
(619) 426-7011

CITY OF INDUSTRY
Software Etc.
Pomona Hwy. at Azusa

FOSTER CITY
Home Computing
Center
1125 E. Hillsdale Blvd.,
#103

SAN DIEGO
Computer Outlet
7940 Silverton Ave.
(619) 740-0113

SUNNYVALE
HT Electronics
346 W. Maude
(408) 737-0900

TORRANCE
The Warehouse
19701 Hamilton Ave.
(213) 538-2314

CONNECTICUT
DARIEN
Walden Software
800 Post Road
NEW BRITAIN
Romek Home Computer
432 W. Main St.

FLORIDA
GAINESVILLE
Florida Bookstore
1614 W. University
(904) 376-5606

LAUDERDALE LAKES
Software City
3700 W. Oakland Park
Bld.
(305) 735-6700

PANAMA CITY
Gulf Coast
Computers
674 W. 23rd St.

PLANTATION
Software Software
612 Broward Mall
(305) 476-0595

WEST PALM BEACH
Computers 4 Rent
2695 N. Military Trail
(407) 471-1976

ILLINOIS
AURORA
Micro-Tech Solutions
991A Aurora Ave.
(312) 892-3551

CANTON
Blessman's Inc.
175 S. Main

CHICAGO
Software Plus
6212 N. Western Ave.
(312) 338-6100

DANVILLE
Data Center
108 N. Vermilion

HANOVER PARK
Software Plus West
2001 Irving Park
(312) 837-6900

LOVES PARK
Union Hall Inc.
6321 N. 2nd St.

SPRINGFIELD
Illini Software Center
2036 S. McArthur

WHEELING
Software Plus
731 W. Dundee Rd.
(312) 520-1717

INDIANA
PLAINFIELD
Simply Software
311 Gordon Dr.

KENTUCKY
LEXINGTON
Computer Dimensions
171 W. Lowry Ln.

LOUISIANA
SHREVEPORT
Discount Computer
Software
544 E. King's Hwy

MAINE
BELFAST
Skyflight Software
22 Miller St.
(207) 338-1410

CARABOO
Mementos
86 Sweden St.
(207) 498-3711

WESTBROOK
Hands On Computers
861 Main St.
(207) 854-1155

MASSACHUSETTS
PITTSFIELD
Nichols Electronics
274 Wahconah St.
(413) 443-2568

WELLESLEY
Memory Location
396 Washington St.
(617) 237-6846

WORCESTER
The Software Shop
84 Pleasant St.
(617) 791-5905

MICHIGAN
CLAWSON
Software Trends
230 S. Main St.

CLIO
The Edge Connector
124 North Mill
(313) 686-1070

FLINT
I/O Software
G-3304A Corunna Rd.

GARDEN CITY
Soft-House Computer
Center
32647 Ford Rd.
(313) 522-3015

TRAVERSE CITY
The Software Shop
710 Centre St.

MISSOURI
CAPE GIRARDEAU
Midwest Computers
203 West Park Mall
(314) 339-0022

NEW JERSEY
BRIDGEWATER
Software Etc.
400 Commons Way

WAYNE
Software Etc.
Willowbrook Mall

NEW MEXICO
ALBUQUERQUE
Page One
11200 Montgomery
N.E.
(505) 294-2026

NEW YORK
ALBANY
Computer Cellar
911 Central Ave.
(518) 482-1462

BAY SHORE
Software Etc.
1701 Sunrise Hwy.

CHEEKTOWAGA
Papa's Computerware
2789 Union St.
(716) 684-7272

FLUSHING
Software Etc.
39-01 Main St.

HIGHLAND FALLS
Software Affair
188 Main St.
(914) 446-4121

HOLBROOK
Great Escapes
5801 Sunrise Hwy.

KENMORE
Software Supermarket
3670 Delaware Ave.
(716) 873-5321

LATHAM
Contemporary
Computers
893 Loudan Rd.
(518) 783-1088

NEW YORK CITY
J&R Music World
23 Park Row
(212) 732-8600

Leigh's Computer
1475 Third Ave.
(212) 879-6257

RIDGEWOOD
Ouo Vadis
70-20 Fresh Pond Rd.

ROCHESTER
Leon's Computer Mart
103 Clinton Ave.
(716) 325-2787

SCOTIA
Select Software
108 Mohawk Ave.
(518) 382-7886

OHIO
DAYTON
Microtyne
4049 Marshall Rd.

FAIRFIELD
Microware Magic
6625 Dixie Hwy.
(513) 874-6560

MEDINA
Ram-Run Computer
Products
891 N. Court
(216) 263-4428

PENNSYLVANIA
WEST REDDING
English's Computers
608 Penn Ave.

RHODE ISLAND
WARWICK
Software Connection
101 W. Natick Rd.

WOONSOCKET
Galaxy Computers
332 River St.

TEXAS
BEAUMONT
Software Rental
2855 Eastex
Freeway #D

FORT WORTH
Wedgewood Software
5312 Woodway
(817) 292-7353

HOUSTON
Floppy Wizard
271 Memorial
(713) 461-8660

SAN ANTONIO
Computer Experience
5525 Blanco
(512) 340-2901

UTAH
SALT LAKE CITY
Armadio Brothers
3330 S. State
(801) 484-2791

VIRGINIA
MARTINSBURG
My Software Heaven
Meadowlane Plaza
Box 2
(304) 263-1228

WOODBIDGE
Virginia Micro
Systems
13646 Jefferson
Davis Hwy.
(703) 491-6502

WASHINGTON
LONGVIEW
Software Depot
1310 Oceanbeach
Hwy.

LYNWOOD
Family Computers
3333 184th St. S.W.
(206) 775-3530

PACOMA
Nibbles & Bytes
4020 S. Steele St. #105

SEATTLE
Omni International
Trading Post
3826 Woodland Park
Ave. N.
(206) 547-6664

VANCOUVER
Software Support Int.
2700 N.E. Andreison
D13

WISCONSIN
JANESVILLE
Romeyn Software
2100 E. Milwaukee

MILWAUKEE
Computer Software
Center
10710 W. Oklahoma
Ave.

RACINE
Computer Paradise
4901 Washington
Ave.

Bus, Bus, Magic Bus

Several manufacturers of IBM PC compatibles met in New York in September to announce support for the Extended Industry Standard Architecture (EISA) bus. That support would build on the already-established AT bus and would rival IBM's own chosen 32-bit bus, its Micro Channel Architecture (MCA). The rivalry could influence the future of MS-DOS personal computer design.

"The industry doesn't need two advanced architectures," said IBM spokesperson Jim Monahan. "We have the one that customers need. The other is just a set of charts."

A bus is the internal conduit that moves information from one part of the computer to another. IBM uses the MCA bus in some of its PS/2 line—the Model 50 and above—but not in the Models 25, 30, and the new 30-286. Big Blue has offered to license its MCA bus technology to companies wanting to build PS/2 compatibles, but so far the response has been mild.

The computer companies that stood behind the EISA bus—dubbed the *Gang of Nine* by the *Wall Street Journal*—include Compaq, Tandy, AST Research, Epson America, Hewlett-Packard, NEC, Olivetti, Wyse Technology, and Zenith Data Systems. Their proposed bus would be com-

patible with the 8- and 16-bit boards used to expand the functionality of XTs, ATs, and compatibles. The MCA bus requires new add-on board designs.

"The industry can use two advanced architectures," said Ed Juge, Tandy's director of market planning. He said that people are happy with the existing bus architecture, and



that extending the design further offers compatibility and an upward growth path at the same time.

What none of the Nine can do individually, they may be able to do together. The Gartner Group, an industry analyst, estimates that the public buys 1.5 compatibles for every IBM PC sold. Those numbers could give the Gang of Nine enough weight in the market to buck the IBM bus standard.

IBM said that it has sold more than 3 million PS/2's worldwide since the line was introduced in April 1987; more than half of those were of

the MCA design.

Tandy also sells MCA-bus computers. Juge said that Tandy's support of the EISA didn't mean that it would stop selling them. In fact, he said that Tandy was back-ordered on its high-end MCA-bus personal computers.

Whether EISA will be accepted alongside MCA and the original AT bus won't be

known for at least another year. The computer consortium won't start shipping EISA products until late 1989. IBM is using that delay to reinforce its own clout in the market, but some analysts wonder if that position won't drift into a niche rather than blossom into an industrywide standard.

IBM denied that MCA would find itself relegated to "true-Blue shops," corporations that buy only IBM computer products. It said users were just beginning to understand the benefits of MCA technology, like multitasking, multiprocessing, and peripheral-device management.

For home computer users, the highway is clear for any number of alternative buses. They will have ample time to decide whether they need MCA, EISA, some as-yet-un-named and -unannounced rival bus architecture, or no change at all.

IBM considers the announcement by the PC-compatible makers a testimony to the fact that the AT-style bus is fading. "The consortium is reaffirming our belief that people are looking toward 32-bit architecture," said Monahan. Yet on the same day that the Gang of Nine made their announcement, IBM introduced the PS/2 Model 30-286, proving that there's some life in the old dog yet. (See related story, "Son of AT.")

One notable company that has stayed out of the road during this wild bus ride is Apple, which can also argue that it has technology available now for those users ready to depart the AT-bus terminal. Apple is touting its bus, which is incompatible with MS-DOS architectures, as a beacon of stability in a whirlwind of chaos. It's possible that the Cupertino computer maker may be able to capitalize on the confusion sown by IBM and its rivals—an ironic twist to Apple's history as the West Coast maverick.

— Peter Scisco

Son of AT

In reaction to slipping sales at the low end of the personal computer consumer market, IBM in September announced the PS/2 Model 30-286 at a New York press conference.

"We haven't done as well on that end as we have on the high end," conceded Jim Monahan, an IBM spokesperson. He said the machine was aimed at home users, small businesses, and home businesses—single users running

simple software programs.

The new computer falls roughly in the middle of the company's PS/2 line, with more memory capacity and a faster processor (the same 80286 chip used in IBM's discontinued AT personal computer) than the Models 25 and 30 have, but without the MCA bus that comes with the Models 50 and above. IBM denied that the Model 30-286 was merely an AT in PS/2's clothing.

The 30-286 comes in two basic configurations. A single 3½-inch floppy drive system lists for \$1,995; equipped with a 20-megabyte hard disk, the computer sells for \$2,595. Both setups include 512K of memory on the system board, which can be upgraded to 1, 2, or 4 megabytes. Total system memory can run to 16 megabytes.

The computer also includes VGA graphics, unlike

the plain-vanilla Model 30, which costs about \$200 less. The base price doesn't include a monitor.

Some industry analysts wondered if the computer's introduction implied slow acceptance of IBM's MCA bus, but the company vehemently opposed that idea. "We have never denied a need for non-MCA machines for users," Monahan said.

— Peter Scisco

Third-World Computing

In the United States, getting to a computer can be a simple as going to the library, the schoolhouse, or even the kitchen table. But in many other parts of the world, the need for computer technology far outstrips the supply of hardware and software.

Global Technology is working to ease the crunch by acting as a channel for used computers. "There's a glut of equipment in this country that goes to waste," says Philip Friedman, who, along with Ali Ansari and Daryl Maus, founded the nonprofit organization in November 1987.

Friedman says that the rapid acceleration of technology in the U.S. quickly transforms state-of-the-art equipment into electronic has-beens. But what U.S. customers see as outdated, developing countries see as advanced engineering. "There's a tremendous potential for this," he says.

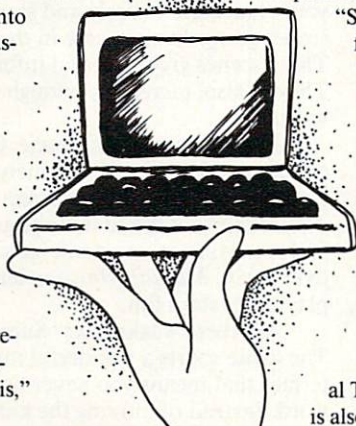
Global Technology works with international organizations like YMCA International and Save the Children to put dependable, used computers in the hands of the neediest applicants. "Most requests are for PCs," he says. "We haven't got the number of PCs we can use."

The organization has supplied computers to a hospital in Bangladesh, an orphanage in Honduras, and a Native American reservation here in the United States. Friedman says there are hundreds more requests from Central America, Brazil, West Africa, and other places waiting to be filled; the problem is lining up donations.

"We need a large company to support the program,"

says Friedman. Although Global Technology has made proposals to several computer manufacturers as well as to private foundations, support is practically nonexistent. The group gets no government funding.

Companies and individuals who donate their used computers, software, or peripherals to Global Technology can earn tax deductions. "And they know they are doing a lot of good," Friedman adds. He hopes that a high-ranking official either in a computer manufacturing company or in a company that is planning to upgrade its computers will decide that donating equipment is a good alternative to trade-in policies or auctions.

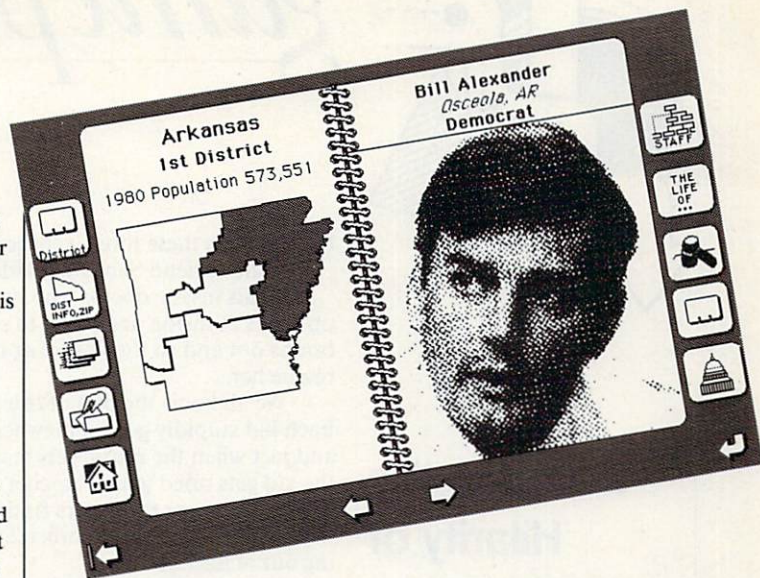


"Somebody from the top of the company has to know about this," he says. Besides IBM PCs and compatibles, Global Technology is also looking for

Apple computers. Friedman says Global tried to take some CP/M-based machines overseas, but found support and training lacking. The main point to remember, he says, is that the computers have to be in good operating condition.

Individuals who want to donate their used equipment to Global Technology should write first (P.O. Box 4861, Boulder, Colorado 80306), explaining what kind of computer or peripheral it is and describing the condition. The group will then contact the donor and tell where the equipment should be shipped. Cash contributions are welcome. Individual donations are tax-deductible.

— Peter Scisco



Mr. Macintosh Goes to Washington

If you've been looking for your voice in Washington, look no further than a new *HyperCard* stack from Highlighted Data. With *Congress Stack*, you get megabyte after megabyte of information about senators and representatives in the 100th U.S. Congress.

The stack holds ten megabytes of names, addresses, phone numbers, official biographies, and other important data. You can find out who sits on the Budget Committee, which members of Congress represent the 14th district of North Carolina, and which members went to Harvard.

"We saw *HyperCard* a year ago at MacWorld [Expo], and we are in the CD-ROM business, the large database business," said Anne-Marie Barker, vice president of Highlighted Data. "*Congress Stack* is a natural application for *HyperCard* because you're literally no more than two keystrokes away from any kind of information. We essentially designed it on the way home from MacWorld. Then we just collected the information."

Once they had compiled the information, the developers had to enter the large body of data into a Macintosh, using scanners, optical character readers, and—when all else failed—some typing.

Besides having database aspects, *Congress Stack* is graphics-oriented. Pictures of

members of Congress have been scanned into the stack, as have maps of states and congressional districts. The pictures can be used as clip art.

Information can be imported to your word processor via a *HyperTalk* script included with the stack. You can also edit *Congress Stack* or add to it—if you have enough room on your hard disk.

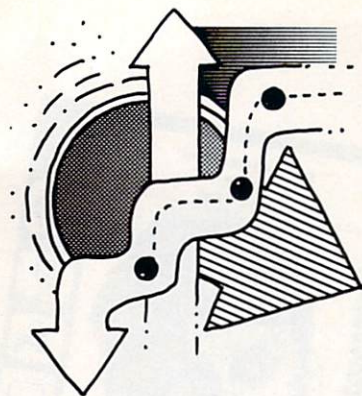
The stack developers had a varied audience in mind when they built *Congress Stack*. "We've targeted reporters, and we've obviously got the lobbyists, schools, libraries, businesses—essentially anyone who wants to do business with Congress and has trouble getting information," Barker said.

In the future, Highlighted Data will put a beefed-up version of *Congress Stack* on CD-ROM. "*Congress Stack* will grow up to be *Fed Stack*," Barker said.

An updated stack, available in the spring, will feature information about the 101st U.S. Congress.

For information, contact Highlighted Data at P.O. Box 17229, Washington, D.C. 20041; (703) 533-1939. A copy of the stack costs \$159, and registered owners of *Congress Stack* for the 100th Congress will be eligible for a discount on the stack for the 101st Congress.

— Heidi E. H. Aycock
continued on page 98



gameplay

ORSON SCOTT CARD

Combine the Hilarity of Horror Films with the Skill of Storytelling for a Great Game

There's these three teenagers, see, and their friend Sandy got kidnapped by this insane doctor who has her locked up in his mansion and plans to suck her brains out and so they're going inside to rescue her.

We all know the plot of *this* movie. Each kid stupidly goes somewhere alone, and just when the music gets really tense, the kid gets offed with a hatchet or a shish-kebab skewer, or the others find him or her with the top inch of a number 2 pencil sticking out of his or her eye.

The only way to keep from throwing up is to laugh at the absurdity of it all.

It was not always so. Once there was a whole spate of genuinely funny horror comedies at which you laughed because of good writing and intentionally comic acting.

Now, if there's any storytelling art with less good comedy than horror films, it's computer games. Most of the humor is written at the 13-year-old level favored by computer hackers—you know, hilarious bits like a sign that says TROLL BRIDGE—STOP, PAY TROLL.

Computerdumb, as I call these quips, is full of word plays and literalisms, all designed by and for people who think the *Xanth* books and *Hitchhiker's Guide* are, like, a real gas.

So here comes *Maniac Mansion*, from Lucasfilm Games—and I'm here to tell you, folks, it's *funny*. Sure, it has some clunkers; except for the recently released movie *A Fish Called Wanda*, I can't think of a comedy that doesn't have a few clunkers. But it also has funny bits that I still laugh at whenever I see them.

There's also some sharp satire. For instance, when you turn on the TV, you get a close-up of a commercial for a company called "Three Guys Who Publish Anything." I thought it was as funny as the best fake ads on "Saturday Night Live," though maybe you have to be in the literary business to really appreciate it.

There are even little quotes from various Lucas films, carrying a tradition from silver screen to floppy disk: The game room has a *Star Wars* movie poster on the wall, and the rocket-powered Edsel has the predictable license plate—THX-1138 (the title of George Lucas's first film).

The connection between Lucasfilm's games and movies is more than just the name and the quotes, though. Whatever you may think of Lucasfilm's movies, you have to admit they have class—yes, even *Howard*

the Duck. Not everything can be a work of genius, but it *can* be stylish and professional.

The game designers have used some movie techniques I've never seen before in a computer game. For instance, you can cut from one point of view to another.

You start with three teenagers. One of them is always Sandy's boyfriend Dave, but the other two you can choose. (My own kids, for reasons the depth of which I dare not plumb, prefer punk rockers Syd and Razor.)

As you go along in the game, you can flip back and forth from one character to the next, taking them to widely separated parts of the mansion.

There are some puzzles you can't solve without cooperation between the kids. Opening the knobless door on the main floor is a two-person job, for example, as is getting out of the dungeon.

Other cuts, though, take you away from your characters entirely and show you scenes going on elsewhere in the mansion. These scenes give you vital information. They're also, incredibly enough, well-written.

Plus, the game is humane. Other puzzle adventures kill you off routinely for making perfectly natural—but incorrect—guesses. As a result, you spend half the game saving and restarting so you don't have to begin all over again. *Maniac Mansion* lets you keep playing. It stays fun.

Are there weaknesses? Sure there are. The game sports a wonderful mouselike interface that means you never have to type a word. Instead of moving the kids directly, you point the cursor at the place you want them to go, and the game moves them there for you. It's a great interface—except the IBM version didn't let me use my mouse. Moving the cursor from the keyboard is maddeningly slow.

And while I loved the animation and the character switching, it takes forever to get all three kids to the same place in the house because they move separately. Why not a TOGETHER command that makes all three kids follow the cursor until you choose APART?

Still, the flaws are minor. *Maniac Mansion* is a compellingly good game (my kids logged dozens of hours on the game before I ever got to it) and has moments of well-written comedy.

Just as important, though, the game designers at Lucasfilm are finding new ways to use the computer's power—and to make computer games a valid storytelling art. □

PC Users Unite!

This year PC users like you came together on GEnie™ to get their PC questions answered by experts, their PC games won, their PC systems updated and their online PC opinions confirmed, researched, and applauded **1,711,368 times.**



Join the Revolution.

GEnie.™

**For the people,
by the people.**

You've never been a follower. You want your voice heard. You want straight, unbiased information about your hardware and software. You want independent news. Opinions. And control.

GEnie understands. In the PC RoundTables on GEnie, the people determine what is discussed. And since GEnie is not a hardware or software developer, you'll get the most objective information about what's new on the market. That's why smart PC users like yourself turned to us over 1 million times this year. That's why you should too.

GEnie makes sure you have access to all kinds of great PC software—including thousands of games, education and business productivity programs as well as hard-working utilities to expand your PC. And the experts you trust will be online when you log on. Plus news, shopping, travel and reference data. All for only 8¢ a minute.

Sign-up is just \$29.95, and your first 2 hours are free.* There are no hidden charges or monthly minimums. Now it's your call.

Here's how easy it is to sign-up from your keyboard now.

1. Have your major credit card or checking account number ready.
2. Set your modem for local echo (half-duplex)—300 or 1200 baud.
3. Dial 1-800-638-8369. When connected, enter HHH
4. At the U#=prompt enter **XJM11739,GEnie** then RETURN.

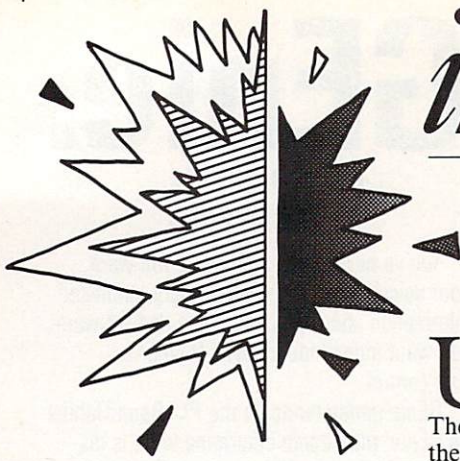
Need help or more information? No modem yet? We can help. In the U.S. or Canada call 1-800-638-9636. Join the online Revolution and let your voice be heard.



We bring good things to life.

*Basic rates and services in effect 9/88 apply in U.S. only. Non-prime time rates apply Mon.-Fri. 6PM-8AM local time and all day Sat., Sun., and nat'l. holidays. Subject to service availability. Some services offered on GEnie may include additional charges. *\$10 credit applies. Offer good for 30 days from sign-up.

© 1988 General Electric Company, U.S.A.



impact

DAVID D. THORNBURG

Electronic Presentations Let Your Creative Imagination Shine—It's the Dawn of the Show-Me Age

Until very recently, most computer applications for business were designed to create paper documents. The role of the computer was to facilitate the creation of these documents—to act as a glorified typewriter/calculator. The benefit of technology lay mostly in the hands of the document creator, not in those of the recipient.

Now that computer technology is more commonplace, new types of documents are being created. Rather than restricting our presentations to the static medium of paper, we can design dynamic, interactive presentations on disks.

A few years back, some companies started sending out their annual financial statements on spreadsheet disks so stockholders could explore their company's performance on their own. The most elaborate electronic presentation I've seen so far was last year's annual report supplement from Apple Computer, which was distributed as a *HyperCard* stack. In addition to providing the usual information found in paper reports, this disk allowed recipients to explore the backgrounds of the company's officers, examine details of the product line (including pictures), and explore the stock's performance for any day dating back to Apple's first public offering.

The main advantage of electronic presentations is that the recipient has more control over how he or she will read the material than is provided for in a paper document. This control presents special challenges for the document's creators—they must design each of the document's components so that it can stand alone.

Creating disk-based presentations is more like producing a video program than it is like writing a document. While organizational and clear expository skills are still important, documents designed to be accessed randomly require other, more specialized skills. Even so, the rapid growth of presentation hardware and software suggests that disk-based presentations will become ever more commonplace in the near future.

I remember attending a conference in 1980 at which I displayed "slides," which I had created on my old Atari 400, on several large-screen televisions in the auditorium. My bold move into the new age had its problems; most conferences then were ill prepared for video projection. But I also remember a tremendous benefit. The day before my talk, another speaker had made some wonderful comments upon which I

wished to elaborate during my session. That evening in my hotel room I added several new slides that incorporated this material into my presentation. That wouldn't have been nearly so easy had I been using overheads or 35mm slides.

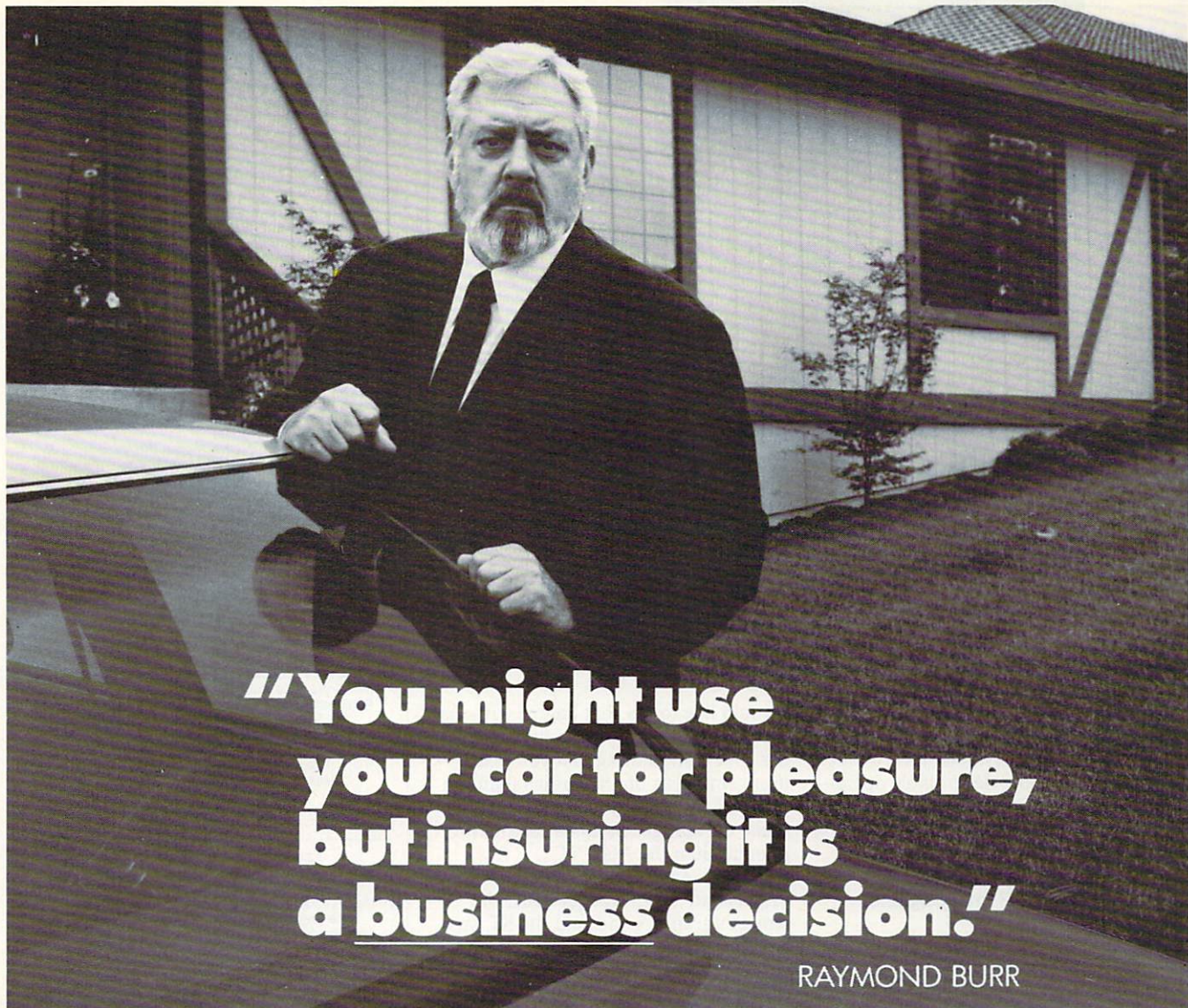
The creation of low-cost video-projection tools like the liquid-crystal-display plate promises to make computer-facilitated presentations commonplace in the future. I rarely travel without my Apple IIc with a display plate—a compact package that fits easily under an airplane seat and sets up in a few minutes.

But the computer itself is only part of the story. The development of low-cost laser media—compact audio discs and laser videodiscs—allows us to incorporate extremely high-quality audio and video into any presentation. Since videodisc players are easily controlled by computers, creating multimedia presentations is much easier than it has been in the past.

Anyone who makes presentations can benefit from this technology. Businesses can design multimedia sales presentations in the home office. The sales force in the field can modify those presentations to meet its needs. Low-cost laptop computers can serve as delivery vehicles for interactive presentations that flexibly adapt to the needs and interests of potential customers. Animation and graphics not only increase the appeal of your presentation, but make it more suitable to an audience that spends more time looking at television than it spends reading books.

Another major opportunity lies in the classrooms and conference rooms of our schools and corporations. I've often wondered why computer companies are so interested in putting computers on people's desks, when everyone seems to be in meetings all the time! Research on computer-facilitated meetings shows they can be three times as productive (measured in agenda items per hour) as meetings facilitated with white boards or large pads of paper. Given the tremendous cost of meetings (take a look at the hourly salaries of the people in your next meeting), I am surprised that businesses aren't rushing to bring this technology to the meeting room.

The area of desktop presentations has moved far from the days when I carried my Atari 400 around the country, but it has scarcely started to have the impact it could. Perhaps your own business could benefit from this newest technological wrinkle—it's certainly worth the effort. □



**"You might use
your car for pleasure,
but insuring it is
a business decision."**

RAYMOND BARR

Here's why... With the cost of auto insurance, particularly with two or more cars, you must make informed decisions. The right insurance company with the right coverages, with the proper limits at appropriate rates. Those are *business* decisions that require the advice and counsel of an Independent Insurance Agent. We represent several fine companies...not just one...so you choose the right policy at the right price, with the right service. An Independent Agent — always a good *business* decision.



INDEPENDENT INSURANCE AGENTS OF AMERICA
...and the insurance companies they represent

INCORPORATED

letters

Old Pet Chips

In the August "Impact" column, David Thornburg made brief mention of his first 8K PET. I recently got mine back from my son and started to program a Three Mile Island nuclear reactor game but ran into the RAM intermittent problems. After plugging and unplugging chips for a while, I tried to find some chips to buy.

Could you possibly help me and perhaps others to solve the RAM chip problem of these early machines? I would like to restore dependable operation to mine. Is there a group of old PET lovers? Mine is serial number 20574, has that strange mini-keyboard and built-in tape deck, and was purchased in April 1978 in Springfield, Massachusetts.

*William S. Hough
Antioch, California*

Any PET owners out there who can help?

PC Engine

I enjoy *COMPUTE!* very much and hope you continue publishing in your bold new format. It is a refreshing and welcome change from your old format, which I thought was becoming out-of-date and stale.

But on to my question: While traveling in Europe recently, I came across several British computer magazines which all seemed to talk, in awe, about this one game machine called the PC Engine. I was just wondering if you had any information on this product which seemed so highly praised.

*Eugene Kuzinski
Pittsford, New York*

As of July, not much information was available about the PC Engine, a dedicated computer-game/home-entertainment system. NEC, the Japanese

electronics giant, manufactures the machine. There are no plans to market it in the United States. Notable features of the machine are its speed, advanced graphics and sound capabilities, small size, and credit card-sized ROM cards that store the games.

Push ST

I would like to say that I agree with David Brown's comments in the September 1988 issue stating that you place more emphasis on the Amiga than the Atari ST. I believe you consistently make the Amiga sound better and more popular than the Atari ST.

For example, in the August 1988 "Hints and Tips," you glorified the Amiga's graphics and said the ST was great for word processing. While it is good for word processing, the ST has equally great graphics. Lo-res graphics mode is 640×200 pixels; medium-res mode is 640×400 —exactly the same as the Amiga. There's even a new program to display 4096 colors at one time—exactly the same as the Amiga.

And in your June 1988 review of *Arkanoid*, you mentioned it was available for only the Amiga. The ST version came out first. I think it looks better on the ST.

*David Visser
Belleville, Ontario*

COMPUTE! magazine speaks to all home computer users, not just one segment. We may concentrate on the most popular systems, but we make every effort to be fair in our coverage of all major home computers.

Neither Taito nor Discovery Software had released an ST version of Arkanoid by the beginning of October. Taito plans to release an ST version in the near future, however.

Editor **Gregg Keizer**
Senior Art Director **Janice R. Fary**
Features Editor **Keith Ferrell**
Assistant Editors **Heidi E. H. Aycock**
Peter Scisco
Editorial Assistant **Mickey McLean**
Copy Editors **Karen Siepak**
Tammie Taylor
Staff Contributors **Karen Uhlendorf**
Rhett Anderson
David English
Clifton Karnes
Contributing Editors **Arlan Levitan**
David Thornburg

ART DEPARTMENT
Assistant Art Director **Robin Strelow**
Junior Designer **Meg McArn**
Mechanical Artists **Scotty Billings**
Robin Case

PRODUCTION DEPARTMENT
Production Director **Mark E. Hillyer**
Assistant Production Manager **De Potter**
Production Assistant **Kim Potts**
Typesetting **Terry Cash**
Carole Dunton
Advertising Production Assistant **Anita Armfield**

COMPUTE! PUBLICATIONS
Group Vice President,
Publisher/Editorial Director **William Tynan**
Managing Editor **Kathleen Martinek**
Senior Editor **Lance Elko**
Editorial Operations Director **Tony Roberts**
Executive Assistant **Sybil Agee**
Senior Administrative Assistant **Julia Fleming**
Administrative Assistants **Iris Brooks**
Cathy McAllister

ABC CONSUMER MAGAZINES
Senior Vice President **Marc Reisch**
Vice President, Advertising **Peter T. Johnsmeyer**
Vice President, Finance **Richard Willis**
Vice President, Production **Ilene Berson-Weiner**

CIRCULATION DEPARTMENT
Vice President **Robert I. Gursha**
Subscription Staff **Ora Blackmon-DeBrown**
Harold Buckley
Mitch Frank
Beth Healy
Thomas D. Slater
James J. Smith
A. Heather Wood
Subscriber Service (800) 727-6937

One of the **ABC PUBLISHING** Companies

President **Robert G. Burton**
1330 Avenue of the Americas
New York, NY 10019

ADVERTISING OFFICES

New York: ABC Consumer Magazines, Inc., 825 Seventh Ave., New York, NY 10019. Tel. (212) 265-8350. **Bernard J. Theobald, Jr.**, Group Advertising Director.

Greensboro: COMPUTE! Publications, Suite 200, 324 West Wendover Ave., Greensboro, NC 27408. Tel. (919) 275-9809. **Kathleen Ingram**.

New England & Mid-Atlantic: **Bernard J. Theobald, Jr.**, (212) 315-1665; **Peter Hardy** (508) 681-9000; **Kathleen Ingram** (919) 275-9809.

Midwest & Southwest: **Jerry Thompson**, **Lucille Dennis**, **Jennifer Delfs** (312) 726-6047 [Chicago]; (713) 731-2605 [Texas]; (303) 595-9299 [Colorado]; (415) 348-8222 [California].

West, Northwest, & British Columbia: **Jerry Thompson**, **Lucille Dennis**, **Jennifer Delfs** (415) 348-8222.

Southeast & International: **Peter Hardy** (508) 681-9000; **Kathleen Ingram** (919) 275-9809.

Address all advertising materials to: **Anita Armfield**, COMPUTE! Publications, Inc., 324 West Wendover Ave., Suite 200, Greensboro, NC 27408.

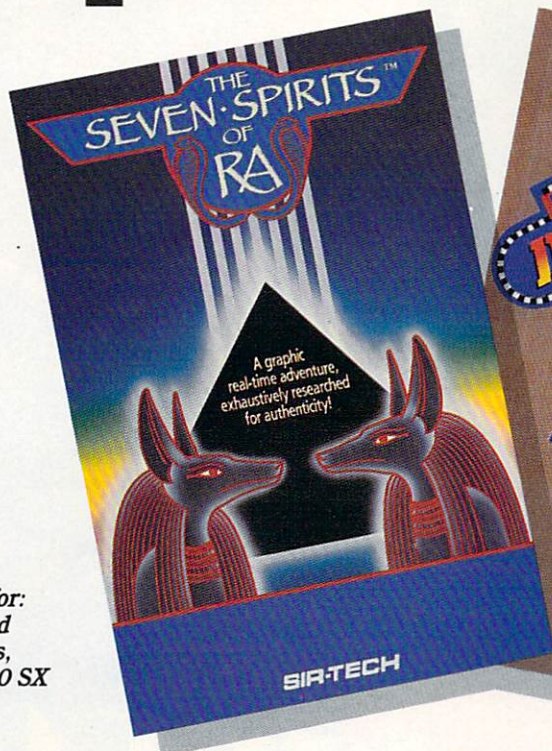
Editorial inquiries should be addressed to **The Editor**, COMPUTE!, 324 West Wendover Ave., Suite 200, Greensboro, NC 27408.

PRINTED IN THE U.S.A.

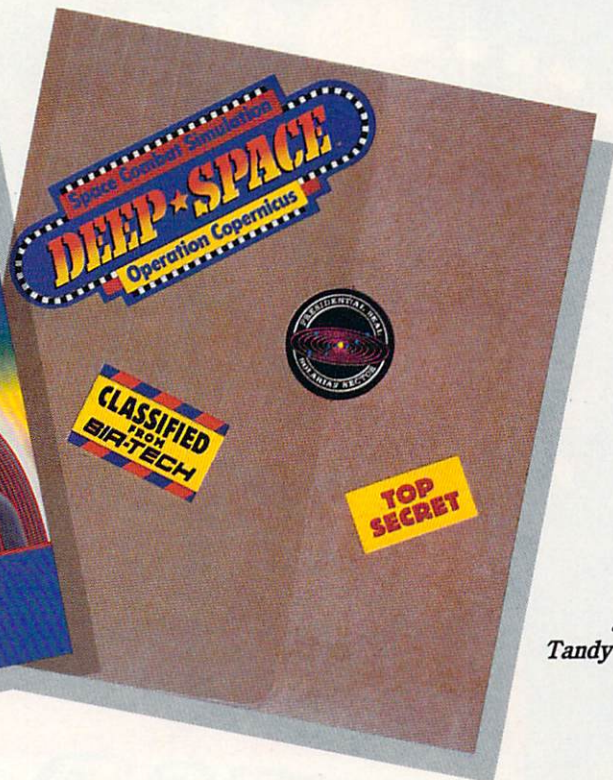
Challenging Missions:

From a mythological past

To a dangerous future



Available for:
IBM PC and
compatibles,
Tandy 1000 SX
& EX.

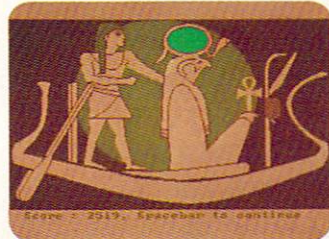


Available for:
IBM PC
and compatibles,
Tandy 1000 SX & EX,
C64/128 and
Apple II Series.

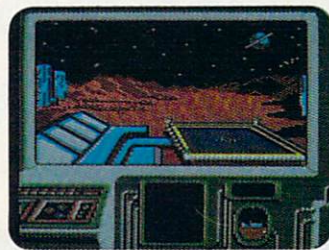


The Seven Spirits of Ra™ challenges you to an adventure from 3,000 years ago! Experience the authentic drama of an ancient Egyptian myth. Fight through tombs,

pyramids, caverns and swamps. Test your mind against complex, multilevel passages, overcome sudden perils and surprises from evil forces, guardian demons and villains.



The dangerous DEEP SPACE™ assignment: Operation Copernicus. Check your Top Secret Flight Dossier, then launch your fully armed Starship on four thrilling combat



missions. Your high-tech cockpit offers Dashboard and Out-of-Cockpit Views, detailed Quadrant Maps and Damage Control Reports. But beware! Many space enemies await you!

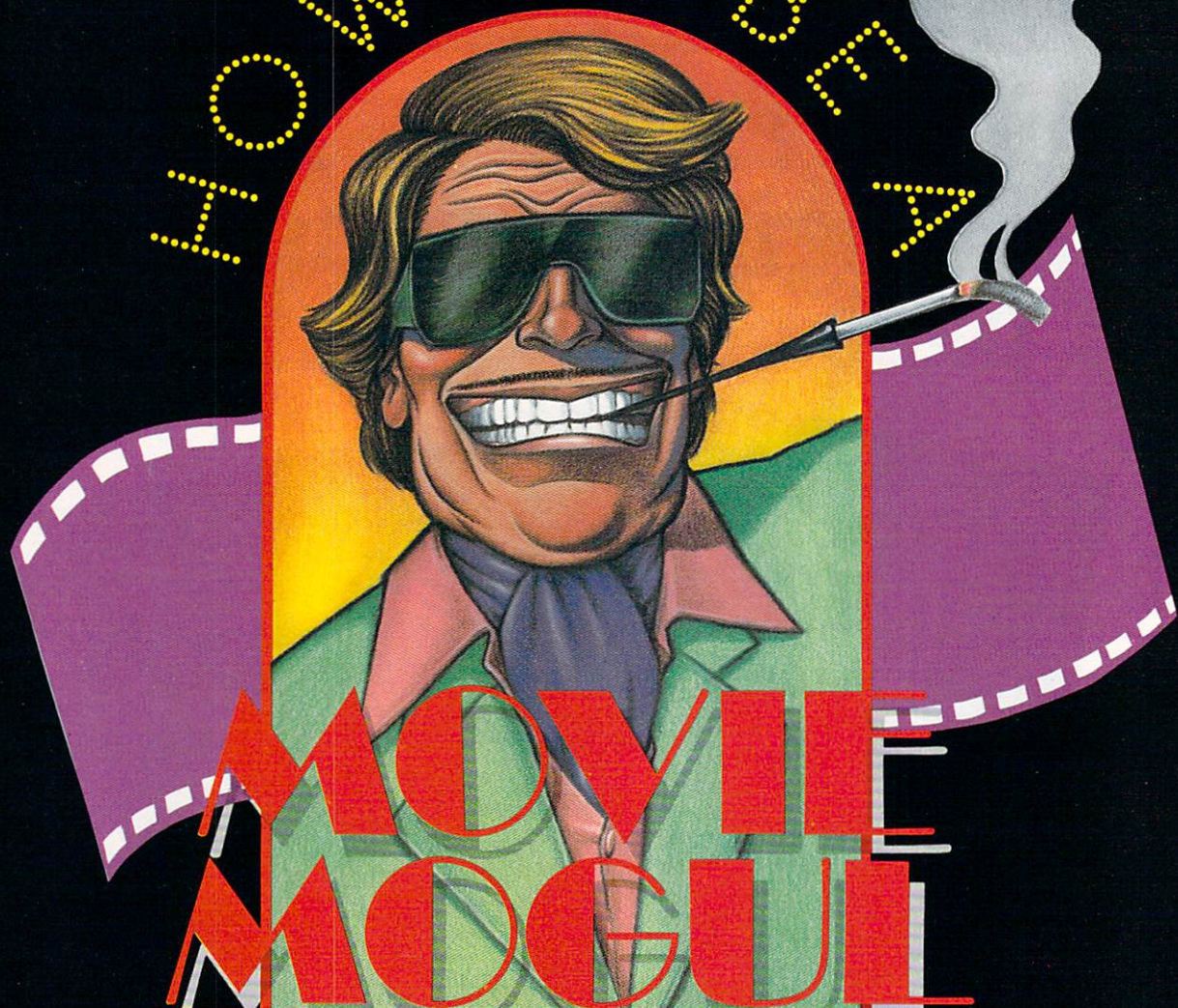
New from

SIR-TECH

™Trademarks of Sir-tech Software, Inc. Apple is a registered trademark of Apple Computer, Inc. C64/128 are registered trademarks of Commodore International. IBM is a registered trademark of International Business Machines. Tandy is a registered trademark of Tandy Corporation.

Sir-tech Software, Inc.
P.O. Box 245, Ogdensburg,
NY 13669
(315) 393-6633

HOW TO BE A



MOVIE MOGUL

WITH HELP FROM

DESKTOP VIDEO

Grab your video camera, turn on your videorecorder, and sit down in front of your computer. With desktop video, the hottest computer topic around, you can become a movie mogul. Let us show you how to create and use that video studio on your desk.

Steven Anzovin



You've just returned from an incredible vacation in the Big Apple. Your kids loved Manhattan—the skyscrapers, the parks, the museums, the street vendors—and you used your camcorder to capture it all on video. When you sit down to look at the yards and yards of tape you've shot, you decide you'd like to do something special with it, make it really memorable—give it a professional look—with slick titles, transitions, and graphics like the ones you see in the movies or on network television.

HOLLYWOOD ★ ON YOUR DESKTOP

Until recently, that would have been no more than a pipe dream—the capability to create sophisticated videos with home equipment just didn't exist. But in the last year that dream has come a lot closer to reality, thanks to personal computers outfitted with new video-oriented software and peripherals.

Desktop video is the term applied to the fast-growing practice of linking low-cost computers with consumer and industrial-level video systems to create video programming with professional-looking quality. Current desktop video products let you mix live video and computer effects, add titles and text over video, turn video images into paint-program pictures, create computer slide shows, and even craft amazingly detailed three-dimensional animations. And desktop video is hot—many observers think it will have as big an impact on the personal computer world as desktop publishing did two years ago. You can see all kinds of people using desktop video—from home videophiles putting titles on their family videos to TV pros needing quick computer graphics for high-budget network shows such as “Amazing Stories” and “Max Headroom.”

In this article, you'll see that Big Apple-vacation tape created step by step using some of the latest tools for the Amiga, the computer that launched the desktop video revolution. But keep in mind that desktop video products are now available for every computer, with more on the way (see “The Mogul's Tools”).

STEP 1



Any desktop video production, even a relatively simple one like this, needs a plan—a list of shots and effects. Shot 1 is a storyboard, a visual plan of each part of the production. There are three parts: first, a fade from black to a fancy title that identifies the video; second, a wipe that reveals a Manhattan scene behind the title; and third, a fade that brings in full-motion video over the lower part of the screen, then over the entire screen. In a sense, the intro is much like a slide show incorporating video. All pictures will be created in the Amiga's lo-res overscan screen mode (see “How Desktop Video Works” for more on overscan).

STEP 2



You've taken a still photo of the Lower Manhattan skyline that you'd like to use as a background in the introduction, but you need to get the photographic image into the computer. NewTek's *Digi-View* is the perfect tool for this. *Digi-View*, a combination hardware/software package, converts any video image from a black-and-white or color video camera into a computer graphic via an ▶

Steven Anzovin, a freelance computer graphics designer and videographer, has created desktop video animation for several Fortune 1000 companies. His most recent book for COMPUTE! is *Amiga Desktop Video: A User's Guide*, to be published this spring. He is also the author of COMPUTE! books on *HyperCard* programming and *Deluxe Paint II*.

DESKTOP VIDEO

attachment to the Amiga's parallel port and NewTek's image-processing software.

Hook up the camera (NewTek recommends Panasonic's WV-1140 black-and-white industrial camera, but you can use a standard color camera or camcorder) to any monitor and use the screen image to aim and focus the camera on the photograph. Once the image is positioned, load the *Digi-View* software and hook up the camera to the Amiga through the *Digi-View* interface box. Simply choose *digitize* from the *Digi-View* menu bar, and the photo appears on the screen. With image processing (see Shot 2), it's easy to create a high-contrast version of the scanned image, as in Shot 3. Save this picture as a standard IFF file; name it *Skyline.pic*.

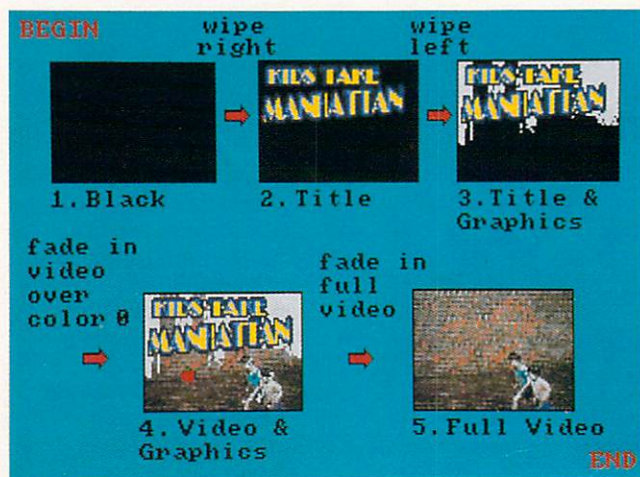
STEP 3



The title of the video is "Kids Take Manhattan." To create the title text, let's use *Aegis Video Titrer*, a package designed specifically for creating fancy titles like the kind you see on broadcast television. *Video Titrer* lets you type text in all the standard Amiga fonts, as well as

several custom polyfonts that you can stretch, twist, and re-size and still achieve smooth-edged letters. Any font can be rendered in dozens of styles, including block and embossed letters, three types of neon, and star auras.

Actually creating the title is simple: You choose a font and a style—in this case, the RoadRunner polyfont (a variation on the popular Broadway display font, a very New

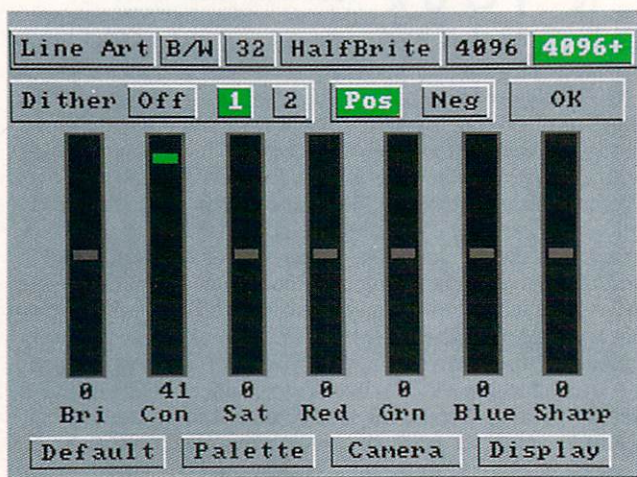


SHOT 1

What It Took to Make "Kids Take Manhattan"

The tools I used for the animated introduction to my "Kids Take Manhattan" video include

- An Amiga with one megabyte of RAM and two disk drives
- Aegis VideoTitrer* software, version 1.1, with *Aegis VideoSEG*
- A NewTek *Digi-View* digitizer, a video camera or camcorder with video-out capability, and a copy stand or tripod for holding the camera
- The SuperGen genlock from Digital Creations and Electronic Arts' *Deluxe Paint II*
- Two VCRs (or a VCR and a camcorder—the latter can be the same camcorder mentioned above)
- Two TVs (or video monitors)
- A blank tape
- The necessary cables



SHOT 2

**THERE'S ENOUGH
HEART-POUNGING EXCITEMENT
ON THE FOLLOWING PAGES
TO MAKE SANTA CLAUS
A THIN MAN.**

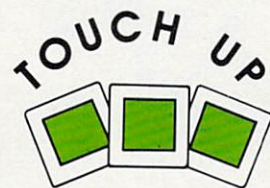
EPYX[®]

**COMPUTER GAMES THAT WILL
IGNITE YOUR HOLIDAYS.**

DESKTOP VIDEO

York-ish typeface) in the Fat Neon style. As each word is typed, it can be positioned by grabbing a handle in the center of the word with the mouse and dragging it to a new location. Creating slanted text is as simple as grabbing one corner of the word and dragging until you achieve the desired angle (see Shot 4). You can easily set text colors with a palette gadget. Once you've got the titles the way you want them, save the screen as an IFF picture file named *Slide1.pic*.

STEP 4



THE SLIDES

Now that you've created the title and digitized the art, you need to combine them to produce the second shot. The spare-page merge option in *Deluxe Paint II* can do this quickly and easily. Load the title screen on the primary page, press the J key to get to the spare page, and load the skyline screen. Return to the primary page, and choose *Merge in Back* from the Pict menu. *Deluxe Paint II* then creates a composite picture with the title overlaid on the skyline background.

Save this as *Slide2.pic*. When you wipe from *Slide1.pic* (the title on solid black) to *Slide2.pic*, it will appear that the skyline is being wiped in behind the title text.

While you're in *Deluxe Paint II*, you can adjust the colors of any picture and add graphics, such as the apple in Shot 5. Pick up graphics with the custom-brush tool and reposition them as necessary.

STEP 5

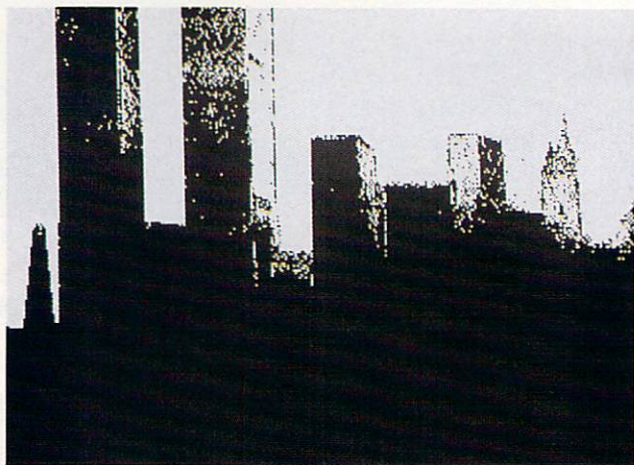


THE SLIDES

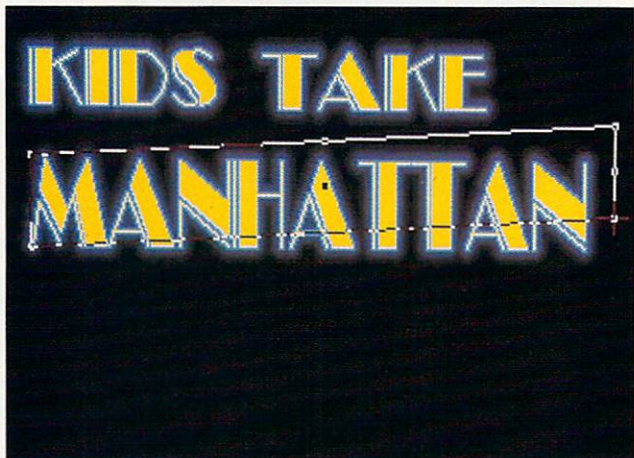
Several Amiga desktop video programs, including *Deluxe Productions*, from Electronic Arts, and Mindware International's *PageFlipper Plus F/X*, allow you to specify sequences of pictures and transitions. We'll use *Aegis VideoSEG* because it's included free with *VideoTitrer*.

(*SEG* stands for *Special Effects Generator*.)
With *VideoSEG*, you can flip from one picture to another with a wide variety of effects, using an easy-to-compile script. All options for scripting are available from dialog boxes (see Shots 6 and 7), so no typing or programming is required.

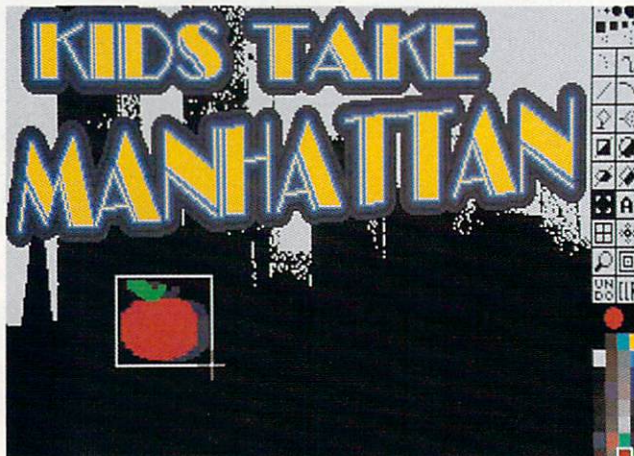
Choose *Edit* from the Video menu to see the scripting dialogs, and then simply click on your choices. Close the boxes and choose *Play AutoSingle* to see an instant replay



SHOT 3



SHOT 4



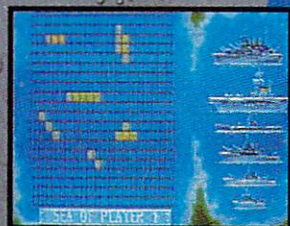
SHOT 5

YOUR BATTLESHIP JUST BIT THE BIG ONE.

Now, you're mad. Really flamed. So assess your losses, aim your guns and turn your enemy into fish food.

ONE OF THE MOST POPULAR GAMES OF ALL TIME COMES TO LIFE ON THE COMPUTER.

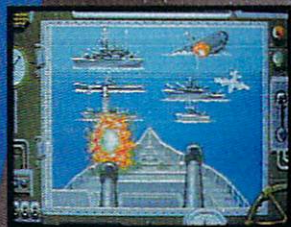
As commander of a powerful naval fleet, you'll see destroyers and carriers sinking in a cloud of smoke. Watch planes strafing by so low, you'll practically feel the pilots breathing.



Commodore 64/128, Amiga, Atari ST, IBM PC and compatibles. Battleship is a trademark of Milton Bradley used under license. © Milton Bradley. All rights reserved. Screens from Atari ST

See shrapnel flying through the air like it's the 4th of July, without a picnic.

If you're still floating when it's all over, you'll be honored in a glorious, well-deserved victory celebration.



Battleship. So real, you'll taste the salt water. Sink your opponent faster and easier using an EPYX high performance joystick.



©1988, Epyx, Inc.

EPYX

DESKTOP VIDEO

of the sequence. If you don't like what you see, return to the dialog boxes to make changes. Save the script as *Kids.script*.

STEP 6

ROLL

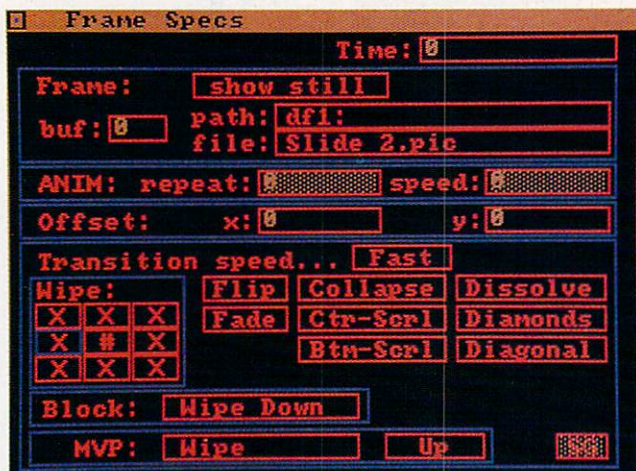


TAPE

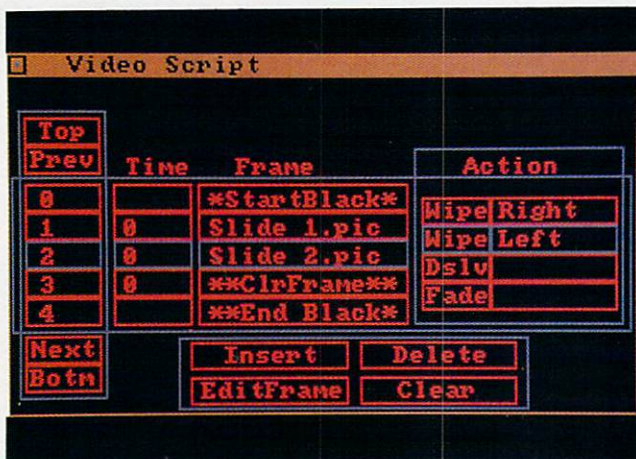
video-in and video-out jacks; video from your camcorder goes into the SuperGen, and video from the SuperGen goes into the recording VCR. Two sliders on the SuperGen control the amount of video to be shown over the background

Now you're ready to put it all together. First you need to hook up the SuperGen genlock, a device that lets you mix computer graphics and full-motion video and generate a true broadcast-quality signal for recording.

The SuperGen attaches to the Amiga's RGB port and has



SHOT 6



SHOT 7

That's a Wrap

Desktop video is primed to break into the creative, corporate, and professional video worlds in a big way. Here, three desktop video pioneers offer their perspectives on the field.

Guerrilla Videographer

New York-based Steve Jacobs, a genial descendant of the "guerrilla video" artists of the mid-1970s, had been working in low-cost video and electronic music for several years before he discovered desktop video on the Amiga. Like the early video artists, Jacobs is interested in the potential of the new desktop video medium to create videos with a sharp social consciousness. A current project is to mix images of street beggars in India and New York City—"the two places are getting more and more alike," says Jacobs—and enhance the footage with Amiga effects and sounds. He is also organizing a major Amiga desktop video competition for AmiEXPO New York—an Amiga conference and show coming up in March—with admission open to anyone. Reviewing some of the wilder submissions at Film/Video Arts in New York, a nonprofit production center where costs for editing and other services are rock bottom, Jacobs noted, "The technical quality of some of these tapes is really crude, but their energy level is really high. Look at that weird effect, with the talking mouth in reverse video showing through the face graphics. It's amazing what can be accomplished with low-tech means and high-quality imagination."

Professional on a Budget

Sian Evans, a professional producer of industrial videos and broadcast commercials, needed computer animation for a tape she was coproducing. "Our budget was tight, and the clients were very picky. They wanted real animated charts and graphs with lots of color and movement, but time on a Cubicomp [a high-end graphics animation workstation found in many video postproduction studios] costs thousands of dollars per second of finished work." With only a week to come up with the footage, Evans approached a graphic artist who had an Amiga 1000. "Although he had never done animation professionally, he agreed to try, using a 2-D color animation package called *Animator* [from Aegis Development]." Required sequences involved two charts with growing bars, a graph with a line that drew itself, and assorted titles. Backgrounds and colors were to be bright and detailed. The finished graphics were then overlaid on taped video of Morgan Grenfell employees. "We had some difficulty getting the quality of video we needed directly from the Amiga—this was before you could get an Amiga genlock—so finally, the tape had to be processed through a proc amp [an expensive signal amplifier and corrector] at a commercial editing suite. And the clients weren't sure about the low-resolution Amiga image, which made the titles look a little blockier than they were used to. But they liked the bright colors and the design, and when it became obvious that the Amiga animation would cost less than a tenth of Cubicomp work, they went for it. Now I always give clients the option of desktop video graphics, because they mostly want to save money."

Corporate Video Junkie

Electronic Arts has a place at the head of the Amiga desktop video software market and wants the same in the Macintosh II market. *Studio 8*, EA's first professional-level Macintosh II product, provides a top-flight paint program, and a slide-show utility for creating desktop presentations, as well. "We've used *Studio 8* and other EA products to create programming for orientation, training, and introducing new products," says EA's Stewart Bonn, "and desktop presentations are quite effective for that. But our people also do things that are interesting in a different way. Some people here did a desktop video parody of *Robocop* that you really have to see." Bonn, who enjoys a love affair with *Studio 8*, notes, "There's a lot of fun in this technology."

ONE MISTAKE AND IT'S THE BIG PANCAKE.

You're at the foot of one of the world's highest mountains. And you're not snapping pictures. Because this is the FINAL ASSAULT. The only mountain climbing game in the Alps or anywhere else. **IF YOU'RE AFRAID OF HEIGHTS, FORGET IT.**

You'll experience the terror and elation of one of the most grueling sports ever. And you'll be tested every step of the way.



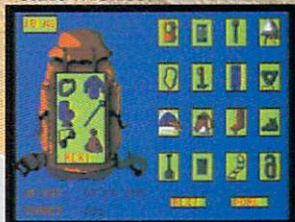
© 1988 Epyx, Inc.
Commodore 64/128,
Amiga, Apple IIGS,
Atari ST, IBM &
compatibles.
Screens from
Atari ST.



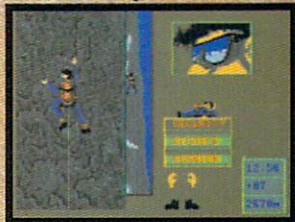
EPYX
**FINAL
ASSAULT**

Did you pick the right course? (There are six treacherous possibilities.)

What about supplies? If you run out of soup, you'll be stuck with snow sandwiches.



Forget your spikes or ice picks? You could end up a permanent part of the scenery.



If you have nerves of steel, even when you're dangling 40 feet off a cliff, you might just be one of the lucky few to plant your flag at the peak.



To make the stakes even higher, play with an EPYX high performance joystick.

EPYX

DESKTOP VIDEO

color (black, in this case) or over the entire graphic. Cue your camcorder at the point where you want to begin recording, and set the camcorder on pause. Set your VCR at record-pause as well. Now, load *VideoSEG*. Roll the VCR. Start the *VideoSEG* script. Roll the camcorder. At the right moment, smoothly push the background-color

slider and bring up video over the black parts of the picture (Shot 8). Then push the other slider and fill the entire screen with video.

You've just created a smashing introduction to your tape. If you're not happy with the timing of what you've done, just roll your tape back and try it again. ▶

The Mogul's Tools

The capability to mix computer graphics and video at low cost has been around since at least 1980, when a tiny company called Adwar Video marketed a plug-in board that let users videotape graphics from an Apple II. Despite this early start, desktop movie moguls had to wait until 1987 for sophisticated tools. Here are some of the major desktop video wares.

Amiga

Deluxe Paint II

\$129.95

Still the best paint program for the Amiga.

Deluxe Productions

\$199.95

Two-dimensional animation and slide shows in high resolution, with many special effects and precise scripting control.

Electronic Arts

1820 Gateway Dr.

San Mateo, CA 94404

(415) 571-7171

Digi-Paint

\$59.95

NewTek's popular HAM paint program.

Digi-View

\$199.95

Color-digitizer hardware and software; requires video camera.

Video Toaster

\$800-\$1,000

All-in-one frame grabber, genlock, and special-effects box. To be released in the fourth quarter of 1988.

NewTek

115 W. Crane St.

Topeka, KS 66603

(913) 354-1146

Lights, Camera, Action!

\$79.95

Script-based program that lets you combine IFF pictures, ANIM animations, Sonix scores, and IFF sounds with transitions and effects.

VideoScape 3-D 2.0

\$199.95

Sophisticated program for creating 3-D animations.

Video Titrer

\$149.95

Create snappy titles for your videos in a variety of fonts and styles, including neon.

Aegis Development

2210 Wilshire Blvd.

Suite 277

Santa Monica, CA 90403

(213) 392-9972

Perfect Vision

\$249.95

Color realtime frame grabber; requires color splitter for VCR grabbing.

SunRize Industries

3801 Old College Rd.

Bryan, TX 77801

(409) 846-1311

SuperGen

\$749.95

Top-of-the-line genlock with notch filter and variable overlay.

Digital Creations

2865 Sunrise Blvd.

Suite 103

Rancho Cordova, CA 95670

(916) 344-4825

Macintosh

MacVision

\$399.95

Black-and-white digitizer for all Macintoshes. Accepts input from any video camera.

Koala Technologies.

269 Mt. Hermon Rd.

Scotts Valley, CA 95066

(408) 438-0946

Storyboarder

\$495.00

Produce black-and-white animated storyboards with *MacPaint* graphics; transitions and special effects; for all Macintoshes.

American Intellware

P.O. Box 6980

Torrance, CA 90504

(213) 533-4040

Studio 8

\$495.00

Feature-laden color paint program with roots in *De-*

luxe Paint II; for the Macintosh II. Contains built-in slide-show/presentation program.

Electronic Arts

1820 Gateway Dr.

San Mateo, CA 94404

(415) 571-7171

VideoWorks II

\$295.00

Well-designed 2-D animation, storyboarding, and slide-show program for all Macintoshes; works in color on the Macintosh II. Also available: *HyperCard* animation driver, clip animation disks, and professional version.

MacroMind

1028 W. Wolfram St.

Chicago, IL 60657

(312) 871-0987

Apple II, IIGs

ComputerEyes

\$129.95 (Apple IIe); \$249.95

(Apple IIGs)

Black-and-white video capture device that works with any composite video source.

Versions also available for

IBM, Macintosh, 64/128,

Atari, Atari ST.

Digital Vision

66 Eastern Ave.

Dedham, MA 02026

(617) 329-5400

Home Video Producer

\$49.95

Video titling and graphics, with wipes and scrolls. Versions also available for Commodore 64/128, IBM, and Atari.

Epyx

600 Galveston Dr.

Redwood City, CA 94063

(415) 366-0606

PaintWorks Gold

\$99.95

Versatile paint program with animation capabilities.

Activision

3885 Bohannon Dr.

Menlo Park, CA 94025

(415) 329-0800

IBM PC

Splash!

\$99.95

A 256-color paint program that accepts direct input from the ComputerEyes video digitizer.

Spinnaker

One Kendall Sq.

Cambridge, MA 02139

(617) 494-1200

Video Charley

\$749.95

Includes a genlock, RGB encoder, keyer, paint box, and character generator.

Progressive Image Technology

322 E. Bidwell St.

Folsom, CA 95630

(916) 985-7501

Commodore 64/128

Picasso's Revenge

\$59.95

Color paint program with programmable slide show.

Progressive Peripherals

464 Kalamath St.

Denver, CO 80204

(303) 825-4144

Video Title Shop

\$29.95

Titling and graphics program, with a wide variety of transitions.

IntelliCreations

19808 Nordhoff Pl.

Chatsworth, CA 91311

(818) 886-5922

Photo courtesy of 4-Wheel & Off-Road Racing Magazine.



FOR THOSE OF YOU WITH AN OFF-TRACK MIND.

Get ready for four of the most challenging, rugged, rump-bumping cross

country road racing courses this earth has to offer. Fight the torturous terrain of Baja. Rocks, boulders, skid-sand, even a few spikey cactuses. And of course, heat that's hot enough to fillet any forehead. Ever had your hands stuck to the wheel? Permanently. You will when you endure the longest winter of your life in the ice, sleet and slosh of The Michigan Course. The Georgia Red Clay Course has enough mud to keep you a human fossil for 2,000 years. And then there's Death Valley. Get it. D-E-A-T-H Valley.

Start with pre-race strategy. Select and customize your personal vehicle. Your supplies. Your repair equipment. Believe us. You'll need everything.

There are boulders, rivers, potholes, and mudbogs to contend with. What are mudbogs? You'll find out. (Just after you find out there's a Demon 4 x 4 chasing you all through the race. A Demon hellbent on your destruction.)

If you win enough races, collect enough points, only then will the Victor's Cup be yours. It's the least we can do. After all, you did go through hell to get there.



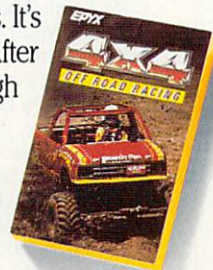
Plenty of thrills guaranteed on the following grounds: gumbo mud, packed snow, skid-sand, and the scrubbiest terrain south of the border.

country road racing courses this earth has to offer.

Fight the torturous terrain of Baja. Rocks, boulders, skid-sand, even a few spikey cactuses. And of course, heat that's hot enough to fillet any forehead. Ever had your hands stuck to the wheel?

4x4 OFF-ROAD RACING BY EPYX

Commodore 64/128, IBM & compatibles, Amiga



DESKTOP VIDEO

THE PROMISE



OF DTV

With a little planning and the right tools, you can add desktop video effects to any videotape you shoot, progressing from relatively simple efforts like this one to complex sequences combining 3-D animation, live video, performances, music, sound effects, and more.

With the high sophistication and ease of use of the new desktop video tools, your video imagination need no longer be contained by technical limitations—even the pros are amazed at what you can do with a home computer, a camcorder, and a few software packages. There's nothing to stop you from making your mark as one of the new breed of desktop movie moguls. □



SHOT 8

How Desktop Video Works

NTSC, RS-170A, Subcarrier phase, Horizontal and vertical sync. The jargon of video is likely to make a computer user's head swim. That's because video comes out of the alien world of analog electronics, where the nice, simple digital rules that make computers so easy to understand just don't apply. To help you get your bearings, here's a much-simplified explanation of how video works and how it mixes with computer graphics to create desktop video.

Let's follow the video signal as it travels through a typical desktop video system. First, a color video camera takes an external image—say, a rose—focused by the camera lens on a charge-coupled device or video tube and converts it into an analog (waveform-type) signal. In an analog video signal, information about the three video colors in the image—red, green, and blue—is mixed together with information about the black and white values of the image (called the *luminance* part of the signal) and sync information (which controls and times the signal). This mixed signal, called *composite video*, is the type used by all consumer and nearly all professional video equipment. To yield acceptable quality, a composite signal should meet a standard known as *RS-170A*, set by the National Television Standards Committee (NTSC). References by desktop video enthusiasts to the terms *composite video*, *NTSC video*, or *RS-170A video* mean good-quality, standard television-type video.

The camera image can be displayed on a color video monitor or standard TV. Inside the monitor or TV is a cathode ray tube (CRT) containing one or more electron guns that spray an electron beam across a field of tiny phosphor dots on the back of the monitor screen; these dots glow when hit by the beam. The beam scans left to right 15,750 times a second, zipping back and forth while moving top to bottom, making a new image 525 scan lines high every 1/30 second. That image is called a video *frame*. The signal from the camera contains the color and sync information necessary to vary the electron beam so that it activates only those phosphor dots that will create an image of the rose on the screen.

Now let's feed the composite signal into a computer. But wait a minute; that doesn't work, because no computer uses composite video to generate images on the computer display. Instead, color computers use the RGB video system, in which digital information about the red, green, and blue components of an image is sent to a display that understands digital information (an IBM-type TTL monitor, for example); or it's converted into an analog RGB signal for analog computer monitors like those used by the Amiga or the Macintosh II. The

composite and RGB video systems are incompatible, naturally, so any incoming composite signal has nowhere to go. Some computers, such as the Amiga and the Apple IIgs, do provide circuitry to convert the computer-generated RGB signal into a composite signal (available through a video-out jack in the rear panel) that can be recorded by a VCR or displayed on an ordinary TV, but the output is generally not up to RS-170A snuff.

To the rescue come two devices. The most useful is the *genlock*, a device that synchronizes video sources and in this case, computer graphics with video—for recording to a VCR. For example, with your composite signal routed through a genlock and into the computer, you can display the live video picture of the rose in place of a selected color in an RGB computer graphic. You can't modify the incoming video from your computer, but you can mix RGB computer graphics and composite live video and record both on tape. A genlock is virtually a necessity for desktop video; most better genlocks provide a high-quality RS-170A output for your computer, as well as providing a video-in jack, which no current computer offers.

The other method for getting composite images into your computer is using a *frame grabber*: hardware for capturing a video still from a live or taped source, storing it, and converting it to RGB computer graphics that you can manipulate directly with a graphics program. *Video digitizers* work somewhat the same way, taking a video camera signal and converting it into the RGB format and a picture file type your computer uses.

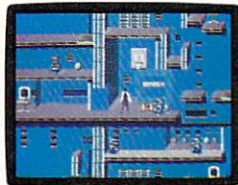
Now you can manipulate the captured or genlocked image. You can use a paint program to add color graphics over live video. Titling programs add text over your video; better programs let you scroll, wipe, and dissolve titles, too. Captured or digitized images can be modified with image-processing software. Animation programs create two-dimensional or three-dimensional moving pictures that can be laid over live video or dumped to a disk or a VCR as pure animation.

For recording, the signal, which contains the complete image information (live video mixed with computer graphics), comes out of the video-out jack of the computer or the genlock as a composite signal. This, in turn, goes into the line-in jack of a VCR, where it's recorded to tape. VCRs are classified by the width of tape they accept, with wider tape generally yielding better-quality recordings. Consumer VCRs (1/2-inch VHS, Beta, and 8mm) give acceptable but not professional results, while the pros use 3/4-inch, 1-inch, and 1/2-inch Betacam (a broadcast version of Sony's Betamax), and the new 1/2-inch Super-VHS and ED-Beta formats.

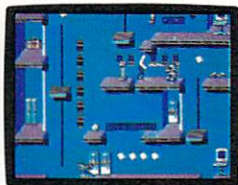


IF THIS IS THE FUTURE, THEN YOU'RE HISTORY.

Hold it. What's this? Human-seeking suicide robots? An evil mastermind



There are 8 office towers to search, each with its own theme and level of difficulty.



Of course, Elvin's floor plans are almost as complicated as his global plans.

bent on world annihilation?

No wonder they call this mission impossible. Why, it's got even more strategy and action than the original top-selling Impossible Mission.™

The trick here is to collect the

secret code numbers that will ultimately allow you to access Elvin's stronghold. And waste him before he wastes the world.

There are over 50 rooms to search for codes. Careful. The floors and catwalks in this place end a little abruptly. And of course, they're guarded by those pesky bots. But you've got an MIA9366B pocket

computer to help you crack the security code. A working tape player to play music clues. And a map to show which towers you have or have not searched.

Go then. Elvin is preparing to launch his missile attack in less than ten hours. You must stop him. Or the world will be terminally late for dinner tonight.

IMPOSSIBLE MISSION II BY EPYX®

Commodore 64, IBM & compatibles,
Atari ST, Apple II & compatibles, Amiga





COMPUTE!'s Holiday Gift Guide

Looking for that perfect holiday gift idea?
Look no further than your nearest microchip.

Edited by Heidi E. H. Aycock

You've wanted to play the newest Ultima all year, but you've resisted buying it because you thought someone might give it to you for the holidays. Instead, you'll probably receive a digital potato peeler. It serves you right, though; you've been giving chirping key chains for the last two years.

Stop buying neon ties and quilted toilet seats. Stop making your best friend stand in exchange lines on the busiest shopping day of the year. Stop buying presents that just take up space. If you want to brighten the holiday season of that special home-computer owner in your life, wander through the aisles of COMPUTE!'s first annual gift guide. You're sure to find the perfect present—one that's useful and fun.

Remember toys? As children, we snapped ribbons and ripped paper to find fascinating diversions of all kinds. Even though we're older, we'd love to get toys again. Computer owners have a veritable universe of choices: fantastic adventures, arcade battles, and philosophical puzzles.

Have friends with no time for toys? Get them work-saving devices: productivity packages, disk books, quick-reference cards, and printer buffers.

Bring out the artist in a favorite relative. Give a program that encourages creativity: paint programs, heat-transfer t-shirt ribbons, animation programs, and clip art.

On our list, you'll find gifts for the computer owner's bookshelf: PC reference guides, and Macintosh tips and utilities.

And only a few of these presents need to be a certain size or color to fit the person who's receiving them. They all cost less than \$500—most cost less than \$200. Each section is devoted to one machine, but some of the gifts in a section may be available for other computers as well.

Have fun looking for gift ideas, and choose something for yourself, too. If all else fails, you can always give a subscription to a certain home computer magazine . . . such as . . . oh, I don't know . . . maybe, COMPUTE!.



When you see this icon in "COMPUTE!'s Holiday Gift Guide," you'll know that the item is available for a variety of computers.

TEST DIVE ONE FOR YOURSELF.

In their day, they ruled over three quarters of the earth's surface.

During WWII, they viciously brought Britain to her knees. And Japan to the ground.

These were the silent killers: Tench. Gato. U-Boat.

And now, they return. In this, the most realistic, all-encompassing simula-



TAKE OUR PREVIEW DISK FOR A SPIN. Drop this coupon in the mail with your check or money order payable to Epyx, and we'll gladly send you to the South Pacific to have it out with an enemy fleet.

Mail to Sub Battle Preview, SoftMail, 2995 Woodside Road, Suite 400-383, Woodside, CA 94062.

	Quantity	Total
Apple & compat. (128K)	_____	\$3.75 ea. _____
Commodore 64/128	_____	\$3.75 ea. _____
IBM PC/compat. 5¼"	_____	\$3.75 ea. _____
Atari ST	_____	\$4.25 ea. _____
Macintosh	_____	\$4.25 ea. _____
Apple IIGS	_____	\$4.25 ea. _____
Total Disks Ordered	_____	Total Enclosed _____

Name _____ Phone () _____

Address _____ Age _____

City/State/Zip _____

Canadian orders please add 50 cents for additional postage. Please allow 4 to 6 weeks for delivery. Offer expires 9/30/89 and is valid only in the continental U.S. and Canada. Void where prohibited.

013

And the contents of a vital target book, among other things.

Your arsenal will include deck and anti-aircraft guns. Torpedoes. And mines.

But even all that may not be enough.

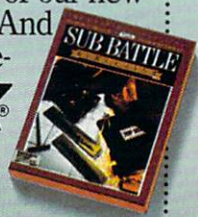
Because besides the risk of bumping a depth charge or facing a killer Destroyer, you'll still have to contend with the gunfire of enemy aircraft.

No simulation has ever had the degree of authenticity, gut-wrenching action or historical accuracy of this one.

The first release of our new Masters Collection. And a challenge of unbelievable depth.

EPYX®

Apple II & compatibles, Apple IIGS, Atari ST, C64/128, IBM & compatibles, Macintosh.



tion ever created for the personal computer.

You will command one of six types of American subs or German Kriegsmarine U-Boats, during any year from 1939 to 1945. You'll perform one of over

60 missions. Or you'll engage in the most difficult task of all: To make it through *the entire war*.

Each vessel is completely unique and painstakingly authentic, so you'll have a lot to learn: Navigation. Weather. Radar.

The No. 1 battery. The ship's heart.

Your ammo.

The 360° periscopes.

The sealed control room. Your HQ.

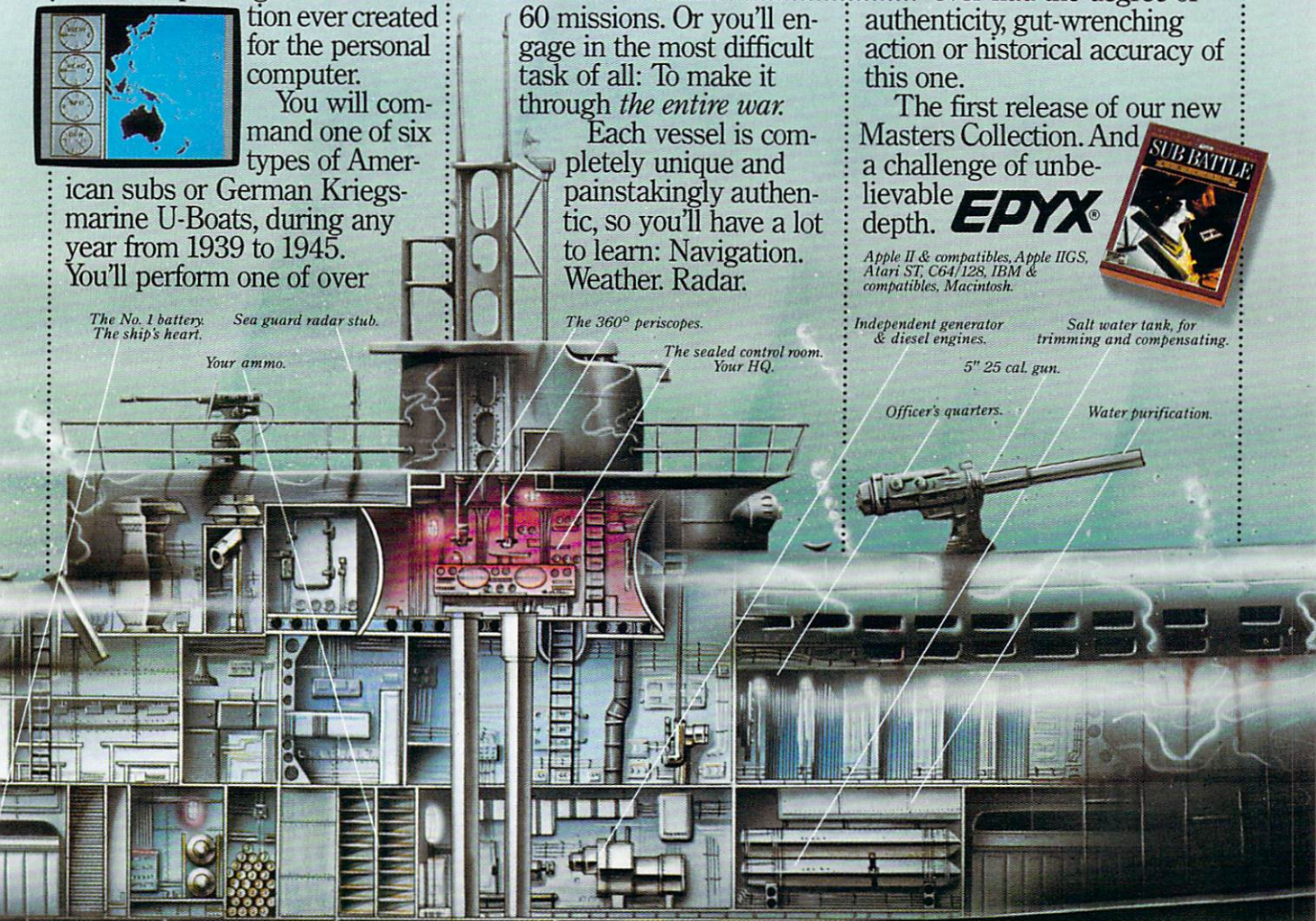
Independent generator & diesel engines.

Salt water tank, for trimming and compensating.

5" 25 cal. gun.

Officer's quarters.

Water purification.





Photos © 1988 by Mark Wagoner

COMPUTE!'s Holiday Gift Guide

MS-DOS Gifts

- 1 ZEOS/RS (\$79.95)** is a great gift for PC users who want the added power and convenience of a 101-key enhanced keyboard, but who don't have the desk space. A full AT-style keyboard, the ZEOS/RS has a 25-percent smaller footprint than the traditional enhanced keyboard. Contact ZEOS, 530 5th Avenue NW, Suite 1000, St. Paul, Minnesota 55112; (800) 423-5891.
- 2 Microsoft's Mouse (\$150)** not only moves its proud owner into computing's fast lane, but, with its classic good looks, it's an *object d'art* and conversation piece, too. No other computer add-on boosts a PC's performance more than a mouse. Microsoft's mouse is available in bus and serial versions and comes bundled with *PC Paintbrush*, a drawing program. Contact Microsoft, 16011 NE 36th Way, Box 97017, Redmond, Washington 98073-9717; (800) 426-9400.
- 3 The Topspot Computer Programmer's Quick Reference Chart (\$15, plus \$1 for shipping)** is an attractive 24 x 36 inch poster that lists the PC's 256 ASCII codes and their screen representations. Almost everyone needs an ASCII chart now and then, but one never seems to be around in these crucial moments. Topspot's bonuses include keyboard scan codes, color codes, hex conversions, box drawing figures, and musical note frequencies. Discounts are available for multiple orders. Contact Topspot, P.O. Box 881, Marion, Iowa 52302-0881; (319) 377-0207.
- 4 The Entry Level PC Toolkit (\$28.95, plus \$3.75 for shipping)** is a collection of all the tools most PC users will ever need. A PC isn't a water heater, but many users install new cards and chips with ordinary household tools. A PC is special, and it demands special tools like the ones included in this package. The tools are housed in an attractive zip-up case. Contact Tipz Computer Accessories, P.O. Box 690, San Francisco, California 94101-0690; (800) 367-8479 or (415) 626-4333.
- 5 Tree86 (\$89.95)** may actually live up routine file maintenance. *Tree86* integrates your favorite file browser (a powerful one is provided if you don't have a favorite) and editor, and it allows you to run programs and shell to DOS. With a mouse, it's almost as much fun as an arcade game. Contact The Aldridge Company, 2500 CityWest Boulevard, Suite 575, Houston, Texas 77042; (713) 953-1940.
- 6 Running MS-DOS, 3rd Edition (\$22.95) and Supercharging MS-DOS (\$18.95; \$34.95 with companion disk)** are two *musts* for every PC user's bookshelf. Both are written by Van Wolverton. The first title is a solid introduction to DOS commands and batch files. The second volume moves an intermediate reader into the exciting, rarified atmosphere of the power user. Contact Microsoft Press, 16011 NE 36th Way, Box 97017, Redmond, Washington 98073-9717; (800) 638-3030, or (800) 824-7300 in Maryland.
- 7 PC-DocuRefs (\$19.95)**, quick-reference templates, make many PC programs easier to use. They're useful for beginners but complete enough for power users. References are for DOS, *dBase III*, *Microsoft Word*, *Lotus 1-2-3*, *WordPerfect*, and *MultiMate Advantage*. Contact Systems Management Associates, 3325 Executive Drive, Suite 210, Raleigh, North Carolina 27609; (919) 878-3600.

Commodore 64/128 Gifts

- 1 Reach for the Stars, Third Edition (\$39.95)**, SSG's brilliant flagship game, has just received its second face-lift. A strategic game of galactic exploration and conquest, RFTS is far less flashy than most 64/128 games, but for depth of strategy and sheer playability, it's unbeatable. Add to this an extensive list of play options and you have a true winner. Contact Electronic Arts, 1820 Gateway Drive, San Mateo, California 94404; (415) 571-7171.
- 2 The Commodore 1581 Disk Drive (\$249.95)** takes advantage of the current popularity of 3½-inch floppy disks. The 1581 stores 880K on each disk and offers much faster disk access than the 1541. It's unlikely that the older drive will ever be disposable—64/128 products will always be released in 5¼-inch format—but as a second drive, particularly an applications drive, the 1581 can solve a number of headaches. Contact Commodore Business Machines, 1200 Wilson Drive, West Chester, Pennsylvania 19380; (215) 431-9100.
- 3 Empire (\$49.95)** comes packaged with a warning that addiction will result in lost productivity. *Empire's* user interface is perhaps the best offered in the crowded software market, and it nearly forces you to keep taking just one more turn. This is a strategy war game in which you try to conquer all the cities on an alien planet (the cities have strangely unalien names). The problem is that your opponents think you should be conquered instead. Contact Interstel, P.O. Box 57825, Webster, Texas 77598; (713) 486-4163.
- 4 Sky Travel (\$49.95)** lets you watch the sky from anywhere on earth and from a variety of perspectives. Speed up time and watch the sky change from sunset to sunrise. Track the progress of Halley's comet. Watch the night sky over Bethlehem at the time of Jesus's birth. A wealth of detail provides an excellent learning environment for children, and those of us who have dabbled in astronomy for years will discover a number of surprises. Contact Microlusions, 17408 Chatsworth Street, Granada Hills, California 91344; (818) 360-3715.
- 5 Superstar Ice Hockey (\$34.95)** stands out in the crowded sports-videogame field. Mindscape's *Superstar Ice Hockey* is the only good hockey program around, and even though it's hardly a simulation, it offers a reasonably good feel for the flow of the game. You can even act as general manager, negotiating trades that make the Gretzky deal look like small potatoes. Contact Mindscape, 3444 Dundee Road, Northbrook, Illinois 60062; (312) 480-7667.
- 6 The GEOS line (price varies for each product)** includes the GEOS operating system, *geoPublish*, and other applications. Berkeley Softworks continues its project of giving the 64/128 a Macintosh-style interface, and the results are impressive. You must have GEOS (\$59.95) to use the other applications, but the operating system is packaged with a word processor, a paint program, and a series of utilities. Add whatever you need: *geoCalc* (\$49.95), for spreadsheet enthusiasts; *geoFile* (\$49.95), to handle database demands; or *geoWrite Workshop* (\$49.95), for advanced word processing. GEOS applications require a mouse. Contact Berkeley Softworks, 2150 Shattuck Avenue, Berkeley, California 94704; (415) 644-0883. ▶



Overwhelm your favorite driver

Five reasons this season for Escort and Passport

Joy #1 Giving the Very Best

Remember those few times when you came up with the perfect gift? The recipient was so overwhelmed he kept asking how you knew...

That's the effect Passport and Escort have on drivers, because drivers know what the experts say about radar detectors.



Car and Driver has tested radar detectors six times in the last ten years, and we've come out on top each time. In 1987 they even called us "the leader of the radar detector industry." And *Road & Track* has rated us "the leader in detector technology."

For the driver on your list, no other gift is as sure to please.

Joy #2 The Exclusive Source

We designed Passport and Escort, we make them in our own factory in Cincinnati, and only we sell directly to you. Not through stores.

Our direct connection to you assures fast response on orders, on questions, and on repairs. We take care of everything.

As a gift giver, you benefit even more. It will be obvious you cared enough to seek out the exclusive source. And there's no chance the recipient will see Passport and Escort in the after-Christmas clearances.



The exclusive source, our headquarters in Cincinnati, Ohio.

Joy #3 Incredibly Easy Shopping

Just call us toll-free (1-800-543-1608). You'll avoid traffic jams, parking hassles, pushy crowds, and long lines.

Instead you'll find a friendly radar expert who can answer any questions you may have. Just pick up the phone.

If you order before 5:00 PM eastern time Monday through Friday, we'll ship your package the same day. A gift box is available at no extra charge, and we pay for delivery by UPS.

(If you're really in a hurry, see Joy #4.)



Call toll free 1-800-543-1608

Joy #4 You Can Have It Tomorrow

We know that sometimes the holidays can sneak up, and waiting even a few days for the UPS truck is waiting too long. But here's the solution:

Through a special arrangement with Federal Express we can offer their overnight delivery for only \$10. Just call us before 8:00 PM eastern time, Monday through Friday, and your package will arrive the next day. If you're a last-minute shopper, you've come to the right place.

UPS shipping is free.
Overnight delivery by
Federal Express is only \$10.

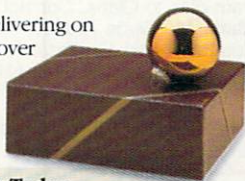


Joy #5 Satisfaction Guaranteed

Here's the best joy of all: Passport and Escort are guaranteed to please. Quite simply, if for any reason you're not totally satisfied within the first 30 days, just return your purchase.

We'll immediately refund all your money and all your shipping costs. There are no hidden charges. Passport and Escort are also covered by a full one year limited warranty.

We've been delivering on these promises for over ten years. Call now and see how easy gift-giving can be.



Order Today

TOLL FREE... 1-800-543-1608
(Mon-Fri 8am-11pm, Sat-Sun 9:30-6 EST)



PASSPORT
RADAR • RECEIVER

Pocket-Size Radar Protection
\$295 (Ohio residents add \$16.23 tax)

ESCORT
RADAR WARNING RECEIVER

The Classic of Radar Warning
\$245 (Ohio residents add \$13.48 tax)

Cincinnati Microwave
▶ Department 6568D8
One Microwave Plaza
Cincinnati, Ohio 45249

© 1988 CMI



COMPUTE!'s Holiday Gift Guide

Apple II Gifts

- 1 **An AppleWorks upgrade (\$75)** is the best present you could give an *AppleWorks* owner. Its most significant enhancement is a mail-merge feature that makes it easy to create form letters and mass mailings. *AppleWorks 2.0* is also the only version that runs on the IIGs, and you'll need it if you want to use the Timeout series of *AppleWorks* add-on programs. Unfortunately, it's going to be hard to surprise anyone with an upgrade to *AppleWorks 2.0* since you must send the original program disk to Claris. Contact Claris, 440 Clyde Avenue, Mountain View, California 94043; (800) 544-8554 or (415) 962-8946.
- 2 **The Print Shop Graphics Library Holiday Edition (\$24.95)** and **Party Edition (\$34.95)** are good gifts if you're tired of paying too much for greeting cards that don't say what you want to say. Use these clip-art collections with *The Print Shop*, a best-selling Apple II program, to create customized greeting cards, banners, and signs. *Holiday Edition* contains graphics for more than two dozen holidays, including Christmas, Hanukkah, New Year's, and Thanksgiving. *Party Edition*, available for the IIGs only, offers a number of useful holiday graphics. Contact Broderbund, 17 Paul Drive, San Rafael, California 94903; (800) 527-6263.
- 3 **AppleLink—Personal Edition (\$35)** is a perfect holiday buy if there's a modem next to that Apple II. It's the software package and communications-service membership that lets you ask Apple questions, download software, talk to other Apple owners, and do much more. AppleLink—Personal Edition includes spe-

cial menu-driven telecommunications software, a year's subscription to the service, two free hours of connect time, and a monthly AppleLink events guide. The software (available for the IIGs and IIGs) makes telecommunications as simple as possible—in most cases just a point and a click of the mouse gets you from place to place within AppleLink. Contact your local Apple dealer.

Heat-transfer ribbons (\$6.50) can help you make some money—rather than spend it—during the holidays. With one of these special heat-transfer ribbons, you can bring in the bucks by creating customized T-shirts. Here's how it works. Replace the ribbon in the ImageWriter with a heat-transfer ribbon, draw a picture with a graphics program, and print the picture on regular paper. Then transfer the image to a T-shirt with an ordinary iron. Heat-transfer ribbons are widely available and come in several colors. One source is Renco Computer Supplies, which sells red, blue, purple, yellow, green, brown, and black ImageWriter I/II heat-transfer ribbons. Contact Renco Computer Supplies, P.O. Box 475, Manteno, Illinois 60950; (800) 522-6922, or (800) 356-9981 in Illinois.

SafeSkin (\$29.95) will save an Apple owner from a heart attack by protecting the keyboard from spills. You can't wrap your Apple in plastic, but you can do the next best thing: put plastic over the keyboard. SafeSkin, a clear, protective covering for keyboards, comes in models specific to the Apple IIe, IIc, or IIGs. Molded from flexible plastic, the SafeSkin fits snugly over the entire keyboard, yet con-

forms so closely to the keys that you hardly notice it's there. Contact Merritt Computer Products, 4561 South Westmoreland, Dallas, Texas 75237; (214) 339-0753.

DISCoasters (\$9.95) fight unsightly rings that develop when people leave cold drinks next to the household's Apple IIc Plus or IIGs. You get six computer coasters, each one a replica of a 3 1/2-inch disk. They're available in a variety of colors and designs (don't tell anyone, but the artwork was created with a Macintosh, not an Apple II). Contact Publishing Ink., 521 State Street, Glendale, California 91203; (818) 500-7857.

Amiga Gifts

- 5 **The EPYX 500XJ Joystick (\$19.95)** has a comfortable grip and a trigger-finger button instead of a thumb button. Its design gives you a real sense of firing those Sidewinders and 50mm Vulcans. The compact 500XJ is a perfect companion gift for arcade games of all kinds, and it gives you excellent Amiga compatibility. Contact Epymax, 600 Galveston Drive, P.O. Box 8020, Redwood City, California 94063; (415) 366-0606.
- 6 **Print'nWear! Transfer Paper (\$15.95 per ten-sheet pack)** lets you put original computer-generated color designs on T-shirts and sweatshirts. First, draw a picture on your Amiga using a paint program or digitizer. Then print it on the Print'nWear paper with a color printer, or use crayons to color black-and-white printouts. Iron the transfer onto the
- 7 **Amiga 500 Command Center (\$99.95, \$149.00, and \$170.00)** will help if you're tired of peering down at your Amiga 500's monitor. The Command Center provides a convenient stand for the monitor, as well as slots for holding an external disk drive, a hard drive, floppy disks, and more. A deluxe version includes a power strip, surge protector, noise filter, remote switch, and fan. Among the available accessories are a heavy-duty power supply, a hard drive, a tilt/swivel monitor stand, and a custom dust cover. Contact Ketek, P.O. Box 203, Oakdale, Iowa 52319; (800) 626-4582.
- 8 **The Avatex 1200E Modem (\$69)** is a low-priced, completely Hayes-compatible modem that comes with autodial and autoanswer, eight LED indicators, tone or pulse dialing, CCITT compatibility, call-progress detection, an internal speaker, and free Amiga communications software. A two-year warranty and toll-free customer assistance are also included in the package. Contact Megatronics, P.O. Box 3660, Logan, Utah 84321; (800) 232-6342.
- 9 **Virus Infection Protection (\$49.95)** inoculates your Amiga disks against computer viruses that can be contracted from public domain programs on some bulletin boards and information services. V.I.P. won't heal infected disks, but it will protect healthy ones. Contact Discovery Software International, 163 Conduit Street, Annapolis, Maryland 21401; (301) 268-9877.
- 10 **Sculpt 3-D (\$99.95)** and **Animate 3-D (\$149.95)** offer easy entry into the esoteric world of 3-D animated computer graphics. Draw 3-D, ray-traced, 4096-color objects from top, side, and front views with *Sculpt 3-D*, move them in infinite space with *Animate 3-D*, and then record them on a VCR. Direct your own *Tron* film, or craft presentations and simulations that will blow your viewers through the wall. Contact Byte by Byte, Arboretum Plaza II, Suite 150, 9442 Capital of Texas Highway North, Austin, Texas 78759; (512) 343-4357.
- 11 **GOMF 3.0 (\$74.95 with hardware and software; \$39.95 with software only)** will ease the minds of Amiga users who dread software crashes. In the event of a software crash, the GOMF package can help you save data and fix errors—before the crash takes place.

continued on page 38

Christmas Sale!

The Tandy® 1000 SL

Save \$100 on
this easy-to-use
PC compatible.



Great holiday savings on this powerful computer with built-in MS-DOS® and DeskMate® software—only \$799.

Start computing Christmas morning with the Tandy 1000 SL—now at a terrific low price. Or purchase the 1000 SL complete with a CM-5 color monitor for just \$1098.95.

MS-DOS and DeskMate are built into ROM, so you can move quickly from start-up to MS-DOS programs, or go directly into our DeskMate multi-applications software.

With DeskMate, you're ready to start computing right away with ten popular applications to write letters, prepare budgets, file information and even draw colorful pictures. There's also a spell checker, address book, Hangman word game and PC-LinkSM on-line information service.

As an added bonus, there's a Music program as well as a sound-editor

program that lets you record and edit music, voice or other sound effects onto your 5 1/4" diskettes. This latest breakthrough in computer-audio technology delivers outstanding speech and music capabilities which will generate new life into programs.

Come in to Radio Shack today. The Tandy 1000 SL is a gift the whole family will love.

Tandy® Computers: Because there is no better gift value.™

Sale ends 12/24/88. Tandy 1000 SL reg. \$899. CM-5 monitor reg. \$299.95. Prices apply at Radio Shack Computer Centers and participating stores and dealers. DeskMate communications require modem. MS-DOS/Reg. TM Microsoft Corp. PC-Link/SM Quantum Computer Corp.

Radio Shack®
The Technology Store

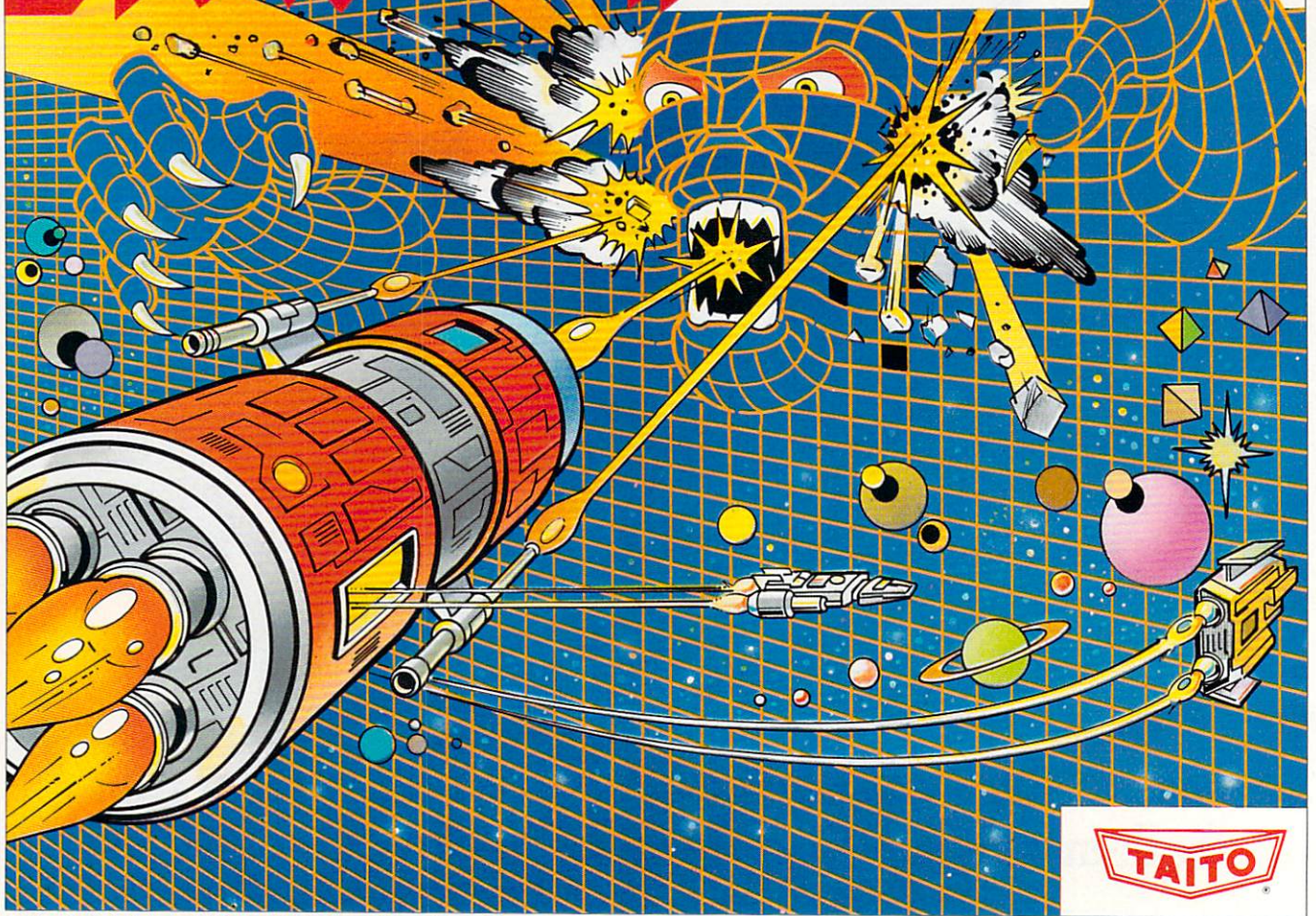
A DIVISION OF TANDY CORPORATION

FIVE WAYS TO MAKE YOUR PC **SCREAM**. ONE...

SUDDENLY, SPACE IS A DEADLY PLACE...

ARKANOID

There's no turning back. No place to run—no place to hide. They've destroyed your planet and now they're coming after you. Their destruction is your only chance for survival. It won't be easy, but survival never is.



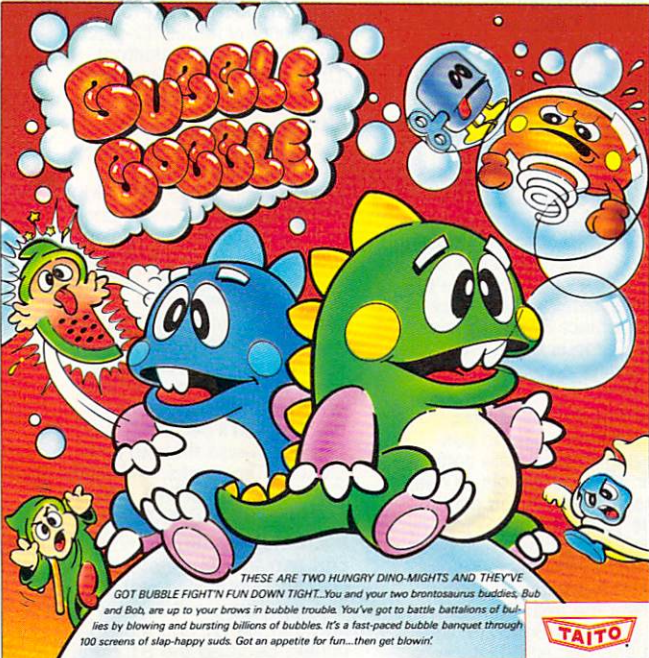
TAITO

Don't settle for imitations. Add the arcade classic voted "one of the best home video games ever" by Electronic Game Player Magazine to your video collection.

...TWO, THREE, FOUR, FIVE.



Now you can blast into one of the hottest arcade space games right in your own home. It's the ultimate inter-planetary combat. You've never seen action like this on your home computer!



The #1 game in Europe for over 3 months. Scramble through 100 screens of laughs as your brontosaurus buddies, Bub and Bob, drive you crazy with non-stop action.

If you want to make your PC explode with action you've got to give it dynamite games. These are the world famous original arcade screamers. Arkanoid™, Alcon™, Bubble Bobble™, Renegade™ and Sky Shark™ will make your PC do things you didn't think were possible.

Everyone knows that arcade games are the benchmark for all other video games and Taito has



This is the original arcade hit. Thrill to the arcade quality graphics of this fast-paced, street-style karate brawl. Find out what real action is all about!



Take the arcade's meanest air battle home for keeps. Strap in for explosive high-flying action. Hold on for your life as you soar through incredible graphics.

been an arcade leader since 1953. Since then we've made over 1,000 classics for arcade and home play. Count on Taito to bring the heat of the arcade to your home computer.

Buy Taito products at leading stores everywhere. Visa/Mastercard holders can order direct anywhere in the United States by calling toll free 1-800-663-8067.

Taito® Arkanoid™, Renegade™, Alcon™, Bubble Bobble™, Sky Shark™ are trademarks of Taito America Inc. Copyright © 1988. All rights reserved.



reserved. IBM and IBM PC are trademarks of International Business Machine. Advertisement by: Qually & Company, Inc. (Chicago).

FULL 16 COLOR EGA AND TANDY GRAPHICS. 4 COLOR CGA ALSO SUPPORTED • AVAILABLE IN 3.5" AND 5.25" FORMATS • COMING SOON, THE CLASSIC MIND GAME, QIX.



COMPUTE!'s Holiday Gift Guide

The GOMF button (a real button you install on your computer) lets you save data even after a crash or a total lockup. Contact Hypertek/Silicon Springs, 812 Surrey Street, New Westminster, British Columbia, Canada V3L 4W2; (800) 663-8526.

COMPUTE!'s Amiga Games Disk (\$11.95, including postage) offers 15 of the best Amiga games from *COMPUTE!'s* archives, including some gems never before published. The disk includes shoot-'em-ups, strategy games, and more, with documentation for each game on the disk. A great value for game fanatics. Contact *COMPUTE!'s* Amiga Games Disk, P.O. Box 5188, Greensboro, North Carolina 27403.

Macintosh

1 The Grappler LQ (\$149) may be just as good wrapped up for the holidays as a Macintosh-compatible letter-quality printer. This printer interface will connect a Macintosh to non-Apple letter-quality printers, laser printers, and ink-jet printers. Contact Orange Micro, 1400 North Lakeview Avenue, Anaheim, California 92807; (800) 223-8029; in California, (714) 779-2772.

2 The DiskBook-Plus (\$37.95) holds sixteen 3½-inch disks in a handy-dandy notebook that also has pockets for manuals, papers, pens, and other necessities. By now, most computer users are carrying around disks—carrying them in a pocket, in a paper bag, in a shoebox. Every Macintosh owner could use a nice, new disk holder, and the *DiskBook*

is the most interesting version among the many variations. Contact MicroStore, P.O. Box 33, LeSueur, Minnesota 56058; (800) 962-8885; (612) 665-3284 in Minnesota.

3 The Sher-Mark Anti-Glare Magnification Screen (\$89.95, plus \$3 for shipping) doesn't just cut glare; it also magnifies the screen display, a boon to Macintosh users. Installation is a simple process of attaching adhesive-backed holders to the Mac and hanging the screen from the holders. Contact Sher-Mark Products, 521 East 83rd Street, Suite 2R, New York, New York 10028; (212) 249-0494 or (212) 988-7045.

4 The Boston Computer Society (\$35) is a national-level user group that offers many benefits. The Macintosh User Group, a subset of BCS, has more than 10,000 members. A user group membership links you to other computer users in your community and around the country. A one-year membership costs \$35 for people in New England (because they can take advantage of BCS events) and \$28 for people outside New England. With a membership, you get six BCS publications, including two newsletters that fit your particular interests; access to workshops and meetings (with the regular membership); discounts; and technical advice. You can find information about local groups by asking area Apple dealers. Contact the Boston Computer Society at One Center Plaza, Boston, Massachusetts 02108; (617) 367-8080.

5 Gofer (\$79.95) is a search utility that will look through file after file, disk after disk, until it

finds the text you're looking for. It's ideal if you've ever wished you could search for a file by a phrase it contains instead of by its name. Contact Microlytics, One Tobey Village Office Park, Pittsford, New York 14534; (716) 248-9150.

6 HyperTutor (\$49.95) is ideal for people who are interested in learning how to use HyperTalk, the programming language of *HyperCard*. It's an online tutorial for people who want to conquer HyperTalk, and it's everyone's answer to making more use of Apple's latest wonder-package. Contact ChannelMark, 2929 Campus Drive, San Mateo, California 94403; (415) 345-5900.

7 The Fully Powered Mac (\$39.95) is a guide to customizing your favorite computer. You'll learn lots of neat tricks with which you can impress your friends. Written by Robert C. Eckhardt, the book includes a disk of public-exchange programs that complement the text. Contact Brady Utilities Software, Simon and Schuster Reference Division, One Gulf + Western Plaza, New York, New York 10023; (212) 373-8140.

Atari ST Gifts

8 The Power Players Joystick (\$29.95) is a superb stick for ST game players. You hold the molded handgrip in one hand, with a sensitive trigger under the trigger finger. The other hand manipulates the top-mounted stick, which has short play and clicks to let you know that the joystick direction has been activated. Contact Mindscape, 3444 Dundee Road, Northbrook, Illinois 60062; (312) 480-7667.

9 The Astra SW2 (\$69.95) will solve all the problems of any ST owner who struggles with two monitors. Just plug the power and signal cables of both monitors into this switch box. Switches on the front control the power, which monitor is working, and whether the audio comes from the monitor or the separate audio port on the back. Contact Astra, 2500 South Fairview, Unit L, Santa Ana, California 92704-9869; (714) 549-2141.

10 Blockbuster (\$39.95) is the ultimate *Break-out*-type game. You obliterate multicolored bricks by bouncing the ball off of them with your mouse-controlled paddle. Catching special bonus objects earns additional points and weapons, but watch out for the aliens who deflect the ball. Contact Mindscape, 3444 Dundee Road, Northbrook, Illinois 60062; (312) 480-7667.

11 Gunship (\$54.95), MicroProse's helicopter simulation, features fast action and amazingly realistic graphics. Arm your Apache AH-64 with an arsenal of weapons and set out to destroy enemy forces. Contact MicroProse, 180 Lakefront Drive, Hunt Valley, Maryland 21030; (301) 771-1151.

12 Timeworks PUBLISHER ST (\$129.95) provides powerful desktop publishing with full GDOS support. Several printers are supported, including the HP LaserJet and PostScript-equipped laser printers. *PUBLISHER* features a complete word processor, a spelling checker, style sheets, graphics, multiple columns, importation of text, and master pages. With the superb manual, you'll be using *PUBLISHER* in less than an hour. Contact Timeworks, 444 Lake Cook Road, Deerfield, Illinois 60015; (312) 948-9200.

MicroStuffer (\$69.95) is a 64K printer buffer that increases print speed and efficiency. This small box sits between the ST and the printer. Because the ST can send text faster than the printer can print it, the buffer holds the information, sending it to the printer at an appropriate speed, and frees the ST for other work. *MicroStuffer* holds about 32 pages of text, and the hardware comes with the necessary cables. Contact Supra, 1133 Commercial Way, Albany, Oregon 97321; (503) 967-9075.

Steven Anzovin, Heidi E. H. Aycok, Clifton Karnes, Gregg Keizer, David Plotkin, and Neil Randall contributed to "COMPUTE!'s Holiday Gift Guide."

COMPUSERVE ANNOUNCES HUMAN INTELLIGENCE
FOR YOUR IBM.



Sam Taylor
marketing information manager

Joy Overstreet
computer sales & training

Nancy Keep
law office automation consultant

George Conklin
minister

Mark Murphy
computer programmer

Donald Landwirth
computer consultant

James Hawkins
physician

Thousands of people just like you have put their heads together to form one of the world's most advanced data processors — CompuServe's IBM® and IBM-compatible forums. And they'd like you to join them.

Forum members share problems and solutions on our bustling message center. They access and contribute to huge data libraries teeming with the best shareware and public domain software anywhere. And they take on the latest computing topics in live, online conferences.

Nothing can make your computer as intelligent or as friendly as CompuServe's Forum members.

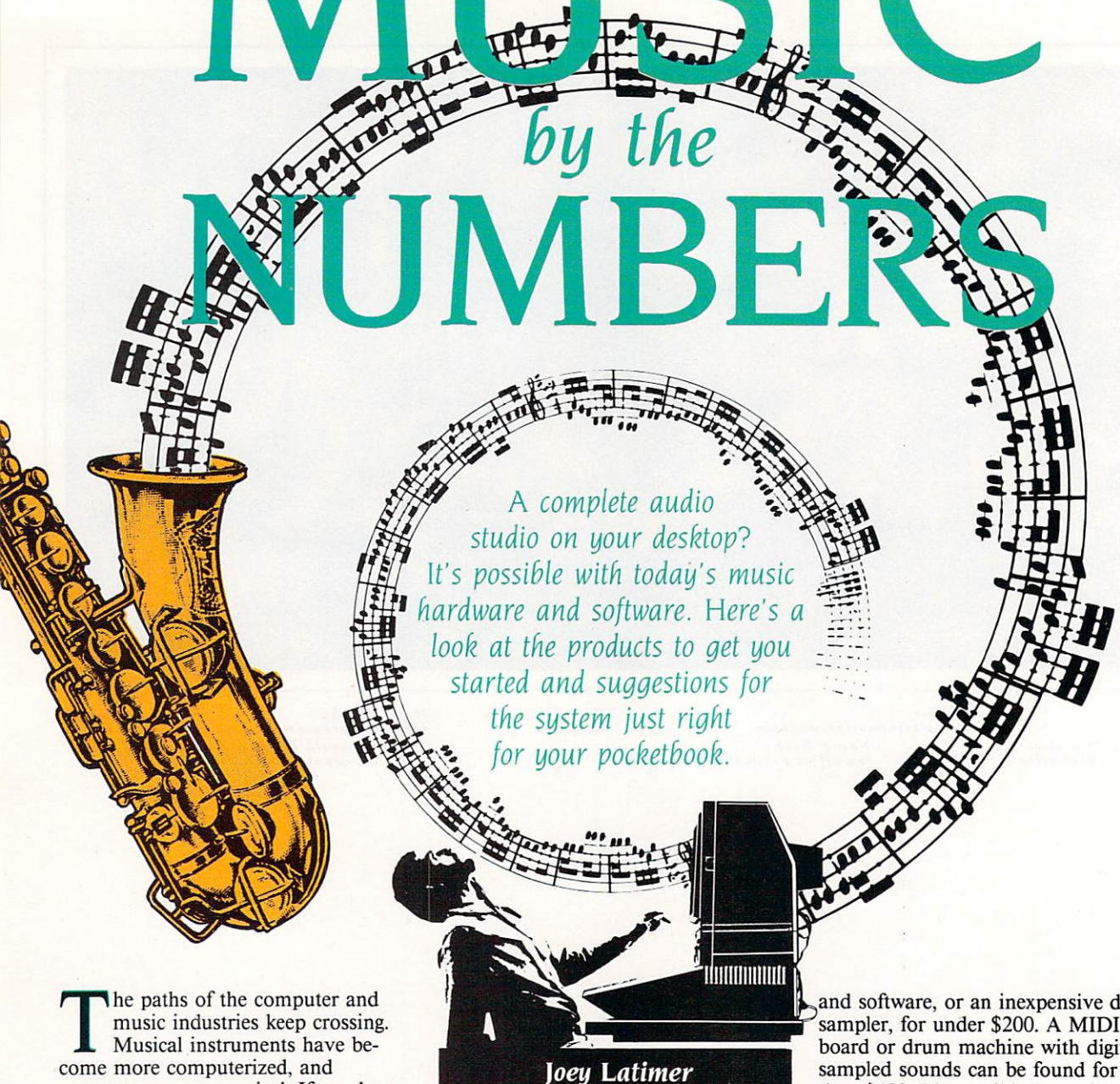
To join CompuServe, see your computer dealer. To order direct or for more information, call 800 848-8199. In Ohio and Canada, call 614 457-0802. If you're already a member, type GO IBMNET at any ! prompt.

CompuServe®
An H&R Block Company

MUSIC

by the

NUMBERS



A complete audio studio on your desktop? It's possible with today's music hardware and software. Here's a look at the products to get you started and suggestions for the system just right for your pocketbook.

Joey Latimer

The paths of the computer and music industries keep crossing. Musical instruments have become more computerized, and computers, more musical. If you have a personal computer, you already have half of a sophisticated sound- and music-production studio on your desktop. With an amazingly small investment, you can add the music software and hardware to put your studio in action.

Terms such as *MIDI*, *digital sampling*, and *sequencing* are some of the most common buzzwords you'll hear in computer-music circles these days. MIDI, an acronym for Musical Instrument Digital Interface, is the interface standard that makes it possible for computers to interact with synthesizers, drum machines, and other electronic music devices. Digital sampling is a process that lets you record

samples, or "snapshots," of sounds and store them digitally so you can then use your computer or a MIDI instrument to play them back. Sequencing is the recording or inputting of notes into a computer for storage and playback. The combination of computers, MIDI, digital sampling, and sequencing has created a hybrid technology that can bring wonderful new music into your life.

The current range of products in the computer-music field is wide and getting wider every day. Competition has forced prices down to the point where you can get a MIDI interface

and software, or an inexpensive digital sampler, for under \$200. A MIDI keyboard or drum machine with digitally sampled sounds can be found for less than \$400. It's possible to equip your computer with more expensive hardware and add-ons, of course, but that's not the point of this article. We'll focus on something simple—showing you what you need to make music with your computer at a price you can afford.

The six computer audio products we've chosen are examples of the affordable, high-quality software and hardware that you can find for MS-DOS, Commodore 64/128, Apple II, Amiga, Macintosh, and Atari ST computers. Ranging in price from \$79 to \$199, each can help get your audio studio out of the realm of fantasy and onto your desk.



*Half of an audio studio is already on
your desktop: your personal computer.
Completing your music setup isn't hard
and doesn't cost a lot of money.*

IBM PC and Compatibles

MIDI Starter System

The people at Music Quest have introduced a package, the MIDI Starter System, which includes a MIDI interface card, two long MIDI cables, a composition package, an eight-track recording program, and sound editor/librarian programs for the popular Yamaha DX and Casio CZ synthesizers. You supply the computer and MIDI instruments, and Music Quest supplies the rest—all for \$199.

The brains of this starter system is a MIDI coprocessor interface card that slips into any free slot in your PC. On the back of the card are two connectors. One is the metronome output, which can be connected to an amplifier or mixing board using an RCA-style connecting cable. The other connects to a MIDI in/out adapter cable that comes with the package. Hooking it all up and getting it running takes 15–30 minutes.

The software, which features pull-down menus and optional mouse operation, is easy to learn and a pleasure to use. The *Easy-8 Sequencer* lets you record, overdub, and edit up to eight tracks. Quantizing (automatically correcting timing problems), key transposing, MIDI filtering, and copy and paste are all standard features of *Easy-8*. *MelodEase*, the package's composition program, uses a piano-roll metaphor, but it does more than just let you make playable rolls. It's also a powerful note sequencer in its own right and works great for editing drum patterns. The sound editor/librarian programs let you load, edit, save, and transfer banks of sounds to and from Yamaha DX- and Casio CZ-series synthesizers.

Commodore 64/128

Dr. T's Keyboard Controlled Sequencer

Dr. T's Keyboard Controlled Sequencer has been a mainstay for Commodore 64 MIDI users since it was introduced in 1984. Even though other 64 sequencers have been introduced, the Keyboard Controlled Sequencer (KCS) has continued to sell well, mainly because of its extensive MIDI editing features and overall flexibility.

To use KCS, you need a MIDI interface and a MIDI instrument. Sequences of notes are entered by playing the MIDI instrument. KCS can have up to 35 independent sequences stored in memory at one time. Each sequence is assigned to a letter or number on the keyboard. To play a sequence, you simply press the assigned key. The sequencer will hold as many as 3550 MIDI events.

Recording can be done in real-time or by using step-entry. Realtime means that KCS records your performance as you play along with a metronome. Step-entry lets you enter notes and durations one note (step) at a time.

Other features supported by KCS include playing, transposing, overdubbing, autocorrecting, copying, and merging sequences.

The editor included with KCS lets you edit each MIDI event, either individually or globally. With this powerful feature, you can change the MIDI channel for each note individually, alter the durations of notes, fix incorrect notes, change note velocities, and more. Some musicians use the editor to add "feel" to the music, since computer music can sound a little stiff.

Apple II

Sonus Personal Musician

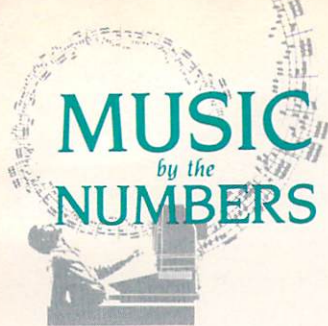
Sonus Personal Musician, a hardware and software package for Apple II+, IIe, or IIGS computers, makes it both easy and inexpensive to jump into the world of MIDI.

Inside the Sonus package, you'll find a MIDI interface card with one MIDI input and two MIDI outputs, two MIDI connecting cables, and a program for recording, overdubbing, and playing back music.

The interface card fits in slot 2 of your computer, and the MIDI cables must be routed out of the computer to a MIDI instrument, such as a keyboard. If you have a II+ or IIe, this is simply a matter of lifting the lid, plugging in the card, and carefully running the MIDI cables through an available slot opening in the back of the computer. In the case of a IIGS, however, there's no convenient place for the wires to exit the computer case. I had to run the wires out from under the top of the IIGS's case, making it bulge a bit.

The MIDI recording program that comes with the package supports recording and overdubbing on as many as four tracks at a time. This means that you could, depending on the availability of MIDI instruments, record drums on track 1, synthesizer bass on track 2, electric piano on 3, synthesized horns on 4, and then play them all back at the same time. In addition, the program lets you store as many as eight recorded sequences.

The program, which operates much the same way that a standard tape recorder does, also includes several other useful functions. There is a metronome clock to help you play in time, but if your timing is a little shaky, you can use the autocorrect fea-



ture to fix it. Songs, sequences, and tracks recorded in the wrong key can even be transposed to a new key.

Commodore Amiga Deluxe Music Construction Set

Deluxe Music Construction Set, from Electronic Arts, makes desktop music publishing a reality for Amiga users. This award-winning program can be used with a MIDI interface and MIDI instruments, or good results can be achieved by using the Amiga alone. A mouse-driven program, *Deluxe Music Construction Set* includes complete input, editing, and notation functions for making accurate musical scores and arrangements. Notes and other musical symbols—including guitar chords—easily slide onto musical staves. Just point to the note you want on the Note Palette and click; then bring the pointer to the staff, click again, and the note is placed on the staff. Notes can also be put on the staff by pointing and clicking on the onscreen piano keyboard, or playing in Step mode using a MIDI instrument. Since *Deluxe Music Construction Set* features a what-you-see-is-what-you-get approach to score printing, printed sheet music looks almost exactly the way it did on the screen.

Deluxe Music Construction Set has powerful playback options that bring out subtleties in the music. You can change instruments, styles of play, dynamic range, and tempo within each musical staff. When a song plays back, you can watch notes flash by. You can assign notes to as many as 16 MIDI channels to control MIDI instruments, or you can use the digitized Amiga instrument sounds included in the package. Either way, *Deluxe Music Construction Set* produces beautiful-sounding arrangements.

The program also lets you add lyrics to your music, edit your own instrument sounds, cut and paste arrangements, and more. *Deluxe Music Construction Set* does for musicians what word processors do for writers—it lets you carefully hone your work so that you're sure the results look and sound as good as possible. ▶

Setting Up a Studio

Now that you've talked yourself into taking the musical plunge, you've got other decisions to make. What do you need in your MIDI-equipped, computerized music studio, and how much should you expect to spend?

The answer depends on what you want to do with your computer audio system and how much money you have. To give you a ball-park figure of total costs, I've put together three systems: a budget system, a complete system, and an extravagant system. Note that these systems include only the computer and MIDI recording gear. You'll also need a stereo amplifier, speakers, and sound-mixing equipment. This can add anywhere from a few hundred dollars (if you shop at a chain such as Radio Shack) to many thousands of dollars.

The Budget System

This bare-bones system will let you do realtime recording, store and save songs, and synchronize your computer system with a multitrack tape recorder—all for around \$1,000.

Commodore 64 equipped with one disk drive and a monitor. When it comes to MIDI, the 64 is a real workhorse for the money.

Passport Designs MIDI Interface with Tape Sync. This is the industry-standard MIDI interface for Commodore 64s. Tape sync lets you synchronize your MIDI setup with a multitrack tape recorder.

Dr. T's Keyboard Controlled Sequencer. The standby of Commodore 64 MIDI recording, KCS is preferred by many for its excellent MIDI editing capabilities (see main article).

Casio MT-540 MIDI Keyboard. This is a new minisized MIDI synthesizer that includes built-in stereo speakers, PCM digitally sampled sounds and sound effects, and a complete digitally sampled percussion kit. It's one of the best-sounding Casio minikeyboards I've heard.

The Complete System

Both serious students of music and professionals on a tight budget should consider a more complete system, one that allows recording, desktop music publishing, and digital sampling. An excellent computer audio system will run in the neighborhood of \$4,000–\$5,000.

IBM PC AT or compatible equipped with 640K, one 720K floppy disk drive, a 20-megabyte hard disk drive, and a graphics printer. The small-business standard for computing, MS-DOS computers also work well for music. The hard drive greatly speeds up saving and loading of music and sound files.

Personal Composer System/2. People call this program a modern masterpiece. It supports 32-track MIDI recording, score editing and playing, music printing, and desktop publishing. The printed output generated by *Personal Composer* ri-

vals that of high-quality music books.

Voyetra OP-4000 MIDI Interface. This interface is 100-percent software-compatible with the industry-standard Roland MPU-401 MIDI interface. Unlike "dumb" interfaces, the OP-4000 handles all of the timing, sorting, and buffering of MIDI data, freeing your computer to run music programs at top speed.

Ensoniq Mirage-DSK Digital Sampling Synthesizer. The Mirage-DSK is a digital sampling MIDI keyboard with stereo outputs and a built-in 3½-inch disk drive for loading and saving sounds. Ensoniq currently offers over 300 sounds in its Sound Library.

Alesis HR-16 Drum Machine. A low-cost digital drum machine, this product features 49 built-in sounds. The sounds are very authentic, and the MIDI implementation makes it easy to configure a unique drum set for each of your songs.

The Extravagant System

For \$20,000, you can have a dream computer audio system that, while lavish to the average music enthusiast, can really make a difference for a virtuoso. Consider it a starter system for the discriminating professional.

Apple Macintosh II equipped with 4 megabytes of RAM, one 800K 3½-inch disk drive, a 40-megabyte hard disk drive, and a laser printer. The Macintosh II has the power, speed, and graphics quality to bring home music production to a state-of-the-art level.

Finale. This transcriber/music-editor/music-layout/printing program is the top of the line in the Macintosh world. Its strongest asset is its ability to print music entered from a MIDI keyboard. Users simply play the keyboard; *Finale* prints the music using a proprietary time-tagging method.

Passport Designs MIDI Transport. This MIDI/SMPTE interface with two inputs and five outputs will work as a Macintosh MIDI interface or as a stand-alone MIDI/SMPTE synchronizer. (SMPTE lets you synchronize your computer with video and audio tape recorders.)

Kurzweil 250 Digital Keyboard. This keyboard has a built-in 12-track sequencer and 45 of the best digitally sampled sounds I've heard. Its sensitive, wooden keys are the closest thing to a grand piano in the synthesizer market. It can be ordered with an optional 50-kHz sampling system for adding user-defined sounds.

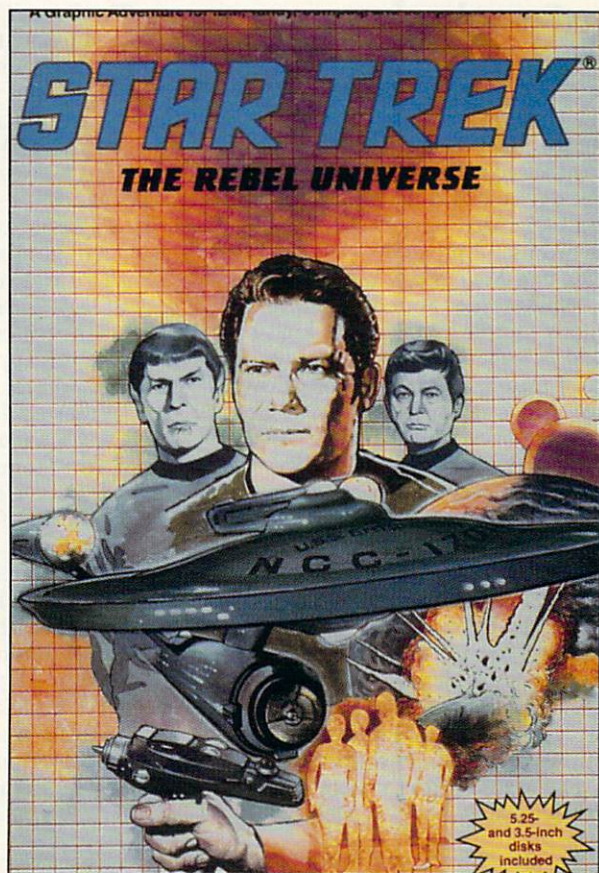
E-mu SP-1200 Digital Sampling Percussion System. The MIDI-equipped SP-1200 comes preprogrammed with a full complement of acoustic and electronic drum and percussion sounds. Additional sounds can be loaded from an optional floppy disk drive, or you can record your own custom sounds with the SP-1200's built-in user sampling facility.

STAR TREK®

THE REBEL UNIVERSE

Red alert. The siren sounds. The crew of the *Enterprise* reports to battle stations. With weapons readied, you track enemy vessels. Chekov confirms your orders to lock phasers on target. But wait—could the attackers be Federation ships?

In *Star Trek®: The Rebel Universe*, you control the Starship *Enterprise*, while Captain Kirk and his six trusted officers help you resist an insidious Klingon scheme which could overthrow the Federation. This graphic adventure brings the crew of the *Enterprise* face to face with Klingons, Romulans, and hostile Federation renegades under Klingon mind control. Available for the Atari ST—and now also for IBM, Tandy, Compaq, and compatible computers!



SPECIAL OFFER:

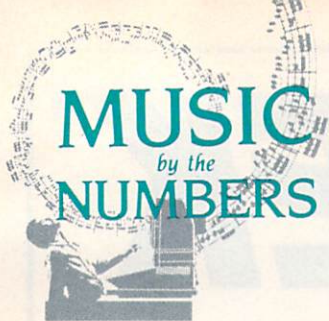
For a limited time (while supplies last), Simon and Schuster Software can bring the *Enterprise* to you. We've created a replica of the *Enterprise* in the form of an inflatable mobile. Sure to become a collector's item, this mobile is only available to purchasers of specially marked packages of *Star Trek: The Rebel Universe*.

Available at your local
computer software dealer, or call:
1-800-624-0023 (National)
1-800-624-0024 (New Jersey)

Copyright © 1988 Paramount Pictures Corporation. All Rights Reserved.
STAR TREK is a Registered Trademark of Paramount Pictures Corporation.
The *Enterprise* is a Trademark of Paramount Pictures Corporation.
Screens shown above are from the Atari ST version.



SIMON AND SCHUSTER
SOFTWARE



Macintosh MacRecorder Sound System

The MacRecorder Sound System, from Farallon Computing, is a must-have for Macintosh owners.

MacRecorder includes a sound-input device called the MacRecorder Sound Digitizer, plus an audio cable and two useful programs—*HyperSound* and *SoundEdit*. You can use the MacRecorder Sound System to digitally sample and edit any kind of sound, whether it's from voice, recorded media, or even live broadcasts. Once you've recorded sounds, you can play them back, edit them, mix them, and store them in *SoundEdit*, *HyperCard*, *Studio/Jam Session*, *VideoWorks*, and other file formats.

The MacRecorder digitizer is a small plastic box with a built-in microphone, a level control, and connectors labeled Mic-In and Line-In. When recording, you can use the built-in microphone or plug in your own. To let you record from another audio source, such as a CD player, Farallon furnishes a long audio connecting cable. The MacRecorder system supports stereo recording, but you need two

MacRecorder digitizers if you want to record both channels at the same time.

The *SoundEdit* program is a sound editor that makes it easy to visually display recorded sounds on the screen while you hear them through the Macintosh's speaker (or an external speaker). Once you have a sound in the *SoundEdit* window, you can enhance it by adding special effects. These include smoothing, looping, filtering, mixing, and more. *SoundEdit* will run on any Macintosh with at least 512K of memory, though it performs better if your Mac has at least one megabyte of memory and two 800K drives.

HyperSound is a *HyperCard* stack that lets you record and play monaural sound, copy sounds from *HyperSound* to other *HyperCard* stacks, and create a Home button for *HyperSound* in your Home card. Unfortunately, *HyperSound* must be run from a hard disk, and it requires that *HyperCard* be installed on the hard disk, too. While this eliminates many users, those running *HyperCard* on a hard disk drive will find *HyperSound* and MacRecorder welcome additions to stack construction tools.

The sampling rates available within *SoundEdit* and *HyperSound* are

22,000, 11,000, 7300, or 5500 samples per second. The higher the rate, the better the quality of the sampled sound, and the faster the computer's memory is used. At 22,000 samples per second, for instance, the frequency range recorded is 0 kHz–10 kHz, which generates good-sounding music and high-quality speech. At this speed, you can record only 45 seconds on a one-megabyte Macintosh. Changing the sampling rate to 5500 samples per second lets you record up to three minutes of voice on that same Macintosh, although with much less impressive quality.

Atari ST Navarone ST Sound Digitizer

The Navarone ST Sound Digitizer is a low-cost yet high-quality digital sampler/software combination for Atari ST personal computers. Enclosed in a plastic box resembling side-by-side game cartridges, the ST Sound Digitizer plugs into the cartridge port on the computer. Two jacks (line in and line out) and accompanying level

Music Speak A Short Glossary

If many of us muddle our way through music, it may be because of the terminology. We may know dozens of esoteric computer terms, but the jargon associated with music—electronic or computerized music especially—can be daunting to the uninitiated. Here are enough explanations to make you conversant in MIDI-speak.

Digital sampling. A process that lets you record samples, or "snapshots," of sounds and store them digitally. Sampled sounds can be edited, stored on disks, and played back using a computer and/or a MIDI-equipped instrument. A hardware/software system for digital sampling is sometimes referred to as a *digitizer*.

Drum machine. An electronic device for emulating real drums. The drums are "played" by pressing buttons or pads, each representing a different drum. A MIDI-equipped drum machine can be con-

nected to other MIDI-equipped devices, including computers.

Frequency response. The audio range or limitations of a piece of hardware. Humans can hear frequencies at a maximum of about 18,000 Hz (cycles per second). Hardware with a good frequency response will cover most of the range of human hearing. Poor frequency response results in dull sounds.

MIDI. An acronym for *Music Instrument Digital Interface*. An international standard established so that instruments, computers, and other MIDI-equipped devices can communicate with each other.

MIDI interface. A hardware device that lets computers, synthesizers, drum machines, and other hardware receive and transmit MIDI data. This data represents musical information such as which notes were played, when, and how hard. The MIDI interfaces on different devices are connected using special MIDI cables.

Overdubbing. The process of listening to previously recorded music and recording

new parts without erasing the old. Commonly used in recording to "build" musical arrangements instrument by instrument.

Sampling rate. Usually measured in samples per second, the sampling rate of a digital sampler lets you know how good the quality of the sampled sounds will be when the sounds are played back. The faster the sampling rate, the better the sound quality.

Sequencer. A software program for composing, recording, editing, storing, and playing back musical compositions. Music can be entered into a sequencer by playing in realtime, or notes can be entered one at a time, in step time.

Sequencing. Using a sequencer to record or input the musical notes making up musical arrangements and compositions.

Synthesizer. An electronic musical instrument capable of mimicking the sounds of other instruments or generating new and unique sounds. Synthesizers are usually activated by playing a piano-type keyboard; most come MIDI-equipped.

NO QUARTER

Just Endless Arcade Action

Now you can take home some of the best Arcade games you've ever played,
to play on your own personal computer!

Skillful programming has taken the superb graphics and addictive game play of Arcade hits Double Dragon and Sidewinder and faithfully reproduced them in home computer versions.

Join in deadly combat with the savage street gang of the infamous Shadow Boss in Double Dragon. Indulge in an orgy of action and destruction in the high-energy shoot-em-up Sidewinder (part of the Awesome Arcade Action pack on Amiga and Atari ST). Go on the rampage and smash buildings and munch tiny natives in Aaargh!

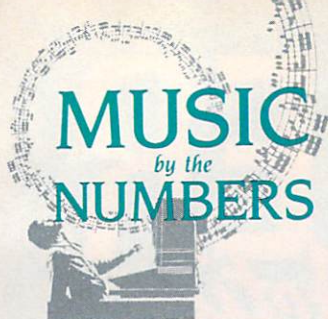
Nothing but endless Arcade action – Arcadia has spared no quarter!



ARCADIA

Double Dragon is a joint publication of Arcadia and Tradewest.
© 1988 Mastertronic International, Inc. Licensed from Technos Japan.
Arcadia is a member of the Mastertronic Group.

ARCADIA 711 West 17th St., Unit G9, Costa Mesa, CA 92627.
Tel. (714) 631-1001.



controls are found on the side of the box. A microphone is not included, but the manual lists several acceptable Radio Shack models along with their part numbers.

The Navarone lets you vary the sampling rate from 1000 to 64,000 samples per second, resulting in a very acceptable frequency response of 10 Hz-20,000 Hz. As with any other sampler, however, the better the quality of the sample, the more memory used. If you plan to save a lot of high-quality samples, it's best to have a hard drive or a lot of 3½-inch disks

handy.

When you first boot up the mouse-driven ST Sound Digitizer software, the screen looks and responds like an oscilloscope connected to the digitizer's input. This screen lets you check and adjust the input level to avoid clipping. Another screen, the Command Screen, lets you control the digitizer and sound-editor functions, which include sound editing, reversing sounds, mixing, squeezing, and many other functions.

One feature that makes the ST Sound Digitizer stand out is its ability

to let you play the sounds you digitize using a MIDI instrument. By clicking MIDI on the Command screen and then playing middle C on a MIDI keyboard, you can play a middle C of the sound currently in memory.

It's really strange, being able to play my Casio CZ-101 and hear a hiccup come out. □

Joey Latimer is a freelance writer, musician, and recording engineer. Formerly a technical editor with *Family Computing*, he now operates a MIDI recording studio and testing lab in the mountains of California.

Music by the Dollars

Alesis HR-16 Digital MIDI Drum Machine

\$449
Alesis Post
3630 Holdridge Ave.
Los Angeles, CA 90016
(213) 467-8000

Casio MT-540 MIDI Keyboard

\$249.50
Casio
570 Mt. Pleasant Ave.
Dover, NJ 07801
(201) 361-5400

Deluxe Music Construction Set

\$99.95
Amiga
Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
(415) 571-7171

Dr. T's Keyboard Controlled Sequencer

\$149
Commodore 64
Dr. T's Music Software
220 Boylston St., Suite 206
Chestnut Hill, MA 02167
(617) 244-6954

E-mu SP-1200 Digital Sampling Percussion System

\$2,995
E-mu Systems
1600 Green Hills Rd.
Scotts Valley, CA 95066
(408) 438-1921

Ensoniq Mirage-DSK Digital Sampling MIDI Synthesizer

\$1,295
Ensoniq
155 Great Valley Pkwy.
Malvern, PA 19355
(215) 647-3930

Finale

\$1,000
Macintosh
Coda Music Software
1401 E. 79th St.
Bloomington, MN 55420
(612) 854-1288

Kurzweil 250 Digital Keyboard

Price varies depending on configuration
Kurzweil Music Systems
411 Waverley Oaks Rd.
Waltham, MA 02154
(617) 893-5900

MacRecorder Sound System

\$199
Macintosh
Farallon Computing
2150 Kittredge St.
Berkeley, CA 94704
(415) 849-2331

Music Quest MIDI Starter System

\$199
IBM PC and compatibles
Music Quest
1700 Alma, Suite 260
Plano, TX 75075
(214) 881-7408

Navarone ST Sound Digitizer

\$99.95
Atari ST
Navarone Industries
454 Kenneth Ave.
Campbell, CA 95008
(408) 378-8177

Passport Designs MIDI Interface with Tape Sync

\$199.95
Commodore 64
Passport Designs
625 Miramontes St.
Half Moon Bay, CA 94019
(415) 726-0280

Passport Designs MIDI Transport—MIDI/SMPTE Interface

\$459
Macintosh
Passport Designs
625 Miramontes St.
Half Moon Bay, CA 94019
(415) 726-0280

Personal Composer System-2

\$495
IBM PS/2; IBM PC AT and compatibles
Personal Composer
P.O. Box 648
Honaunau, HI 96726
(808) 328-9518

Sonus Personal Musician

\$129
Apple II
Sonus
21430 Strathern St., Suite H
Canoga Park, CA 91304
(818) 702-0992

Voyetra OP-4000 MIDI Interface

\$179
IBM PC and compatibles
Voyetra Technologies
333 5th Ave.
Pelham, NY 10803
(914) 738-4500

Out of Sight!



F-19 STEALTH FIGHTER will turn your PC into the hottest machine on today's electronic battlefield. The graphics are that vivid ... the animation that smooth ... and the feeling of flight that convincing.

But F-19 is no joy ride. Dramatic game play challenges you with a lifetime of action. Fight your way through hundreds of missions packed into the real-world regions of Libya, the Persian Gulf, the North Cape and Central Europe.

Combat will dazzle you as never before. Steer modular glide bombs with your joystick and follow them all the way to impact. In heart-stopping dogfights, use TrakCam to lock onto enemy MiGs. Engage TactiVue for an outside perspective that *always* keeps you and your target in sight.

F-19
STEALTH FIGHTER

Plus, learn the secrets of stealth flying — maintaining a low electromagnetic profile to evade enemy radar and mastering the tactics that only a stealth pilot dares to try.

Out of Sight

For IBM-PC/XT/AT/PS2/TANDY/compatibles. Supports VGA, MCGA, EGA, CGA and Hercules graphics.

Can't find F-19? Outside MD call 800 645-8632, weekdays 8am to 5pm EST and order by MC/VISA; or mail check/money order for \$69.95 for IBM-PC/Tandy (specify disk size). U.S. funds only. MD residents add 5% sales tax. Free shipping in U.S.; \$5.00 international. Allow 1-3 weeks for U.S. delivery.



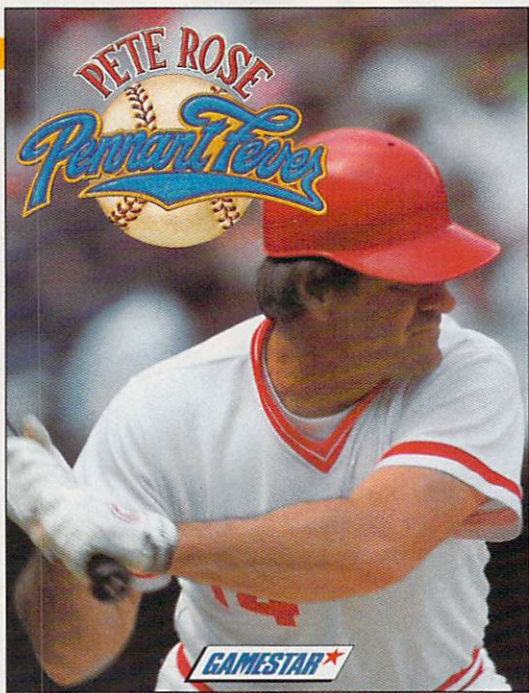
MICRO PROSETM
SIMULATION • SOFTWARE

180 Lakefront Drive, Hunt Valley, MD 21030 (301) 771-1151

FASTER HARDER BETTER

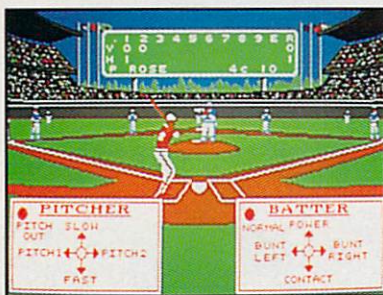
“ I only play one way — all out. That's because *real baseball* is tough, gutsy and aggressive. And you don't win ball games unless you're willing to play *faster, harder* and *better* than everyone else. ”

PETE ROSE
Baseball's All-Time Leading Hitter



Faster than Earl Weaver Baseball™. Harder than Hardball!™. Here's your game — Pete Rose Pennant Fever. Now you can play every position and catch all the action from eight different field-level views!

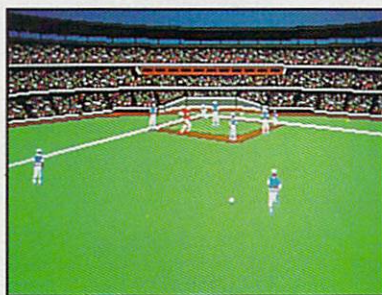
Hear the crack of the bat, the roar of the crowd, all the umpire calls. Digitized voice and sound plus the hottest graphics bring you baseball that's *better* than all the rest. Because Charlie Hustle won't accept anything less.



Take complete charge of all pitching and hitting with pop-up option windows.

YOU'RE ON THE FIELD

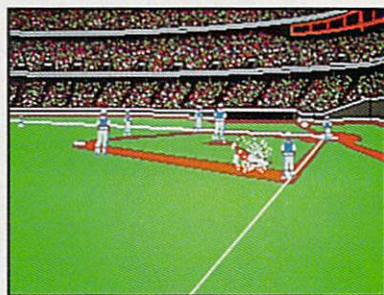
Pick your heat from 23 pitches. Gauge your throw and gun down the runner. Steal second in a cloud of dust. Five different batting options give you all the power of Pete.



Judge the fly, scoop hot grounders, chase down drives at the wall.

YOU'RE IN THE DUGOUT

Set a blistering batting order and pitching rotation. Bring in relievers, pinch-hitters and pinch-runners. Call for the steal or hit-and-run.



It's spikes first when you gotta have the bag — tell 'em Charlie sent ya.

YOU'RE IN THE FRONT OFFICE

As GM, you've got 10 seasons to build a dynasty. Draft red-hot rookies and buy expensive free agents. One or two player action give you all the realism of the championship chase.

For IBM®, Tandy® and 100% Compatibles. 512K RAM and Graphics Adapter Required. Not Copy Protected.

HOW TO ORDER: Visit your retailer or call 800-227-6900 for Visa/MasterCard orders. Direct price is \$39.95 for the IBM/Tandy version and \$34.95 for the Commodore 64/128 version. A shipping and handling charge of \$4.50 applies to all direct orders. Sales tax will be added to orders in California and Texas.

**PETE ROSE PENNANT FEVER.
BASEBALL AT ITS BEST.**

GAMESTAR

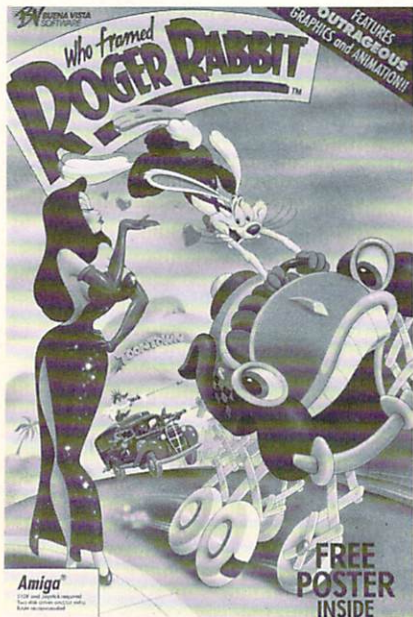
Tandy screens shown. Screens may vary depending on computer system. Gamestar and Pete Rose Pennant Fever are trademarks of Gamestar. Earl Weaver Baseball, Hardball!, IBM, and Tandy are trademarks of Electronic Arts, Accolade, Inc., International Business Machines Corp., and Tandy Corp., respectively.

new products!

Save Toontown

Players must help Roger save Toontown from the evil Judge Doom in Buena Vista Software's *Who Framed Roger Rabbit*, based on the movie of the same name.

While trying to stop Judge Doom, players must race Benny the Cab through the streets of Tinseltown, retrieve Marvin the Gag King's missing will, and then use gags to get past the evil weasels at the cartoon Gag Factory. A map scene keeps players alert to their progress against Doom. A series of screens rewards players with animated prizes from characters like Jessica Rabbit.



Buena Vista Software's *Who Framed Roger Rabbit* is based on the popular movie.

The program is actually three games in one, each with multiple skill levels, music, sound effects, and animated color graphics. The package includes a Quick Start Card, a full-color poster, and a 12-page Gag Factory Catalog.

Who Framed Roger Rabbit is available for the Commodore 64 at a retail price of \$29.95. The Apple II and

IBM PC and compatibles versions sell for \$39.95; the Amiga release retails for \$44.95.

Buena Vista Software, Disney Consumer Products, 3800 W. Alameda Ave., Suite 325, Burbank, CA 91505

Circle Reader Service Number 200.

Mac Adventure

In Infocom's new fantasy role-playing game for the Macintosh, *Quarterstaff: The Tomb of Setmoth*, players assume the role of an adventurer who has been recruited for a mission to discover what has happened to the Tree Druid colony.

The game's universe changes continuously and, because all its problems have multiple solutions, there is no single way to complete the game. Players begin the game alone, but they can use incentives to gather supporters. All characters in the game respond to desires such as hunger, thirst, and greed.

Game features include digitized sound, onscreen mapping, and color graphics on the Macintosh II-specific version. The game can be played almost entirely with a mouse. Objects found during gameplay have physical characteristics like weight, shape, and bulk. The objects can also be used by other characters in the game.

The monochrome version is available for the Macintosh Plus, SE, and II and requires one megabyte of memory and one 800K disk drive. The suggested retail price is \$49.95. Color graphics for the Mac II are available for an additional \$10.00 through an in-pack offer.

Infocom, 125 CambridgePark Dr., Cambridge, MA 02140

Circle Reader Service Number 201.

Sound the Alarm!

The Alarmcard from Alarmcard is a one-half-size add-in board that discourages hardware and data theft. Designed for the IBM PC, XT, AT, and PS/2 models 25 and 30, the card has motion sensors that sound a piercing battery-

powered alarm when the power to the computer is turned off and there is unauthorized movement.

A user-controlled password, stored in battery-protected hardware, guards against nonuser access or alarm tampering. The card comes with software that allows users to control the device through menu options and provides diagnostics, an onscreen battery check, and an alarm test.

Alarmcard works with the computer in a horizontal or vertical position and includes cabinet-closure hardware that makes it more difficult to remove the PC's cabinet.

The complete package contains a one-half-size add-in card, an alarm unit, software, cabinet-closure hardware, a nine-volt battery, and documentation. The suggested retail price is \$119.95.

Alarmcard, 14700 NE 8th St., Suite 205, Bellevue, WA 98007

Circle Reader Service Number 202.

Atari DOS and Atari Drives

A new disk operating system for Atari 8-bit computers has been released by ICD. Sparta DOS X, a cartridge that loads into the computer's memory in 8K-sized banks, is transparent to the user.

Its commands and features are similar to those of MS-DOS and PC-DOS, but the system will not make an Atari compatible with a PC.

The system is compatible with add-on devices like hard drives and ramdisks. Other features include four file attributes that affect backups, hidden files, file locking, and subdirectories. It also time-stamps files.

Users can run another cartridge, such as a programming language, on top of Sparta DOS X, which has a retail price of \$79.00.

ICD has also released new specifications for its FA-ST hard drive for the Atari ST. The FA20ST, FA30ST, and FA50ST have an average access time of 28 milliseconds. The drives are equipped with autopark and head lock features that help prevent data loss. The

Mickey McLean

L Lyco Computer

Marketing & Consultants

Since 1981

Air Orders Processed Within 24 Hours

Why shop at Lyco Computer?

Lyco Computer is one of, if not the largest, and most established firms to provide only quality name brand computer products at prices 30% to 50% below retail. We've set many industry standards, and we are setting the pace for many more in the future. Our standards include: a separate department for customer service; a price guarantee; guaranteed factory fresh merchandise; diverse payment and shipping policies, including a C.O.D. policy which allows customers to have products in their hands before paying anything. Selection places Lyco at the forefront of the industry. Due to our in-stock volume, we cannot advertise all of our products. If you do not see the product you want advertised, call Lyco Marketing toll free.

How do I know I will get the product I need?

Our marketing staff is well-educated in the computer industry. They receive continuous formal training by our manufacturers which enables them to develop and maintain a high degree of expertise on the products they represent. Though our strict guarantee on providing only new merchandise prohibits free trial periods and a guarantee on compatibility, a wealth of knowledge is available to our customers to help with the purchasing decision. As thousands of people every week capitalize on our savings and services, we hope you too, will make Lyco Computer your first choice.

What about warranty or service?

We decided several years ago that a Customer Service Department was needed in the industry. Unfortunately, few of our competitors offer this service. Our Customer Service Department is available at (717) 494-1670 to provide assistance in all warranty matters. Our product line enjoys "name brand recognition," and we back all of our manufacturer's stated warranty terms. Many manufacturers will allow defective products to be exchanged. Before returning any item that appears to be defective, we ask that you call our Customer Service Department to assist you in determining if the product is defective. If the product is determined defective, they will give you a special authorization number and speed processing of your order.

Will you rush an item to me?

Since 1981, we have set the standard in the industry by processing orders within 24 hours — not 4 to 6 weeks. We offer next day air, two day air, standard UPS, and postal international shipping services. Our records show we fill 95% of our orders daily. Temporary shortages are normally filled within 10 days. If an order cannot be filled within 60 days, we refund your money in full, unless you choose to wait for the order and benefit from the price savings. Any time prior to shipment, you may cancel or change the out of stock product by contacting our Customer Service representatives.

How do I order?

Send your order to Lyco Computer, P.O. Box 5088, Jersey Shore, PA, 17740. Or, call either Marketing at 1-800-233-8760 or Sales at (717) 494-1030. We provide four payment methods. We have always accepted C.O.D. orders through UPS. Prepaid orders over \$50 are shipped freight-free. For orders under \$50, please add \$3 for freight. Orders prepaid by a certified check or money order are shipped immediately. Personal and company checks require a 4 week waiting period prior to shipping. Visa and Master Card orders are accepted for your convenience, but we cannot pass along the 4% discount offered for cash. Purchase orders are accepted from Educational Institutions. We only charge sales tax on items delivered in Pennsylvania. For APO, FPO, and international orders, please add \$5 plus 3% for priority mail. Advertised prices and availability are subject to change.

Sales: 1-800-233-8760 or 717-494-1030

Hours: Monday through Friday, 9:00 a.m. to 9:00 p.m.

Saturday, 10:00 a.m. to 6:00 p.m.

Customer Service: 717-494-1670

Hours: Monday through Friday, 9:00 a.m. to 5:00 p.m.



Season's Greetings

1-800-233-8760

*It was a pleasure
to serve you in '88.*

*— Staff and Management
Lyco Computer, Inc.*

Access:	
Wld. Cl. Value Pack	\$9.95
10th Frame	\$27.95
Activision:	
Beyond Zork	\$27.95
GBA Basketball	\$9.95
Might & Magic	\$27.95
Zork Trilogy	\$28.95
Broderbund:	
Print Shop	\$34.95
Print Shop Comp.	\$29.95
Carmen San Diego World	\$23.95
Electronic Arts:	
Yeager's AFT	\$26.95
Weaver Baseball	\$26.95
Hunt for Red October ..	\$31.95
Starflight	\$25.95
Tomahawk	\$25.95
Epyx:	
California Games	\$22.95
L.A. Crackdown	\$28.95
Home Video Producer ..	\$28.95
Print Magic	\$32.95
4x4 Off Road Racing ..	\$22.95
Firebird:	
Jinxter	\$22.95
Universal Military Simulator	\$28.95
Microleague:	
Microleag. Baseball	\$22.95
GM Disk	\$16.95
Stat Disk	\$13.95
Microprose:	
F-15 Strike Eagle	\$22.95
Silent Service	\$22.95
Gunship	\$28.95
Mindscape:	
Gauntlet	\$22.95
Harrier Combat Simulator	\$20.95
Indoor Sports	\$16.95
Paperboy	\$22.95
Willow	\$22.95
Origin:	
Ultima III	\$23.95
Ultima IV	\$34.95
Ultima V	\$34.95
Strategic Simulations:	
Gettysburg	\$35.95
Phantasie III	\$25.95
Questron II	\$25.95
Stellar Crusade	\$31.95
Sublogic:	
Flight Simulator	\$34.95
Jet Simulator	\$30.95
Western Europe Scenery Disk	\$14.95
Timeworks:	
Wordwriter PC	\$27.95
PC Quintet	\$49.95
Partner PC	\$22.95
Unison World:	
Newsmaster II	\$39.95
Print Master	\$29.95
Art Gallery 1 or 2 ... ea.	\$14.95

Access:	
10th Frame	\$22.95
Activision:	
Music Studio	\$27.95
Broderbund:	
Superbike Challenge ...	\$11.95
Typhoon Thompson	\$21.95
Electronic Arts:	
Hunt for Red October ..	\$32.95
Awesome Arcade Pack	\$30.95
Epyx:	
Dive Bomber	\$22.95
Impossible Mission 2 ...	\$22.95
Winter Games	\$11.95
Firebird:	
Universal Military Simulator	\$28.95
Carrier Command	\$25.95
Microleague:	
Microleague Baseball ...	\$33.95
Micro. Wrestling	\$25.95
Microprose:	
F-15 Strike Eagle	\$24.95
Gunship	\$28.95
Mindscape:	
Road Runner	\$27.95
Indiana Jones and the Temple of Doom	\$27.95
Origin:	
Autoduel	\$24.95
Ultima IV	\$34.95
Strategic Simulations:	
Questron II	\$32.95
Heroes of the Lance ...	\$25.95
Sublogic:	
Flight Simulator II	\$30.95
Jet	\$34.95
Timeworks:	
Wordwriter ST	\$44.95
Partner ST	\$27.95
Unison World:	
Art Gallery 1,2 or 3...ea.	\$14.95
Print Master	\$19.95

Access:	
Triple Pack	\$11.95
Leader Board Double Pack	\$9.99
Activision:	
Music Studio	\$19.95
Great American Road Race	\$9.99
Broderbund:	
Print Shop	\$26.95
Graphic Lib. I,II or III...ea.	\$14.95
Electronic Arts:	
Pinball Con. Set	\$8.95
One on One	\$8.95
Lords of Conquest	\$8.95
Super Boulderdash	\$8.95
Music Construction Set	\$8.95
Microleague:	
Microleague Baseball ..	\$22.95
GM Disk	\$16.95
Microprose:	
F-15 Strike Eagle	\$19.95
Silent Service	\$19.95
Mindscape:	
Gauntlet	\$20.95
Infiltrator	\$17.95
Origin:	
Autoduel	\$24.95
Ultima IV	\$34.95
Strategic Simulations:	
Phantasie III	\$26.95
Eternal Dagger	\$26.95



FREE

Special
Edition
Graphics
Library
With Print
Shop

Access:	
World Class Leader Board	\$23.95
Echelon	\$25.95
Activision:	
Might & Magic	\$28.95
Maniac Mansion	\$19.95
Broderbund:	
Print Shop	\$29.95
Carmen S. Diego (USA) ..	\$26.95
Electronic Arts:	
Yeagers AFT	\$26.95
Bard's Tale III	\$32.95
Epyx:	
St. Sports Basketball ...	\$11.95
Print Magic	\$28.95
Firebird:	
Starglider	\$13.95
Guild of Thieves	\$25.95
Microleague:	
Microleag. Baseball	\$22.95
Stat Disk	\$11.95
Microprose:	
F-15 Strike Eagle	\$19.95
Pirates	\$22.95
Mindscape:	
Indoor Sports	\$17.95
Paperboy	\$22.95
Origin:	
Autoduel	\$24.95
Ultima V	\$34.95
Strategic Simulations:	
Questron II	\$29.95
Dungeon Master Assistant	\$20.95
Sublogic:	
Flight Simulator II	\$30.95
Jet Simulator	\$24.95
Timeworks:	
Publish It	\$56.95
Font Pack 1	\$22.95
Unison World:	
Art Gallery 1,2 or 3...ea.	\$14.95
Print Master	\$25.95

Beyond Zork	\$25.95
Batteries Included:	
Paperclip III	\$31.95
Berkeley Softworks:	
Geofile 64	\$29.95
Geos 64	\$35.95
Geos 128	\$39.95
Geowrite 128	\$39.95
Berkeley TriPak	\$29.95
Broderbund:	
Bank St. Writer	\$29.95
Print Shop	\$26.95
Print Shop Compan.	\$20.95
Graphic Lib. 1,2,3 ... ea.	\$14.95
Cauldron	\$9.95
Electronic Arts:	
Bard's Tale III	\$25.95
Hunt for Red October ..	\$25.95
Monopoly	\$20.95
Strike Fleet	\$20.95
Wasteland	\$25.95
Epyx:	
Fastload	\$22.95
California Games	\$22.95
4x4 Off Road Racing ..	\$22.95
Games: Winter Ed.	\$22.95
Games: Summer Ed. ...	\$22.95
Firebird:	
Jinxter	\$19.95
Starglider	\$11.95
Microleague:	
Microleag. Baseball	\$22.95
Microleag. Wrestling ...	\$16.95
Microprose:	
Airborne Ranger	\$22.95
Gunship	\$19.95
Pirates	\$22.95
Stealth Fighter	\$22.95
Red Storm Rising	\$23.95
Mindscape:	
Paperboy	\$19.95
Road Runner	\$19.95
Gauntlet	\$20.95
Indiana Jones	\$20.95
Origin:	
Autoduel	\$23.95
Ultima IV	\$34.95
Software Simulations:	
College Basketball	\$22.95
Football	\$17.95
Springboard:	
Newsroom	\$19.95
Certificate Maker	\$14.95
Strategic Simulations:	
Phantasie III	\$25.95
Questron II	\$25.95
Pool of Radiance	\$25.95
Sublogic:	
Flight Simulator II	\$30.95
Stealth Mission	\$30.95
Timeworks:	
Swiftcalc 128	\$27.95
Wordwriter 3	\$22.95
Unison World:	
Art Gallery 1 or 2 ... ea.	\$14.95
Print Master	\$17.95

AMIGA

COMMODORE

Strategic Simulations:	
Gettysburg	\$35.95
Phantasie III	\$25.95
Questron II	\$25.95
Stellar Crusade	\$31.95
Sublogic:	
Flight Simulator	\$34.95
Jet Simulator	\$30.95
Western Europe Scenery Disk	\$14.95
Timeworks:	
Wordwriter PC	\$27.95
PC Quintet	\$49.95
Partner PC	\$22.95
Unison World:	
Newsmaster II	\$39.95
Print Master	\$29.95
Art Gallery 1 or 2 ... ea.	\$14.95

Activision:	
Fairy Tale Adventure ...	\$27.95
Romantic Encounters ...	\$22.95
Electronic Arts:	
FA/18 Interceptor	\$33.95
Ferrari Formula One ...	\$33.95
World Tour Golf	\$24.95
Epyx:	
Destroyer	\$22.95
Sub Battle Simulator ...	\$27.95
Impossible Mission 2 ...	\$28.95
Microprose:	
Silent Service	\$22.95

World Class
Leader Board
\$25.95

Mindscape:	
Balance of Power	\$27.95
Harrier Combat Simulator	\$27.95
Origin:	
Moebius	\$23.95
Ogre	\$18.95
Strategic Simulations:	
Gettysburg	\$35.95
Kampfgruppe	\$35.95
Phantasie III	\$25.95
Sublogic:	
Flight Simulator	\$31.49
Jet Simulator	\$31.49
Scenery Disk	\$CALL
Unison World:	
Print Master	\$25.95
Art Gallery 1 or 2 ... ea.	\$14.95
Fonts & Borders	\$17.95

Access:	
Echelon	\$25.95
Mach 128	\$28.95
Wld. Cl. Leader Brd. ...	\$22.95
Fm. Courses 1 or 2 ... ea.	\$11.95
Action Soft:	
Up Periscope	\$18.95
Thunderchopper	\$18.95
Activision:	
Last Ninja	\$19.95
Might & Magic	\$22.95
Crossbow	\$19.95
Maniac Mansion	\$19.95

4X4 Off Road
Racing
\$22.95

5-1/4

Diskettes

Disk Notcher	\$5.95
Maxell:	
SSDD	\$7.95
DSDD	\$8.95
Bonus:	
SSDD	\$5.95
DSDD	\$6.95
SKC:	
DSDD	\$6.95
DSHD	\$13.95

Generic:	
DSDD	\$4.95
Verbatim:	
SSDD	\$8.99
DSDD	\$11.50
3.5	
Maxell:	
SSDD	\$11.50
DSDD	\$17.95

Bonus:	
SSDD	\$10.95
DSDD	\$13.95
Verbatim:	
SSDD	\$12.95
DSDD	\$18.95
SKC:	
SSDD	\$9.95
DSDD	\$13.99

Tac 3	\$9.95
Tac 2	\$10.95
Tac 5	\$12.95
Tac 1 + IBM/AP	\$26.95
Slik Stick	\$6.95
Black Max	\$10.95
Boss	\$11.99
3-Way	\$19.99
Bathandle	\$16.75

Joysticks

Winner 909	\$24.95
Wico IBM/AP	\$29.95
Lipstick Plus	\$14.95
Kraft KC III Ap/PC	\$16.95
Kraft PC Joystick Card	\$27.95
Kraft Maze Master	\$8.95
I Controller	\$13.95
Epyx 500 XJ	\$13.95

LycO Computer

Marketing & Consultants

Since 1981

Air Orders Processed Within 24 Hours

LASER 128

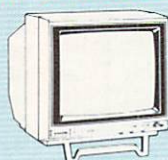
- Built-in 128K RAM
- Built-in 5 1/4 Drive
- Built-in Parallel Port
- Built-in Mouse/Joystick Port
- High Res. Graphics

Apple Compatible



MAGNAVOX

BM7622 Amber Monitor



- Composite Video
- 900 Dots of Resolution
- Anti-Glare CRT Face
- Line Level Audio Input
- One-Year Limited Warranty

SEIKOSHA Sp1000AP

- Apple Compatible
- 100 cps Draft
- 20 cps NLQ
- Auto Paper Loading
- Tractor & Friction Feed Std.



\$599⁹⁵

Quantities Limited

\$10 off any program with this system.

PC COMPATIBLE HARDWARE

Laser Compact XTE 640K	\$589.95
Laser Turbo XT Model II	\$629.95
Blue Chip Popular 1A	\$629.95
Vendex Headstart Color	\$969.95
Vendex Headstart Mono	\$809.95
Vendex Headstart 888 LTD Color	\$ CALL
Sharp PC 4501	\$639.95
Sharp PC 4502	\$1169.95
Zucker CGA ColorCard	\$89.95
BCC CG ColorCard	\$94.99
Mitsubishi 310/AT	\$1229.95
ATI Graphics Solution	\$129.95
ATI EGA Wonder	199.95
ATI VIP	\$299.95
Kraft PC Joystick Card	\$24.95

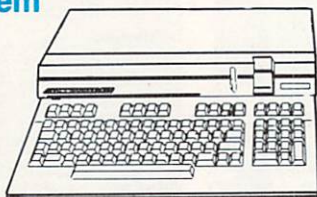
COMMODORE

128 D System

\$439⁹⁵

Commodore
128 D and
Thompson
4120

\$629⁹⁵



LASER 128

Apple IIc-IIe Compatible

- Built-in 128K RAM
- Built-in 5 1/4 Drive
- Built-in Parallel Port
- Built-in Mouse/Joystick Port
- Hi Res. Graphics

\$369⁹⁵



**\$10 off any Item Purchased
With Laser 128!**

Seagate HARDWARE

5.25" Half Heights

ST225 20 meg 65msec MFM ..	\$219.95
ST225N 20 meg SCSI	\$289.95
ST238R 30 meg RLL	\$229.95
ST251 40 meg 40 msec MFM .	\$339.95
ST251-1 40 meg 28 msec MFM .	\$419.95
ST277R 65 meg 40 msec RLL .	\$379.95

3.5"

ST125 20 meg 40 msec MFM .	\$235.95
ST125N 20 meg SCSI	\$299.95
ST138R 30 meg RLL	\$249.95
ST138N 30 meg SCSI	\$329.95
ST157R 49 meg RLL	\$399.95
ST157N 48 meg SCSI	\$439.95

Seagate Internal Cards

ST125 20 meg Internal Card ...	\$299.95
ST157R 49 meg Internal Card .	\$485.95

Controllers

MFM Controller (XT)	\$55.95
RLL Controller (XT)	\$64.95

Call for kit pricing and specials.

Ask about our
Seagate Paired Solutions!

COMMODORE HARDWARE

64C Computer	\$149.95
C128D Computer/Drive	\$439.95
1541 II Disk Drive	\$179.95
1581 Disk Drive	\$189.95
Excel FSD-2+ C64 Drive	\$149.95
1802C Monitor	\$179.95
1084 Monitor	\$279.95
C1351 Mouse	\$39.95
1764 RAM C64	\$117.95
Colt PC	\$679.95

COMMODORE 1541 II Disk Drive

64C Computer

- 64K RAM
- Serial Port
- Expansion Port
- Two Joystick/Paddle Ports
- Video Port
- RF TV Port
- Built-in Basic 2.0



- 170KB of Data (formatted)
- 5 1/4 inch Floppy Disk
- Data Transfer Rates 400 Bytes per Second

SEIKOSHA

180 VC

- 100 cps Draft
- 24 cps NLQ
- Tractor & Friction Feed
- Commodore Direct Connect



\$459⁹⁵

Quantities Limited

\$10 off any program with this system.

Thomson Advanced Graphics Controller™ GB300

with Mouse Interface

SPECIAL

\$149⁹⁵

Display Adapters Emulated

- IBM Monochrome Display Adapter (MDA)
- Hercules Graphics Card (HGC)
- IBM Color Graphics Adapter (CGA)
- IBM Enhanced Graphics Adapter (EGA) (optional add-on module)

Extended Functions

- Up to 1024 x 768 Monochrome Resolution
- Up to 640 x 480 Resolution with 64 Colors

Seagate

ST138R 30 Meg Internally Mounted Card

- Premounted on its own Controller Card
- EZ Slot Installation (app. 10 min.)

\$335⁹⁵

20-30-49 meg drives available!

LASER 128

Compatible with Apple Software.

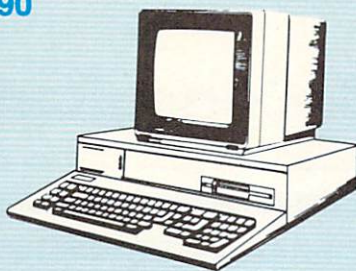
Laser 128 EX	\$419.95
Laser External 5 1/4 Drive	\$119.95
Laser External 3 1/2 800K Drive .	\$199.95
Two Slot Expansion Box	\$44.95
Laser 128/EX Mouse	\$55.95

1-800-233-8760

LASER 1090

Turbo XT Model II

- Dual Speed 4.77-10 Mhz
- 640K Std.
- Built-in ColorCard
- 8 Expansion Slots
- Built-in Floppy Drive
- Can Expand to 2 Floppy & 2 Hard Drives
- Green, Amber & Color Monitors Available

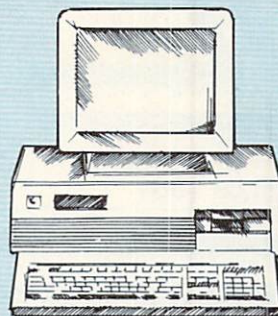


\$629⁹⁵

8088 XT



- 16 Bit 8088 Intel Running at 4.77/10 Mhz
- 640K RAM
- One 360K Floppy, 1 Parallel Port
- Multi I/O (Includes 1 Serial Port, 1 Game Port, Clock Calendar, Disk Controller for Two 360K's)
- (8) Eight Expansion I/O Slots
- Jr. AT Case w/Keylock Turbo, Reset LED
- 101 Key Keyboard
- 150 Watt Power Supply
- One Year Warranty on Parts & Labor



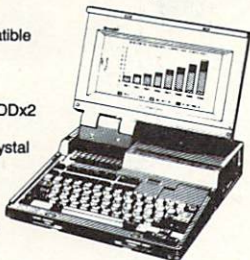
\$529⁹⁵

SHARP PC-4502 Laptop

\$1169⁹⁵

FROM SHARP MINDS COME SHARP PRODUCTS™

- 80188 Compatible (7.16 Mhz)
- RAM 640K Standard
- 3.5" 720KB FDDx2
- Illuminated Supertwist Crystal
- 88-Key Step-Sculptured
- MS-DOS 32
- GW-Basic 32



Sharp 4501 Laptop \$639.95

Amstrad Laptop PPC 640

\$779⁹⁵



- 2400/1200/300 Baud, Hayes Compatible Modem Built-in
- Supertwist, LCD Screen
- Enhanced Keyboard
- PC Compatibility
- 640K Memory

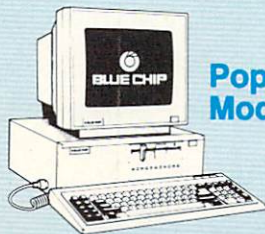


Toshiba T-1000

- 512K Expandable to 640K
- One 3.5" 720K Drive
- MS DOS 2.11 in ROM
- Borland Sidekick
- One Year Warranty

\$839⁹⁵

BLUE CHIP ELECTRONICS



Popular Model 1A

\$629⁹⁵

- Guaranteed 100% IBM PC-XT Compatibility or Your Money Back
- 8088-2 16-bit Central Processor. Clock 4.77 Mhz and 8.0 Mhz
- One 5.25" 360K Floppy Disk Drive
- 512K RAM, Expandable to 640K RAM on Motherboard
- Multi-video Card Supports CGA, MDA, HGA. One Port for 9-pin D-sub TTL or RGB Connector
- One Serial (RS232C) Communications Port
- IBM AT Style Keyboard. Low Profile Step-Sculptured, 84 Keys. All Keys are Software Programmable

HEADSTART by Vendex



Color System

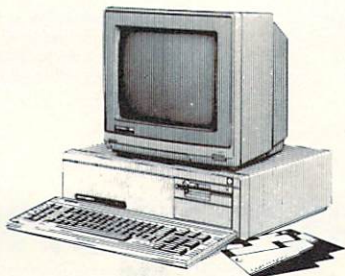
- A Fully IBM® Compatible System Perfect for the Computer Novice
- Ultra Fast 8 Mhz Intel 8088-2 Processor
- 512K RAM Memory Expandable to 768K
- 2-360K Disc Drives Standard
- 7 Expansion IBM® Slots and a Hefty 135 Watt Power Supply for Future Expandability
- Color Monitor Included

\$969⁹⁵

Mitsubishi 310/AT

- 640K Expandable to 5.5 MB
- 12 Mhz/1 Wait
- 6 I/O Slots
- Enhanced Keyboard

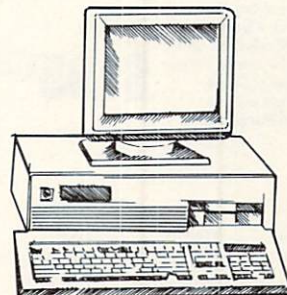
\$1229⁹⁵



286 AT



- 16 Bit 80286 Intel Running at 8/12 Mhz
- 640K High Speed RAM (Expandable to 4MB)
- One 5.25" 1.2MB Floppy Drive
- 8 I/O Slots (6/16 Bit and 2/8 Bit)
- 200 Watt Power Supply
- 101 Key Enhanced Keyboard
- High Speed Dual FD/HD Controller
- One Year Warranty on Parts & Labor



\$999⁹⁵

Please refer to previous pages for ordering information.

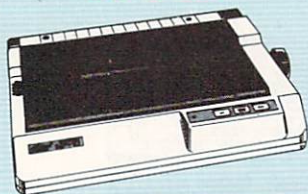


LycO Computer

Marketing & Consultants

Since 1981

NX-1000



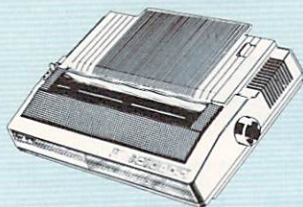
\$169⁹⁵*

**w/cable purchase*

Star's answer to 9 pin dot matrix printers. A soft touch control panel and Star's paper park feature solves your multi-document needs. 144 cps draft and 36 cps NLQ give you high resolution 9 pin performance in an affordable package from Star.

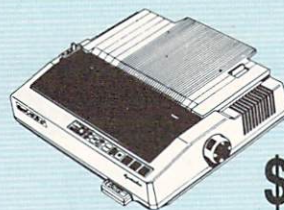
NX-15

\$289⁹⁵



Star's user friendly 15" wide carriage printer. A soft touch control panel and 120 cps-30 cps NLQ is at your command. Excellent 9 pin performance for you, from Star.

NX-2400



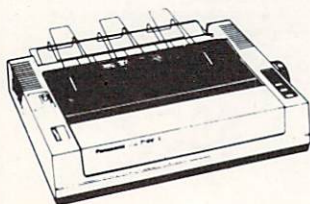
\$309⁹⁵

Superior 24 pin performance is now a luxury you can afford. With 170 cps draft and 57 cps letter quality mode, your document needs are quickly taken care of. Add Star's paper parking feature, variety of print styles and you have unprecedented 24 pin performance at a price you can afford.



NX-1000	\$169.95*	NR-10	\$319.95	NB24-15 24 Pin	\$545.95
NX-1000C	\$169.95	NR-15	\$419.95	Laser 8	\$1759.95
NX-1000 Color	\$225.95	NB-15 24 Pin	\$669.95	ND-15	\$349.95
NX-1000C Color	\$229.95	NX-2400	\$309.95	<i>*w/cable purchase</i>	
NX-15	\$289.95	NB24-10 24 Pin	\$369.95		

1091i Model II



Speed and flexibility for your office or home. Panasonic combines 192 cps draft with 38 cps NLQ for a wide variety of printing needs. Quality support through a 2 year warranty from Panasonic.

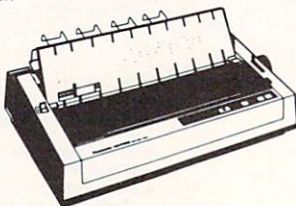
\$195⁹⁵*

**quantities limited*

KXP 1524

High resolution letter quality printing at 240 cps draft and 80 cps LQ mode. 24 pin printing and Panasonic's 2 year warranty provide for a superb 15" wide carriage printer.

\$559⁹⁵



KXP4450 Laser Partner



\$1599⁹⁵

Move your business in the laser age with Panasonic. 512 K memory comes standard. 11 pages per minute print speed makes it the fastest in its class. Panasonic's laser technology and 2 year warranty — commitment to your printing needs.

1080i Model II	\$149.95*	3151	\$CALL
1091i Model II	\$195.95*	KXP 4450 Laser	\$1599.95
1092i	\$309.95	1524 24 Pin	\$559.95
1592	\$375.95	Fax Partner	\$579.95
1595	\$439.95	Optical Scanner	\$859.95
3131	\$289.95	1124	\$319.95

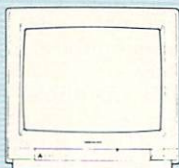
**quantities limited*

Panasonic
Office Automation

1-800-233-8760

MAGNAVOX CM8762

- 17% Larger Screen Than Standard 12" Monitors
- RGB TTL (CGA)
- Composite Video Inputs
- 640X 240 Resolution
- Green Text Display Switch
- Audio Input
- Built-in Tilt Stand
- One-Year Limited Warranty



\$239⁹⁵



Attention Educational Institutions:

If you are not currently using our educational service program, please call our representatives for details.

2400 Modem

*Avatex*TM



- Auto/manual Originate or Answer
- Auto Speed Select in Originate/answer Modes
- RS-232C Interface
- 2-Year Warranty

\$149⁹⁵

MONITORS

Thomson:

4120 CGA \$219.95*
GB 300/301 \$149.95*
**quantities limited*

Blue Chip:

BCM 12" Green TTL ... \$54.95

Magnavox:

BM7652 \$79.95

BM7622 \$79.95
7BM-613 \$79.95
7BM-623 \$79.95
CM8502 \$179.95
9CM-053 \$339.95
CM8762 \$239.95
8CM-515 \$259.95
9CM-082 \$439.95

Avatex:

1200e \$65.95
1200i PC Card \$65.95
1200p \$89.95
1200hc Modem \$89.95
2400 \$149.95
2400i II PC Card \$129.95

Hayes:

Smartmodem 300 \$139.95
Smartmodem 1200 \$279.95
Smartmodem 2400 \$419.95

US Robotics:

Courier 1200 \$169.95
Courier 2400 \$289.95
Sportsler 1200 PC \$79.95
Courier 2400e \$319.95
Courier 2400 PS \$259.95
Courier 9600 MST \$619.95

NEC

Multisync II \$589.95

PRINTERS

Okidata

Okimate 20 \$129.95
Okimate 20 w/cart \$189.95
120 \$189.95
180 \$219.95
182 \$209.95
182+ \$225.95
183 \$239.95
292 w/interface \$449.95
293 w/interface \$585.95
294 w/interface \$799.95
393 \$955.95

Laser 6 \$CALL
390 \$479.95
391 \$649.95
320 \$345.95
321 \$475.95

Toshiba

321SL \$489.95
341 SL \$659.95
351 SX 400 cps \$979.95

Epson

LX800 \$184.95
FX850 \$339.95
FX1050 \$499.95
EX800 \$434.95
LQ500 \$339.95
GQ3500 SLOW
LQ850 \$525.95
LQ1050 \$749.95

Brother

M1109 \$189.95
M1509 \$335.95
M1709 \$439.95
Twinwriter 6 Dot & Daisy \$899.95
M1724L \$569.95
HR20 \$345.95
HR40 \$599.95
HR60 \$649.95

Citizen

120 D \$149.95
180 D \$159.95
MSP-40 \$279.95
MSP-15E \$309.95
MSP-50 \$369.95
MSP-45 \$349.95
MSP-55 \$469.95
Premiere 35 \$539.95
Tribute 224 \$539.95
Tribute 124 \$439.95

MP5420FA



\$999⁹⁵

- 420 cps Draft
- 104 cps NLQ
- Friction/tractor Feed
- 2-Year Warranty

SL-80Ai

\$329⁹⁵

- Letter Quality 54 cps
- 135 cps Draft
- Automatic Paper Loading
- 16 K Buffer



SK3000Ai



\$349⁹⁵

- 300 Cps Draft
- 50 Cps NLQ
- Quiet 55 dba
- 7 Colors
- Rear & Bottom Paperpaths

SEIKOSHA

SP 180Ai \$125.95*
SP 180VC \$125.95*
SP 1000VC \$139.95
SP 1200VC \$149.95
SP 1200AS RS232 ... \$179.95
SL 80Ai \$329.95
* Limited Quantities

MP5420FA \$999.95
SP Series Ribbon \$7.95
SK3000 Ai \$349.95
SK3005 Ai \$445.95
SPB 10 \$CALL
SL 130Ai \$599.95
SP 1600Ai \$CALL

Price Guarantee

Since 1981, we have led the industry by continuing to offer the lowest national prices while providing quality service. Many companies have come and gone trying to imitate our quality and service. If by some oversight we do not have the lowest prices advertised on the products you desire, then we would appreciate the opportunity to rectify this oversight.

Please refer to previous pages for ordering information.



GIVE THE GIFT THAT COULD BE WORTH MILLIONS



When you give Gail Howard's book **LOTTO: How to Wheel A Fortune** you give the lottery player the best information available on how to improve his or her odds of **WINNING THE LOTTERY**

Gail Howard is the nation's leading lottery expert. Her track record in helping Lotto players win big prizes is unprecedented in the history of lottery.

AT LEAST 13 MAJOR LOTTO PRIZES (INCLUDING TEN FIRST PRIZE JACKPOTS TOTALLING \$30.8 MILLION) WERE WON USING GAIL'S SYSTEMS.

Only this book has over 100 easy to use Gail Howard systems with:

- Valid Minimum Win Guarantees
- EXACT Guaranteed ODDS IMPROVEMENT UP to 667%
- Multiple wins possible with each system.

FOR THE COMPUTER ENTHUSIAST

Gail Howard's **Smart Luck** Computer Wheel on 5¼" or 3½" diskettes (\$29.95 + \$2 s/h)
312-934-3300

This Gift is a **GUARANTEED WINNER**

SMART LUCK PUBLISHERS

Send \$14.95 + \$2 s/h for each book to:
P.O. Box 1519 — Dept. D-4 — White Plains, NY 10602

PCjr Owners

Everything you'll ever need!

- Memory sidecars which increase memory to 736K
- Second & third disk drives which snap on top
- Disk drives which read & write 1.2 MB AT diskettes
- 3½" disk drives which store up to 813K
- 20 MB hard disk drives which are DOS compatible
- ROM's which make your display easier to read
- Upgrades which expand 128K sidecars to 512K
- Speed up & pseudo DMA cartridges
- Clock modules, printer ports & speech attachments
- Joysticks, optical mice & light pens
- Adapters to use your PCjr monitor with a PC
- Switching boxes for monitors and/or serial devices
- Full size keyboards & numeric keypads
- Keyboard, modem, printer & monitor cables
- Basic manuals & also Cartridge Basic
- Game cartridges, software & Paint programs

PLUS MUCH, MUCH MORE!!

Write to us or call our toll free number to receive a FREE catalog of PCjr add-on products.

PC ENTERPRISES

"The jrProducts Group"

Box 292 • Belmar, NJ 07719

(800) 922-PCJR (201) 280-0025



ICD has new specifications for its FA-ST hard drive for the Atari ST.

20MB drive has a suggested retail price of \$699.95. The 30MB drive sells for \$949.95, while the 50MB unit retails for \$1,099.95.

ICD, 1220 Rock St., Rockford, IL 61101

Circle Reader Service Number 203.

Air Jordan Against the Bird

Home computer users can now decide who is the class of the NBA. Electronic Arts has released *Jordan vs. Bird: One*

on One, which features Chicago Bull superstar Michael Jordan and famed Boston Celtic Larry Bird.

The two roundball greats take the court for three events. Make Michael soar in the Slam Dunk Competition, his specialty; or, let Larry launch rainbows in the Three Point Shootout, his domain. For more action, pit the two superstars against each other in a one-on-one battle.

The Commodore 64 version has a suggested retail price of \$29.95. A version for IBM PCs and compatibles sells for \$39.95.

Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404

Circle Reader Service Number 204.

Seeing Stars

Ticket to Hollywood, the latest adventure simulation from Blue Lion Software, takes players through eight decades of sunny Southern California movie history.

Six detailed 3-D maps guide players to famous landmarks or act as aids in following famous stars. Trivia questions test players' knowledge of stars such as Katharine Hepburn, Spencer Tracy, and Humphrey Bogart. The object of the game is to follow leads, gather clues, and try to solve one of the 25

mysteries. Players can also quiz the "director" about their favorite stars or movies.

Ticket to Hollywood is available for the Commodore 64 and sells for \$29.95. Versions for the Apple II, Apple IIGS, and IBM PCs and compatibles cost \$39.95. A Macintosh edition retails for \$44.95.

Blue Lion Software, 90 Sherman St., Cambridge, MA 02140

Circle Reader Service Number 205.

Zoom Through Zoomland

Discovery Software's *Zoom!*, for the Commodore 64, is a nonviolent, arcade-style adventure through Zoomland.

Guide Zoomer, the game's hero, as it is chased through outer space by a gang of reckless enemies, all the while collecting territories and points. Players must be careful when Zoomer tries to advance to the next level because of the "oops" factor. One or two players can compete on 50 levels of play.

The suggested retail price of *Zoom!* is \$29.95. The game also features a 30-day unconditional money-back guarantee.

Discovery Software, 163 Conduit St., Annapolis, MD 21401

Circle Reader Service Number 206.

AIM HIGH



PRESENTING TECHNOLOGY THAT LETS YOU PROGRAM YOUR OWN DESTINY.

Electronics and computer equipment can be state-of-the-art today. And ready for the garbage can tomorrow.

Demand for technology is changing that fast. And the people who can stay on top of it can write their own ticket in this world.

That's the beauty of the Air Force.

We can put you to work with technology that you may not read about in magazines for years.

We can teach you how to make sense of the

most intimidating circuitry in existence anywhere.

If you attend college, we'll pick up 75% of your tuition. You can even earn an associate degree from the Community College of the Air Force.

What does all that mean?

It means there's no telling where technology is going in the future.

But with Air Force training, you've always got a future to look forward to. For more information, call an Air Force recruiter at 1-800-423-USAF.



COMPUTE!

specific

New DOS 4.0; 64 Scruples; Hyper Apple II; Sculptured Amiga; Mac Expo Exposé; and ST Shareware

MS-DOS

The hottest news for PC users this fall is the release of a major new version of MS-DOS: DOS 4.0. With enhancements that include a full-featured shell, support for expanded memory, and hard disk partitions beyond the previous 32-megabyte limit, the new DOS brings much of the power of Windows and OS/2's Presentation Manager to the installed base of nearly 15 million MS-DOS users.

Although the new DOS was developed by Microsoft, that company isn't selling the operating system directly to end users. Instead, it's supplying computer manufacturers with versions of DOS 4.0 to customize and distribute with the systems they market. IBM, however, is selling its version of MS-DOS 4.0 to anyone who goes to an authorized IBM dealer with \$150 (upgrades cost \$95). IBM only guarantees that the new DOS will work on PCs and PS/2s bearing the IBM brand, but the new operating system should run on any true compatible.

Installing the new DOS is easy, but hard disk users may have problems. IBM's DOS 4.0 doesn't support RLL-controlled hard disks, nor will it necessarily recognize hard disks formatted with earlier versions of MS-DOS (earlier versions of PC-DOS seem to work fine,

however). The latter problem is solved by reformatting your hard disk with DOS 4.0.

DOS 4.0's most impressive feature is its shell. The shell has two main areas—a menu system and a file system. When you boot up, the shell comes up in its menu system. From there you can run programs, select a group of programs, or add your own programs or groups of programs to the menu.

The other side of the shell is the file system. The file system divides the display vertically into two sections. The left half of the screen shows a tree diagram of your disk; the right half contains the files in the selected directory. You can run programs from the file system simply by selecting them and pressing Enter (or by double-clicking, if you have a mouse). A multiple-directory feature lets you divide the display into two sections horizontally and have the trees and subdirectory files of two drives displayed on the screen together.

One of the file system's most useful features is that it allows you to associate a data-file type with a particular executable file. If your word processor's documents use extensions such as *TXT* and *DOC*, for example, you can tell the shell to load your word processor when you select a *TXT* or *DOC* file.

The menu system, file system, and association feature make the DOS shell one of the most powerful operating environments going. Even if you don't like shells, you can use DOS's familiar command-line interface and enjoy 4.0's other features.

Heading the list of new features are two commands: *INSTALL* and *MEM*. *INSTALL* loads some TSR (Terminate but Stay Resident) programs in your *CONFIG.SYS* file, and *MEM* gives you a quick look at system memory.

One of 4.0's nicest fea-

tures is buried in the documentation. Right from the first PC released in 1981, the entire line has suffered from a sluggish cursor. Even the cursor on an 80286-powered AT running at 12 MHz lulls you to sleep. As a result, cursor-enhancement utilities have become an important DOS add-on.

DOS 4.0 addresses the slow-cursor problem by adding a new wrinkle to the *MODE* command. *MODE* now allows you to set the cursor's rate of speed and delay. The setting that gives the maximum speed is *MODE CON RATE=32 DELAY=1*, which is what you'll probably want to use.

In addition to all these features, more than 20 DOS commands have been enhanced—many to take advantage of expanded memory. This DOS is a winner.

Makin' a LIST

If you've suffered with DOS's *TYPE* command, you're probably convinced that there must be something better. There is. The answer is one of the most popular shareware programs going, Vernon Bueg's *LIST* (456 Lakeshire, Daly City, California 94015).

LIST offers everything you could want in a file-browsing utility, and more. It loads in a flash, scrolls at a dizzying speed, and searches for strings at a dazzling pace. But this is only the beginning. *LIST* has 43-line EGA support, a help screen, windows, color customization, and word-wrap. One of *LIST*'s most welcome features is its ability to present a file as a hexadecimal listing. When you've got to know *exactly* what's in a file—control codes and all—this feature is a lifesaver.

Perhaps *LIST*'s most useful drawing card is its ability to write blocks of text to a file. To

CAN A COMPUTER GAME MAKE A PERSON CRY?

*King's Quest® IV did
on June 4, 1988!*



When King's Quest IV debuted in front of a live audience, the face of computer entertainment was changed forever. The scene began with a soul-stirring orchestration, lifted to a triumphant chorus, and then elevated to the heralded announcement of trumpets as the hero, King Graham, entered the scene. The eyes of everyone in the room were mesmerized to the screen as the lifelike King appeared on screen, breathtakingly detailed from the tranquil look in his eyes to the growing creases upon his forehead. Suddenly, the revered silence was filled by gasps of shock around the room as King Graham suddenly slumped to the floor.

Moments later, when the lights came up, one could see the mist that yet lingered in the spectators' eyes. Even more startling, tears were found streaming down the face of a woman in the third row.

What could have happened to make a crowd of computer enthusiasts behave so unusually at the screening of a computer game? What could have happened to merit such a display of emotion?

**"WONDROUSLY MAGICAL...
ABSOLUTELY GORGEOUS, BOTH
VISUALLY AND MUSICALLY."**

- Computer Entertainer

POWERFULLY EMOTIONAL

Be prepared to find out for yourself why King's Quest IV is the first computer game



to make people cry. And laugh. And sigh. And shout for victory.



King's Quest IV. Better graphics than ever. The best animation around. A soundtrack straight out of the movies. And the only game to test your emotional fortitude.

Sierra's new 3-D
Animated Adventures.

**WE HATE TO SEE A
GROWN-UP CRY (BUT
SOMETIMES IT HAPPENS
WHEN YOU DO GAMES
RIGHT).**



IBM & compatibles, Apple IIGS, Atari ST

SIERRA®
(209) 683-6858

King's Quest is a registered trademark of Sierra On-Line, Inc. © 1988 Sierra On-Line, Inc.

Sierra On-Line, Inc. • P.O. Box 485 • Coarsegold, CA 93614

use this feature, simply mark the beginning and ending blocks of text you want to write and tell *LIST* to write the block to a file. You can write blocks to separate files or append several blocks to one file. If you're studying a lot of on-disk documentation, this feature is worth its weight in gold.

Buerg is always improving *LIST*, so try to find the latest version from your favorite shareware source, or contact Buerg directly. If you find *LIST* useful, the author requests a \$15.00 donation.

Less Is More

Imagine sitting down at your computer with your favorite word processor loaded and typing

adcom
d Editor
TufI of dec 15, 1988. Pls send us
2000 copies of c. Ifqs, plsasap.
vty

You'd expect strange looks from anyone watching over your shoulder.

But if you had Productivity Software International's *PRD+* (1220 Broadway, New York, New York 10001; 212-967-8666; \$89.95) loaded, your computer's screen might look like this:

COMPUTE! Publications
324 W. Wendover Avenue
Suite 200
Greensboro, NC

Dear Editor,

Thank you for your letter of December 15, 1988. Please send us 2000 copies of the December issue of *COMPUTE!*. If you have any questions, please let us hear from you as soon as possible.

Very truly yours,

PRD+ is a TSR that instantly translates shorthand you type at the keyboard. You can use Gregg Standard (provided) and customize it to suit your needs, or you can design your own shorthand. Unlike most keyboard macro programs that let you assign strings to keys and key combinations, *PRD+* lets you assign strings to strings. So *asap* can mean *as soon as possible*, and *vty* can stand for *Very truly yours*. *PRD+* also lets you assign strings to keys and key combi-

nations, so it has all the power of a traditional dedicated keyboard macro program, too.

After you've loaded *PRD+*, all the shorthand definitions—called *short forms* in *PRD+*—are at your disposal. To type the word *the*, you press *t* followed by the space bar, the Enter key, or any punctuation mark.

Pressing the Control key twice calls *PRD+*'s main menu to the screen. From the menu you can view, add, delete, change, or record any strings or keyboard commands. You can also load new short forms (many are provided with the package), toggle *PRD+* off (leaving the program in memory), or unload the program from memory altogether (every TSR should have this last option).

Just so you'll know how much time and typing *PRD+* is saving, the program keeps track of your savings. With *PRD+*, you can see how many keystrokes you've typed, how many keystrokes you've saved using the short form, how much time you've saved by using *PRD+*, and your word-per-minute rate with and without the program.

— Clifton Karnes

vanced Dungeons and Dragons line, *Radiance* uses the concepts and the rules of TSR's famous fantasy role-playing game. Complete with four double-sided disks, a detailed manual, and a history of the adventure, the *Radiance* designers have succeeded in capturing the feel of AD & D and working within that game's guidelines.

Advanced D & D is a more detailed, complex version of the original Dungeons and Dragons game, a precomputer, open-ended role-playing game that has inspired popular computer games like *Zork*, *Wizardry*, and *Bard's Tale*.

Pool of Radiance doesn't use all of AD & D's rules, but it does maintain much of what makes that game so interesting—for example, its emphasis on creating characters. Like AD & D, your character's traits are randomly chosen, and you can keep "rolling" until you get traits you like. Your character can be male or female, human, dwarf, elf, and so on. You can also choose a class (hunter, warrior, magic-user) and a moral alignment. Then—and this is nicely done—you can define what your character looks like by selecting from a gallery of heads, bodies, and icon types.

During the game, you see what's directly ahead of you and take action accordingly. There are many places to visit, many creatures to fight, and treasure and clues to find. *Radiance* is a rich adventure; completing it will take a major commitment of time. For AD & D addicts, or for anyone interested in computerized role-playing games, it offers a great deal.

to detail how to use its frame tools, strip tools, and movie tools to create sequences you can record on your videotape.

HVP's base is the frame. To create a frame, select a backdrop (a full-screen graphic used as the background) and a background color. Then you add a graphic by choosing one from among the several included on the disk and positioning it on the screen. You can then include text messages by using the fonts included in the package (fonts range in size from 14-point to 26-point).

The next step is to choose your "effect" for that frame, which defines how the graphic elements move onto the screen. Effect types are wiping, tearing, scrolling, and spiraling. For example, a line of text can move across the screen from the top left to the bottom right or scroll from top to bottom. Too many varied effects will detract from your production, of course, but effects are the heart of *HVP*.

You can place as many as 16 frames in a strip. *HVP* gives one 5-second countdown, during which you start recording, and another countdown to let you know the strip has finished running. Save your strips to a data disk and combine them into a movie (a series of connected strips). *HVP* helps you record strips in sequence by signaling when you should pause and restart recording on the VCR.

HVP includes 12 pre-designed templates, ranging from a baseball video to a vacation sequence—but, eventually, you'll want to design your own.

Under the Boardwalk

The idea behind Leisure Genius's computerized versions of the board games *Scrabble* and *Scruples* (distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, California, 94404; 415-571-7171) is to be faithful to the board versions while allowing players to compete against human or computer opponents. This design lets you play the game when you can't get a group of people together.

Lights, Camera, Action!

Add a personal touch to your video recordings with Epyx's *Home Video Producer* (Epyx, 600 Galveston Drive, Redwood City, California 94063; 415-366-0606; \$49.95). Beginning with instructions for connecting your 64/128 to your VCR and television set (or monitor), or to a camcorder, *HVP*'s 46-page manual goes on

64 & 128

The big news this month for fantasy-role game players is SSI's release of *Pool of Radiance* (SSI, 1046 North Rengstorff Avenue, Mountain View, California 94043-1716; 415-964-1353; \$39.95). The first in their licensed Ad-

JET

The award-winning, premier jet fighter simulator. Exciting and beautiful carrier-based sea missions complement multiple land-based combat scenarios. Easy flight controls make Jet an ideal way to explore the expanding world of SubLOGIC Scenery Disks.

NEW for the IBM PC! Jet Version 2.12 offers FULL EGA ENHANCEMENT with 640x350 16-color resolution. Only Jet and Microsoft Flight Simulator have it!

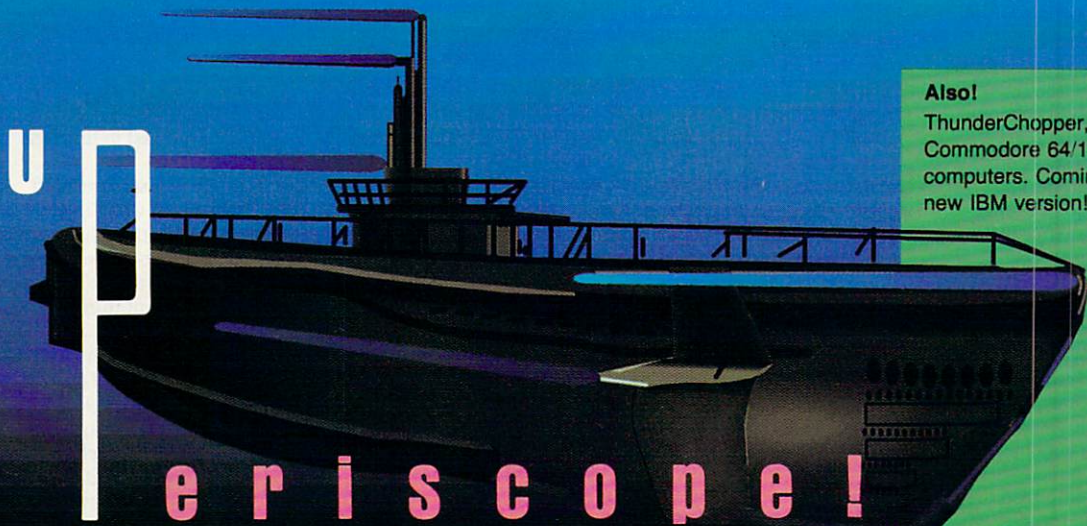
© 1988 SubLOGIC Corporation.
IBM is a registered trademark of International Business Machines Corp.
Apple II is a registered trademark of Apple Computer, Inc.
Commodore 64, Commodore 128, and Amiga are registered trademarks of Commodore Electronics Ltd.
Atari ST is a registered trademark of Atari Corp.



Special "Discover the World of SubLOGIC" promotional packaging:

- * Jet for the IBM PC, Apple II, Commodore 64/128, Atari ST, and Amiga computers includes a FREE beautiful Japan Scenery Disk, a \$24.95 extra value!
- * Jet for the Commodore 64/128 is available without Japan Scenery Disk at a special low "discover SubLOGIC" price (\$10.00 off) through selected discount channels.

SubLOGIC (217) 359-8482
ORDER LINE: (800) 637-4983
(outside Illinois)



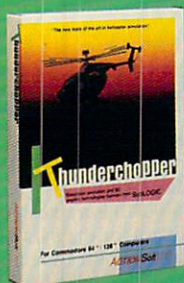
Also!

ThunderChopper, available for the Commodore 64/128 and Apple II computers. Coming soon, a great new IBM version!

The creators of Microsoft Flight Simulator Version 3.0 take submarine simulation to new depths of FUN!

See your dealer, or contact ActionSoft for more information. Up Periscope! is available on disk for the IBM/Tandy/compatibles and Commodore 64/128 computers. For direct orders please indicate which computer version you want, enclose \$29.95 plus \$2.50 for shipping and handling, and specify UPS or first class mail delivery. Visa, MasterCard, and American Express charges accepted.

ActionSoft
201 West Springfield Avenue
Suite 711
Champaign, IL 61820
(217) 398-8388



Scrabble (\$32.95) allows up to four players, any number of which may be computer-controlled. Computer players can be assigned one of eight levels of expertise. After that, the game plays like the board game.

The computer version has two weaknesses. First, the computer-controlled players don't play by the rules. At level 8, my computer opponents consistently created complex tile formations with two-letter "words" like *aa*, *wt*, and other impossibilities. Second, the interface is weak. You can juggle your tiles, but not by picking each up and moving it around your rack; instead, a menu command juggles them all randomly. You don't pick up the tiles and place them on the board either; rather, you type out the word and specify where you want it to start.

Scraples (\$39.95) is more successful. Human players enter their personality traits, assigning levels for characteristics such as principles, personal integrity, trustworthiness, greed, and shyness. The program checks whether or not your answers to the game's dilemmas are consistent with your personality values. It's interesting to watch the computer players make decisions and challenge each other. Often their votes seem inconsistent, but a great deal of thought has obviously gone into making it possible for the computer to handle the questions.

Both games are good translations of the originals, but neither threatens to take the place of the board versions. The fun in both games comes from sitting around the table with family, friends, and munchies; unless you have nobody to play with, these computerized versions seem counterproductive.

Save It, Buddy

Quick Brown Box (Brown Boxes, 26 Concord Road, Bedford, Massachusetts 01730; 617-275-0090) is a line of plug-in cartridges for the 64/128 that works in either 64 or 128 mode (there's a selection switch). The boxes act as pro-

gram and data storage units; their battery backup allows you to keep your most-often-used programs in them at all times. A 16K cartridge costs \$69.00, a 32K unit costs \$99.00, and 64K of storage sells for \$129.00.

Each box includes a manager for both 64 and 128 mode, the Quick Brown Box loader program, a checksum program, and other utilities. The manager controls your adding programs to the cartridge, loading them, and deleting them. Load the programs you want onto the cartridge; then either leave them there or save the whole combination to disk. With the latter alternative, you can have several different combinations ready to be loaded into the cartridge at any time. For example, you might have a word processor-telecommunications combination, a games combination, and a paint-program combination.

The value here is speed. Any program on the cartridge can be loaded instantly with a couple of keystrokes, or, better still, you can have one program on the cartridge autoload when you turn on your computer. You can customize your Quick Brown Box to have your most important programs ready for use as soon as you power up. Interestingly, Busy Bee Software's *The Write Stuff* word processor comes in a version designed specifically for Quick Brown Box; the program automatically saves everything you type into the Quick Brown Box, and everything, including data, is available seconds after powering up your computer.

Power Down

Check out *MicroIllusions'* well-designed *MainFrame* (*MicroIllusions*, 17408 Chatsworth Street, Granada Hills, California 91344; 818-360-3715; \$39.95). Although based on a cliché—mainframe computer decides to destroy humankind—the game does offer colorful, well-drawn screens for you to work through.

—Neil Randall

APPLE II

To find inexpensive Apple II software, you can search the information systems and electronic bulletin boards—if you have a modem and the money for phone bills. Or you can copy or buy user group disks—if you belong to one of these organizations. Or you can look for programs in magazines.

COMPUTE!'s Apple Applications, a bimonthly magazine published by *COMPUTE!* Publications, contains 5–8 Apple II programs in each issue. The programs' type-in format makes it possible to spend time, not money, for good software. Programs are listed in BASIC and assembly language, and error-checking utilities make it easy to enter programs correctly.

Programs in *COMPUTE!'s Apple Applications* run the gamut of software categories: The magazine has published a full-featured word processor, a sophisticated database, and some of the best Apple II arcade games this side of California. Educational programs, programming utilities, and graphics packages round out the selection.

If you own an Apple II and enjoyed the type-in programs *COMPUTE!* magazine used to publish, you'll love *COMPUTE!'s Apple Applications*.

And if you want to spend just a little money and save a lot of time, consider *COMPUTE!'s Apple Applications Disk*. It includes the programs listed in the magazine, plus special files to make the software even more entertaining, educational, or productive.

A year's subscription to

COMPUTE!'s Apple Applications costs \$13.95; a subscription to six issues of the magazine and six companion disks runs only \$39.95. To order, call (800) 727-6937.

Hyper Talk

One of the hottest personal computing topics in the past year has been hypermedia—Apple's *HyperCard* in particular. Released late last summer and included with every Macintosh sold since then, *HyperCard* is an innovative, elegant work that's been described as everything from a software erector set to a database for the masses to a programming tool for everyone.

In its simplest form, *HyperCard* is a graphics database. Screens, called *cards* in *HyperCard* parlance, are gathered together into collections, called *stacks*. By clicking on a card's buttons, you access text, graphics, sounds, other cards, even other stacks; you enter data into predefined fields on the card; and you can create or import graphics. Once they are part of a stack, cards can be called, changed, rearranged, and manipulated in limitless fashion.

Apple II users were left out in the cold when it came to *HyperCard*. Although occasional rumors of *HyperCard*-for-the-II software titillated Apple II users, nothing showed—until now.

Roger Wagner Publishing (105 Pioneer Way, El Cajone, California 92020; 619-442-0522), known for its quality Apple II products such as the *Merlin* assembler and the *SoftSwitch* program switcher, used the San Francisco Apple-Fest to spotlight *HyperStudio*, a new, *HyperCard*-like program for the Apple IIGs. The program is impressive and demonstrates the power of the IIGs, even though it doesn't have the lengthy feature list of its Macintosh cousin.

In *HyperStudio*, you can easily link buttons with text, graphics, and sound, tying together files and data within files. Text files can be connected to graphics screens; sound

WINNER!

Best Educational Program

With Designasaurus from Britannica Software your child will see dinosaurs come alive with sights and sounds* that will astound you. Designasaurus recently won BEST EDUCATIONAL PROGRAM and BEST PRESCHOOL or PRIMARY PROGRAM categories of the SPAs Excellence in Software Awards.

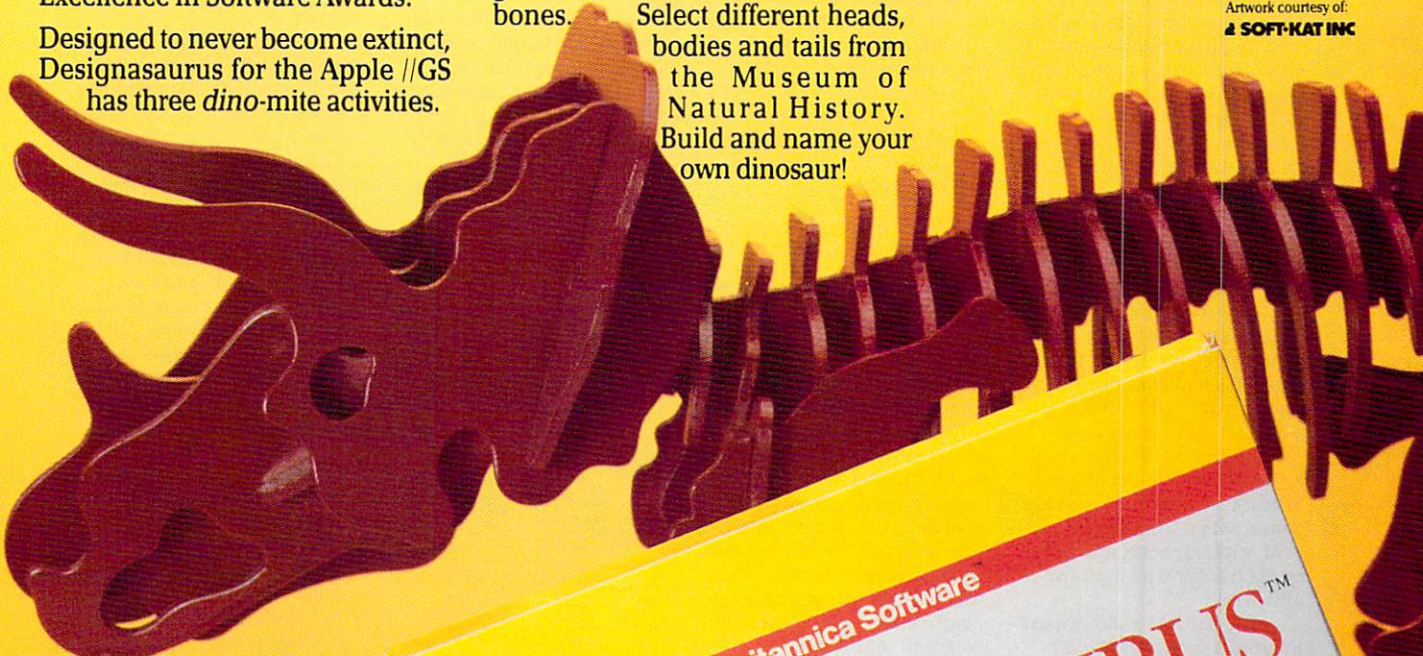
Designed to never become extinct, Designasaurus for the Apple //GS has three *dino-mite* activities.

Survive as a Brontosaurus, Stegosaurus or T-Rex did millions of years ago. Thunder through forests, mountains and swamps. See if you can earn a certificate to the Dinosaur Hall of Fame.

Create your own prehistoric giant from a collection of fossilized bones. Select different heads, bodies and tails from the Museum of Natural History. Build and name your own dinosaur!

Print out 12 different dinosaurs. Each complete with descriptions and information. Select from 3 formats: regular, poster and even T-shirt transfer. Color or paint them. Frame them or wear them. We even include a free T-shirt transfer in every box!

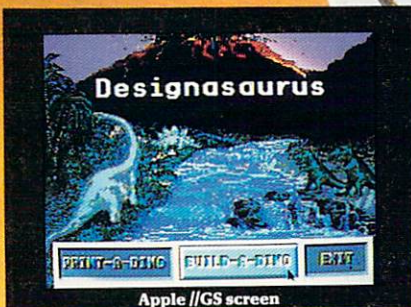
Artwork courtesy of:
SOFT-KAT INC



SUPER HI-RES GRAPHICS!*

DIGITIZED SOUND!*

- Now available:
- MS-DOS
 - Apple IIe, IIc
 - Apple //GS
- Coming Soon:
- C64/128
 - Amiga
 - Macintosh



Don't wait another million years. Get it today at B. Dalton's Software Etc., Babbage's, Egghead, Electronics Boutique, Software City, Waldensoftware, Sears and wherever fine software is sold.

*Apple //GS and Amiga versions only

can be called by clicking a button or pulling up another card.

You create text in *HyperStudio*'s text editor (a full-screen program that takes advantage of the IIGs's fonts) or bring it in from other programs, such as *AppleWorks*. The native *HyperStudio* paint program, which works like *MousePaint*, lets you generate graphics, but pictures in other paint program formats—*Paintworks Gold*, for instance—can be imported directly.

It's in sound digitization that *HyperStudio* really shines, though. *Sound Shop* digitizing software is part of the *HyperStudio* system. In fact, *HyperStudio* owes its existence to *Sound Shop*, for it was only after Roger Wagner Publishing started work on the sound software that the idea of *HyperStudio* came up. Sound is such a vital element of the *HyperStudio* system that the package comes with a sound-digitizing card, a microphone, and an external speaker with built-in amplifier.

The hardware allows users to sample sounds at several rates, store the sounds as files on disk, and later replay them in *HyperStudio* stacks. The sound card connects to the IIGs motherboard, so it doesn't conflict with other cards, nor does it take up a slot. That also eliminates any potential for extraneous noise from the computer. In and of itself, the sound hardware is worth the price of the package.

HyperStudio, a multiple 3½-inch-disk package, contains *HyperStudio*, the *Sound Shop* digitizing software, and *Sight and Sound*, a program you use with *HyperStudio* to design custom startup screens and to replace the IIGs's boring beep with the digitized sound of your choice. Numerous sample stacks are also included to give you an idea of what *HyperStudio* can do. Example sounds and artwork can be viewed and clipped for use in your own stacks.

Although *HyperStudio* requires at least 768K (and possibly more, since the software wasn't in final form at the time of this writing), you don't need a hard disk to use it. Several options let you choose whether

you want some information to be part of the *HyperStudio* stack. Pictures, sounds, even text can be placed in external files, which are then read from another disk; the tradeoff, of course, is a slower speed. Look for *HyperStudio* to be on the shelves before Christmas.

What's the price for all this software and hardware? It's a phenomenal \$129. That's sure to win the hearts and minds of thousands of Apple IIGs owners eager to try out hypermedia.

Where's Apple?

In September, we reported that third-party developers of entertainment software for the IIGs are unhappy with the support they've been getting from Apple. Cinemaware was mentioned in particular, and the company's experiences in getting *Defender of the Crown* out the door were recounted. The rationale offered for such treatment was that Apple was only interested in the home-learning and home-office areas of the market.

Not true, it turns out. It's worse than that.

Listen to what Ezra Sidran, president of Intergalactic Development and creator of the award-winning *Designasaurus* software package, had to say in a recent letter to *COMPUTE!*.

"We are the authors of *Designasaurus* and we would like to amplify upon your comments about the lack of technical support from Apple for the IIGs. We too, like Cinemaware, suffered from a lack of technical support throughout development of the IIGs version of *Designasaurus*. And, like Cinemaware, we had to design our own sound tools, which delayed release of the product.

"These sorts of problems with development on the IIGs are becoming well known throughout the industry. We are not in a position to speculate as to the cause of these problems. However, you imply that Apple is forsaking the entertainment market for the business and educational mar-

kets. Considering that *Designasaurus* won the Software Publishers Association Excellence in Software Awards for Best Educational Game of 1987 and Best Preschool or Primary Educational Program of 1987, and that we received the same poor technical support as Cinemaware, it is probably safe to say that Apple is not singling out entertainment programs for bad treatment. Indeed, Apple seems to be ignoring everybody equally."

— Gregg Keizer

AMIGA

At computer shows and dealerships, some of the best Amiga crowd pleasers are pictures and animation generated with *Sculpt 3-D*. Only a few years ago, artists would have needed a mainframe or minicomputer to generate such realistic images.

You need a lot of determination and patience to work with *Sculpt 3-D*. You must create your own objects, decide on the lighting, and then wait several hours for the completed image to emerge. So it's not surprising that *Sculpt 3-D* add-ons have surfaced to make this fascinating process easier.

InterChange Object Disk #1, from Synthesis (20 West Street, Wilmington, Massachusetts 01887; 617-657-5585; \$19.95), includes an alphabet of flat letters. In *Sculpt 3-D*, you can extrude the letters to make them three-dimensional. An Amiga logo, a human head and figure, a frog on a lily pad, a hot-air balloon, a set of gears,

and a teapot are also included. The disk also includes several objects for use with *VideoScape 3-D*, another popular image-creation program. These objects include the space shuttle, a book, a hammer, a lamp, and a computer mouse.

Fancy 3D Fonts, from Access Technologies (marketed by Byte by Byte, Arboretum Plaza II, Suite 150, 9442 Capital of Texas Highway North, Austin, Texas 78759; 512-343-4357; \$79.95), includes three full fonts for *Sculpt 3-D*. The fonts are Bold (emulating Helvetica Bold), Ital (emulating Bookman Italic) and Fanc (emulating Clarendon Medium). The fonts include upper- and lowercase letters, numbers, symbols, and international characters. These fonts are quite nice.

If you've designed objects for one 3-D package (*Sculpt 3-D*, *VideoScape 3-D*, *Forms in Flight*, or *Turbo Silver*, for example), you're probably disappointed to find that they can't be used by any of the other packages. *InterChange*, from Synthesis, is the answer. The basic package converts objects between *Sculpt 3-D* and *VideoScape 3-D*. Modules for *Forms in Flight* and *Turbo Silver* are sold separately. *InterChange* costs \$49.95. The *Forms in Flight* and *Turbo Silver* modules are \$19.95 each.

InterFont, also from Synthesis, is a 3-D font designer that works with *InterChange*. You can design your own fonts or make 3-D fonts from standard Amiga fonts. If you already have *InterChange*, you can buy *InterFont* for \$79.95; or, you can buy *InterFont* and *InterChange* together for \$119.95.

Look It Up

The Workbench and the Command Line Interface (CLI) are very different. When you use the Workbench, you don't need to remember the names of commands or files. For most tasks, the Workbench is much easier to use than the CLI. But some tasks are difficult or impossible from the Workbench. For instance, you

From Origin, source of the classic,
award-winning Ultima™ series, comes

AUTODUEL

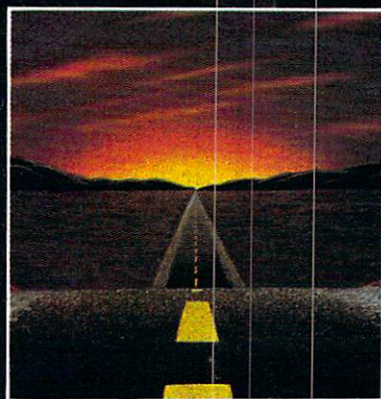
A futuristic, fast-paced strategy role-playing game by Lord British and Chuckles. Based on the award-winning Car Wars® board game by Steve Jackson.

Drive the freeways of the future where the right of way goes to the biggest gun. Somewhere within the 16 cities and outlaw-infested highways are the clues you will need to complete the ultimate mission.

Step into the arena on Amateur Night and earn the right to custom-build your combat vehicles.

The AADA will offer you courier missions. The FBI and the underworld will vie for favors. But watch out! To survive you'll need road experience, the ability to decipher clues, gambling skills, money, a super car—even a clone.

The final gauntlet will test your tactical skills and hair trigger reactions to the limit. But with triumph comes honor, and entry into the elite circle of AutoDuellists. The challenge of AutoDuel® awaits you. Are you ready?



ORIGIN™

136-B HARVEY ROAD, LONDONDERRY, NH 03053 (603) 644-3360



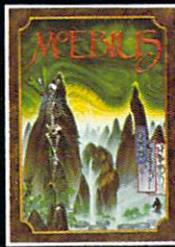
Ultima® V

The latest in the award-winning Ultima saga. **\$59.95***



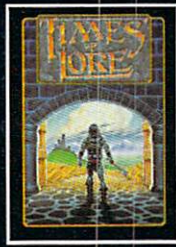
Ultima® IV

The first part of the Avatar's fantastic tale. **\$59.95***



Moebius™

Exotic fantasy featuring 3-D martial arts combat. **\$39.95***



Times of Lore™

A unique blend of role-playing and arcade action. **\$39.95***

Available for: IBM-PC / Tandy / compatibles, Apple II Series, Commodore 64/128, Amiga, Atari-ST and Macintosh. To get your copy of these games, (1) visit your local retailer, (2) call 1-800-999-4939 8am to 5pm EST to order by VISA/MC, or (3) mail check (U.S. \$) or VISA/MC #, cardholder name and exp. date to ORIGIN 136-B Harvey Road, Londonderry, NH 03053. *Add \$2.50 shipping and handling to above prices. Allow 1-2 weeks for delivery.

COMPUTE! specific

can't even see files on a disk unless they have accompanying *info* files.

The CLI can be intimidating. Since most people use only the most common CLI commands (*dir*, *list*, *copy*, *cd*, *delete*), they usually have to look up the rarely used ones in a manual.

The Computer Club Company (4131 Meadow Hill Lane, Fairfax, Virginia 22033-3113; 703-968-7588) sells a reference card that makes it easy to look up a CLI command. Only eight pages long (at 3 x 8 inches), it won't let you get lost among the commands. The commands are in alphabetical order, with all the options for each one clearly spelled out.

Aside from the commands, the *AmigaDOS CLI Reference Book* also lists the AmigaDOS standard devices and assignments and the commands for the Amiga editor ED. Considering the small size of the booklet, it's not exactly a bargain at \$3.95. But it could prove to be well worth the money if you find yourself reaching for CLI manuals more than you like. The current version covers AmigaDOS 1.2. I hope a 1.3 reference card will be released when AmigaDOS 1.3 itself appears.

The Computer Club Company has also announced reference books for the BASIC and C programming languages and the *TextCraft+* word processor. An Amiga hardware reference book is also in the works. Prices for these products have yet to be announced.

Dynamic Duo

It's not surprising that *Starglider II* is available for both the Atari ST and the Amiga. What is amazing is that the same disk boots on either computer. That's just one of the achievements of Jez San and his fellow programmers.

Starglider II (Rainbird, distributed by Mediagenic, 3885 Bohannon Drive, Menlo Park, California 94025; 415-329-0500; \$44.95) is a sequel to the popular game *Starglider*. Players were amazed by the original game's graphics—you really feel like you're flying

through three-dimensional space. *Starglider* uses wireframe graphics. Amazingly, *Starglider II* achieves the same speed and realism with solid graphics.

In *Starglider*, you battle enemies on the surface of a planet. *Starglider II* also starts out on a planet, but your ship can fly into the tunnels below the planet's surface or soar into outer space, as well.

The *Starglider II* package includes the dual-format disk, a play guide, a key guide, a novella (needed for the copy-protection), and an audio cassette with the music from the game.

Starglider II is what you want it to be. If you just want to mindlessly blow things up, you can. But the game is deep. How to refuel? What's on the other planets? Just what is the goal here? You'll probably eventually figure out what's going on.

The three-dimensional instrumentation inside the cockpit is impressive, and the sound and graphics will turn the heads of even the most jaded arcade fans. *Starglider II* is a keeper.

Solitaire Royale (\$29.95) is another excellent game for the Amiga, but it's much different. It's not an action game, so it doesn't depend on the Amiga's animation strengths, but the graphics are nice and the games are addictive.

If you're going to sell solitaire card games to demanding computer owners, you had better do everything right. Spectrum HoloByte (2061 Challenger Drive, Alameda, California 94501; 415-522-3584) has done just that. The cards are nicely drawn. You use the mouse to select cards (there's even an option that allows you to drag them around). You can change the background color, choose between ten different decks of cards, and make the pointer into a left hand (to keep from discriminating against lefties). Best of all, *Solitaire Royale* saves your preferences to disk so they'll come up the next time you boot.

The instructions for the game are on disk and in the manual. There are lots of games to choose from and many ways to cheat. All in all, a very good game.

Calling Out

COMPUTE! Publications is looking for high-quality Amiga programs, artwork, and video demos. If you're a programmer, send us your games, home applications, utilities, and educational programs. You can write the program in the language of your choice (C, Modula-2, assembly, BASIC, and so on). But note that the executable object code of the program must be legally usable by someone who doesn't own a copy of the language. Also, we must be able to legally distribute the runtime package without becoming entangled in licensing fees. The exception to this rule is Amiga Basic programs, since we can assume that all Amiga owners have a copy of that language.

If you're artistically inclined, send us your samples of Amiga artwork (any video mode, but be sure that the picture is saved in the IFF format used by most paint programs) and animation (we must be able to freely redistribute the player program for your animation).

COMPUTE! pays competitive prices for good work. Send your submission to

Submissions Reviewer
COMPUTE! Publications
P.O. Box 5406
Greensboro, NC 27403

— Rhett Anderson

the way home. There's so much to round up about the show that we'll dispense with the review and tips this month.

Besides, Claris didn't send the review copy of *MacDraw II* yet, which was scheduled for this month's column.

Boston (Yawn) Expo

Maybe I'm jaded, but this show was almost boring. It was held in two different buildings (three, if you count the Wang Center, where various keynote addresses were made), and Mitch Hall Associates, which runs the show, did a wonderful job of providing reliable, air-conditioned shuttle buses between the two main buildings. Both halls were less crowded than the sardinelike nightmare of last year's Boston show. But the expo just wasn't exciting.

Maybe because there was nothing really new and exciting to see. Maybe because some of the really nifty stuff isn't available; it's just being shown. Take word processors, for instance: T/Maker, Microsoft, and Paragon all showed their new, or updated, word processors, none of which were being shipped.

So, OK, the expo wasn't exciting. But it was good, and many good hardware and software products were announced, shown, and even for sale.

What Was There

Apple announced its scanner, cleverly named the Apple Scanner. It's a 300 dots-per-inch, 16-gray-scale flatbed scanner that was supposed to be available a year ago. The Apple Scanner, which can handle items up to 8½ x 14 inches in size, is accompanied by two software packages: *AppleScan* and *HyperScan*. The first is general-purpose scanning software; *HyperScan* lets you control the scanner and import images directly into *HyperCard* stacks.

The LaserWriter hasn't always been the only laser print-

MAC

I'm writing this column fresh from the Boston Expo—except for the detour to Cape Cod on

"... a remarkable piece of simulation software."

(PC Week, December 1987)



GUNSHIP™

GUNSHIP simulates the U.S. Army's AH-64A Apache attack helicopter — a devastating, high-speed, tree-skimming, armored warrior. It's the most sophisticated chopper on today's electronic battlefield.

And MicroProse makes it real!

But don't just take our word for it. Ask around — it won't be hard to find one of our 300,000 enthusiastic GUNSHIP pilots. Do some research — GUNSHIP is receiving rave reviews in the computer press. Here's a head start!

"... magnificent and entertaining game ..."

(Computer Shopper, March 1988)

"... setting new standards for all the helicopter simulations ..."

(COMPUTE!'S PC Magazine, May 1988)

"... Gunship is a pulse-pounding experience ..."

(Family Computing, June 1987)

For IBM-PC/XT/AT/PS2/TANDY/compatibles, C-64 and Atari ST. PC version supports EGA, CGA and Hercules graphics.

Can't find GUNSHIP? Call (301) 771-1151, weekdays 8am to 5pm EST and order by MC/VISA; or mail check/money order for \$54.95 for IBM-PC/Tandy (specify disk size) and Atari ST versions, \$39.95 for C-64 version. U.S. funds only. MD residents add 5% sales tax. Free shipping in U.S.; \$5.00 international. Allow 1-3 weeks for U.S. delivery.



MICRO PROSE™
SIMULATION • SOFTWARE

180 Laketront Drive, Hunt Valley, MD 21030 (301) 771-1151

er around, but it was, until recently, the only choice for Macintosh PostScript laser output. Qume and Jasmine are offering alternatives. Actually, through the complexities of the business and manufacturing world, both companies are offering the same printer. The machine has one megabyte of ROM and three of RAM, and it can print a 300 dots-per-inch page faster than the Laser-Writer NT can. Reports say the printer will ship by the end of October 1988 at a price well below \$4,000.

Desktop computing. Desktop publishing. Desktop presentations. And now, desktop embroidery. Don't bother to go back and read that again—you had it right the first time.

Developed by two Japanese firms, this hardware/software combination lets you design original images or import bitmapped images. You specify the colors for the various parts of the image and, voilà!—a multicolor embroidered image. You change the thread colors manually.

We're not talking cross-stitch here, either. We're talking close-stitched sewing for patches and appliques. The system is called P.O.E.M., for Personal and Original Embroidery Machine. The booth attendants seemed to know only two English phrases: "Software included" and "One thousand dollars." Luckily, these meshed nicely with the only two Japanese phrases I know: "Yes" and "Thank you."

My favorite new hardware product at the show, however, was Magnum Software's TeleFlex. It received FCC approval only a few days before the show, so there was no booth or official presentation, but the product was available for viewing if you searched for it.

TeleFlex (about \$2,500) is a hardware/software combo that lets your Macintosh interact with someone by phone. (You've done this before: you get a voice that says "For help on this product, press 1; for customer support, press 2. . .") The hardware has a Macintosh-sized footprint, and the software is a visual, icon-based programming tool that

is so easy to use it shouldn't be called programming. You can telemarket, take product orders (updating your inventory database accordingly), and perform any other task a computer and a telephone can do together.

For all those electronic typesetters out there, Letraset has a terrific new program that manipulates fonts: *LetraStudio*. You can take any of Letraset's outline fonts and pour text into a predefined "envelope" to stretch, twist, or otherwise pleasantly distort the letters. You can also define your own envelopes or tweak the ones provided. It's terrific for logos and headlines. The \$495 price tag may sound high for a program that can be described in only a few sentences, but it's worth the price. Check it out.

In the midst of the memory shortage and high prices, Apple has introduced a new Mac II configuration: the 4/40. That's 4 megabytes of memory and a 40-megabyte hard drive. Makes sense to me.

Amusingly enough, Apple didn't announce its SE 2/40 (2 megabytes of RAM and a 40-megabyte drive), but the company did ship a few by mistake and included the machine on the latest developer's price list.

Quotes from the Show

My least favorite quotation from a famous person during the show: Jean-Louis Gassé, Apple's talkative showman, said of *HyperCard*, "Real people use it. Real men write XCMDs." Hmm. What do real women do with it?

My favorite quotation from a famous person—Bill Gates, Microsoft's father: ". . . [my Mac II, with] six megs of memory." Well, there's a memory shortage, to be sure, and I guess Bill wanted to show off. But the Mac II doesn't handle six megabytes of memory, so it's an obvious case of one-upmanship: *Everybody else thinks having five megabytes is great; I'll say I have six.*

— Sharon Zardetto Aker

ATARI ST

Many public domain and shareware disks are available for ST users. Public domain disks are collections of programs that are made freely available by the author. These programs aren't sold, but are given away. Generally, that means a small fee is requested for the disk, duplication, and mailing. A disk full of public domain programs usually sells for between \$3.00 and \$5.00.

Some public domain software is pretty good, and some isn't. Still, you usually can get something worthwhile on each disk, so public domain software remains a good deal.

Shareware is different. These programs are *not* free. Instead, you take a copy of the program (which generally includes some minimal documentation) and try it out. If you like it and use it, then you are supposed to send the author some money. In return, you usually get a full manual, notification of updates, and other support. The concept of shareware has worked pretty well in the IBM PC and compatible world.

Three companies are making public domain and shareware disks available to ST users. Brad Roltgen Enterprises (6210 North First Street, Suite 130, Fresno, California 93710; 800-622-7942) has 400 disks available. Write for a free catalog. One of his best programs is on BRE #400—it's a disk-labeling program that prints the contents of a 3½-inch disk on a stick-on label. BRE disks are \$4.00 each.

King's Domain (P.O. Box 609-D, Grodon, California 95444) has about 300 disks. You can get a catalog by send-

ing a self-addressed, stamped envelope. The price for a single disk is \$5.00, but special groups of disks (games, graphics, and so on) are available for much less per disk.

Finally, there is Accusoft (P.O. Box 02214, Columbus, Ohio 43202), which offers 300 disks. A disk featuring its current catalog costs \$3.00—further disks cost \$2.95.

All three companies' catalogs contain considerable overlap (most programs can be purchased from any of the three), but they're arranged differently.

Seeing Things

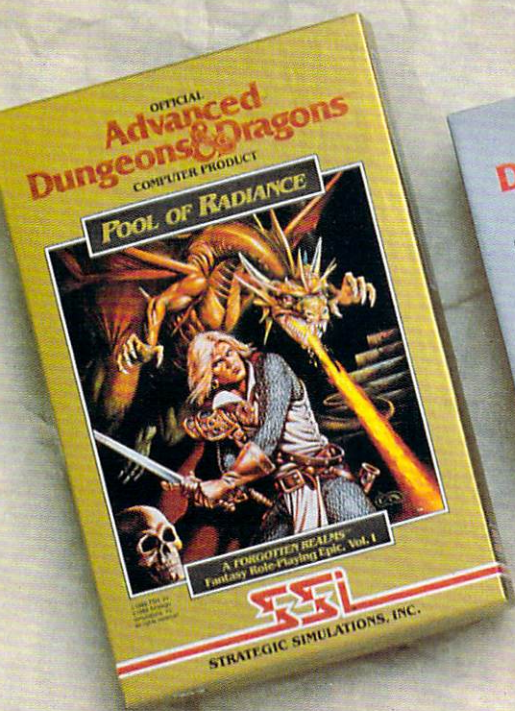
Migraph (720 South 333rd, Federal Way, Washington 98003; 206-838-4677) has released another support package for its *Easy Draw* page-layout program. *SCANART* (\$39.95) is a collection of more than 100 highly detailed images scanned at 150 dots per inch and touched up by a professional artist. Stored in GEM format, they can be used not only with *Easy Draw* but in any desktop publishing package that supports GEM files, such as *Publishing Partner Professional* and *Publisher ST*. The images include animal, party, holiday, school, office, transportation, and sports pictures. One section even includes some very well rendered bears.

Last month we looked at the Seymour-Radix digitizer, which mounts on the printhead of your printer. Its most serious problem was that it was virtually impossible to affix it to the printhead. A competing device from E. Arthur Brown is called ST Pictascan (3404 Pawnee Drive, Alexandria, Minnesota 56308; 612-762-8847; \$149.95). This sizable unit comes with two different types of clamps for mounting to the printhead.

Besides the clamps, ST Pictascan comes with a block of lucite that you can epoxy to the printhead. You can then attach the clamp to the lucite. Rock-steady mounting of the digitizing head was easily done with several Epson printers,

Advanced Dungeons & Dragons®

COMPUTER PRODUCTS



Role-Playing

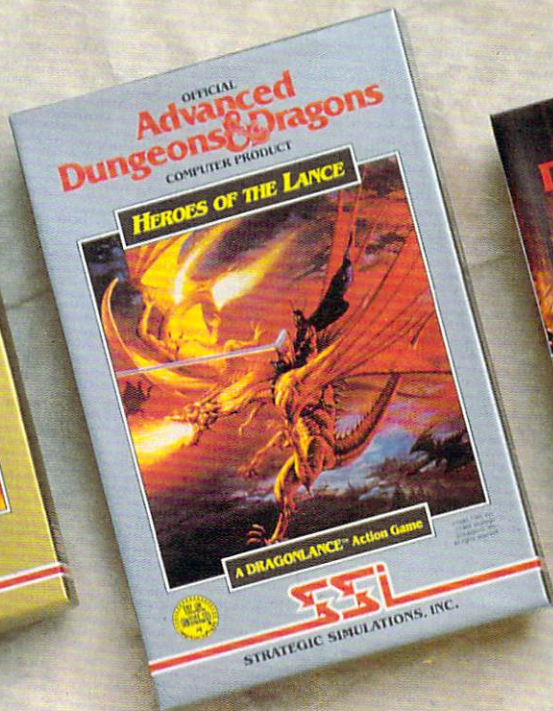
POOL OF RADIANCE fulfills all your gaming fantasies. The legendary **ADVANCED DUNGEONS & DRAGONS®** role-playing system springs to life on your computer! Embark on dangerous quests in the magical **FORGOTTEN REALMS™** game world — made incredibly real by advanced computer animation and combat that adheres strictly to **AD&D®** game standards. Prepare

yourself for the ultimate fantasy role-playing experience!

**IBM
APPLE
C-64/128**



ADVANCED DUNGEONS & DRAGONS, AD&D, FORGOTTEN REALMS and DRAGONLANCE are trademarks owned by and used under license from TSR, Inc.
©1988 TSR, Inc. ©1988 Strategic Simulations, Inc. All rights reserved.

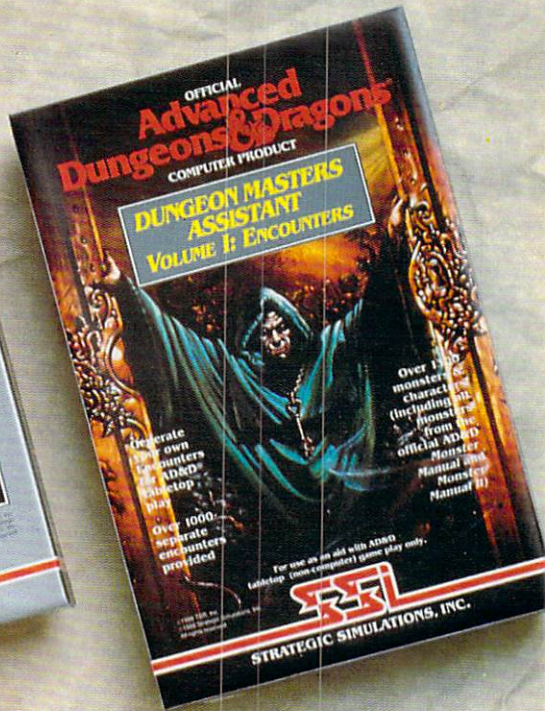
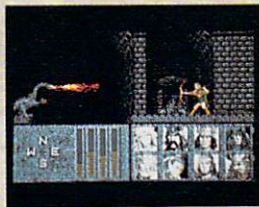


Action

HEROES OF THE LANCE gives you non-stop excitement and fully animated action on the mystical **DRAGONLANCE®** game world. Guide eight Companions, each with different skills, deep into the treacherous ruins of the temple Xak Tsaroth. They will need all of your skills to help them survive the attacks of giant spiders, demons, dragons and countless other terrors. Retrieve the

precious Disks of Mishakal if you can!

**IBM
C-64/128
AMIGA
ATARI ST**



Utility

DUNGEON MASTERS ASSISTANT, VOLUME I: ENCOUNTERS is a utility program designed to help Dungeon Masters generate encounters for **AD&D®** campaigns. It provides more than 1000 encounters, and over 1300 monsters and characters, including all of the monsters found in **AD&D® Monster Manuals I & II**. DMs can modify the existing data and add original

monsters and encounters to the database.

**IBM
APPLE
C-64/128**



How To Order: Visit your retailer or call 1-800-245-4525. To receive SSI's complete product catalog, please send \$1.00 to: Strategic Simulations, Inc., 1046 N. Rengstorff Avenue, Mountain View, CA 94043.



STRATEGIC SIMULATIONS, INC.

COMPUTE! specific

and a Star SG-10 and NX-10.

The ST Pictascan is a little more complex than the Seymour-Radix device. You must set the scanning rates, number of samples, and other technical parameters, but most printers work just fine with the configurations supplied on the disk. Once you have scanned an image, you can store it as raw data, view or save portions of it in *DEGAS* format, enlarge it, squash it, and ignore portions of the original data.

If you are using a monochrome monitor, you can set the brightness level at a threshold above which a color in the original is shown as black. This makes a considerable difference in how the final result looks. The digitizer itself has an on/off switch and must be positioned to touch the paper as it moves through the printer. On some printers, the digitizer will interfere with the paper bail (the movable bar

that holds the paper against the platen). Since most printers don't do a good job of feeding paper in friction feed, ST Pictascan's maker suggests you attach the item that you want to scan to tractor-feed paper.

ST Pictascan connects to the joystick port and draws its power from the ST. The image controls are on a separate screen, with fields for setting the portions of the picture you want to look at and the portions of the monitor you want it drawn on. The program isn't interactive—you must adjust parameters on one screen and then switch to the other screen to redraw the image.

The disk is heavily copy-protected and must be the boot disk. This makes little sense, since without the hardware the disk is useless!

Practical Solutions (1930 East Grant Road, Tucson, Arizona 85719; 602-884-9612) strikes again. With VIDEO

KEY (\$119.95), anything you can display on your RGB monitor can be put onto a TV screen or VCR, even if your ST doesn't have an RF modulator. This is especially useful with long-running animations created with Antic's *CYBER Series*. If you record your animation on tape, it isn't necessary to set up a complete ST system to show the animation. Many conference rooms are equipped with VCRs, so you don't have to bring extra equipment when making an animated presentation.

To use the VIDEO KEY, plug it into the monitor port and connect the AC adapter. It automatically turns on if the ST is in color mode. The RGB monitor plugs into a pass-through monitor port on the VIDEO KEY, which has three additional outputs. One is for direct connection to the antenna leads for a TV or VCR, which you can select as chan-

nel 2 or 3. The other connection is for direct video input to a monitor or VCR. Many of the newer VCRs have a direct video input, which produces higher resolution pictures than the standard antenna leads. The last connection is an RCA jack for separate audio output.

VIDEO KEY simply splits the video signals, so you can record the color output on the VCR or watch it on TV while it's visible on your monitor. In fact, VIDEO KEY gives the best result when an RGB monitor is connected to it, because certain colors may be too bright on the TV. If that is the case, you can get a special plug from Practical Solutions. VIDEO KEY works well only in low resolution (16 colors). This shouldn't be a problem, however, because neither a TV nor a VCR has the resolution necessary to distinguish text in medium resolution.

— David Plotkin □

PURE-STAT FOOTBALL

The authors of *Pure-Stat Baseball* and *Pure-Stat College Basketball* introduce their most precise simulation to date, **PURE-STAT FOOTBALL!** This third generation football game has a wide array of innovative features that include: Computer Coaching using artificial intelligence to select offensive/defensive plays, Vertical and Horizontal Scrolling of on-field action, a built-in Stat Compiler, and much more. **PURE-STAT FOOTBALL** will challenge even the most avid fan!

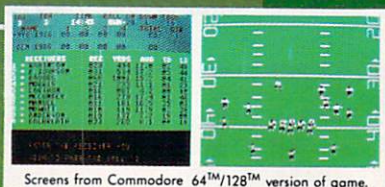
- For zero, one, or two players
- Statistically based program where Pro-Football players and teams perform as they did in real life
- Built-in Stat Compiler that includes League Standings
- Full screen graphics with 22 animated players (No X's and O's)
- Eight types of runs, 12 types of passes
 - Draw Plays, Reverses, Screen Passes
 - Blitz Linebackers, Double Team Receivers
 - Zone Defense, Prevent Defense
 - Use Four Receivers, Insert a Fifth Defensive Back
- Optional Team and Create Team Disks Available

Suggested retail price \$39.95

See your local dealer, or contact:

S Software
Simulations

959 Main Street, Suite 204, Stratford, CT 06497
(203) 377-4339



Screens from Commodore 64™/128™ version of game.

Here's What People Are Saying about EIGHT-IN-ONE™ . . .

"... a really powerful product... as good as \$300 to \$500... products."

— *Soft • letter*

"It's hard to suppress this reviewer's combination of admiration for [Eight-In-One] and bewilderment over how the company can offer so much for \$59.95."

— *PC Clones*

"... works as promised."

— *PC Week*

"... the only computer program they (users) will ever need..."

— *NY Times*

"****... the best integrated package I've ever seen..."

— *Home Office Computing*

"... very easy to learn and use... quite intuitive."

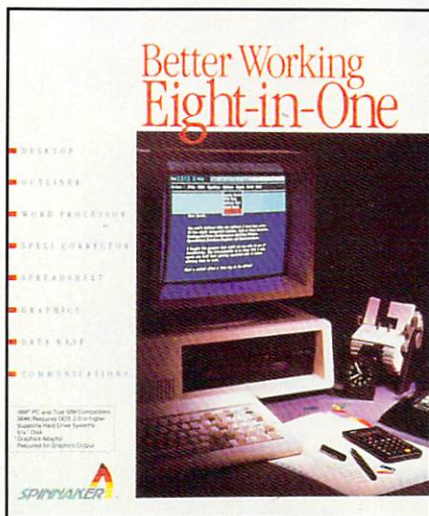
— *PC Week*

"PFS: First Choice and Microsoft Works, move over! BetterWorking Eight-In-One may turn out to be the low-cost integrated sleeper of the year."

— *PC Magazine*

"... this inviting and productive package would be a terrific bargain at twice the price..."

— *Washington Post*



BetterWorking Eight-In-One comes complete with every productivity tool you could ever need. It's a desktop organizer, outliner, word processor, spelling corrector, spreadsheet, graphics program, data base and communications package all rolled into one. Plus, Eight-In-One is integrated, allowing you to pass work smoothly among all eight applications. The reviews are in... isn't it time you looked at BetterWorking's Eight-In-One?

Price: \$59.95

- IBM® PC and True IBM Compatibles
- Requires: 384K/DOS 2.1 or higher
- Supports hard drive systems
- Graphics adaptor required for graphics output

Available at fine software dealers,
Or: For orders only call 1-800-826-0706

SPINNAKER

©1988, Spinnaker Software Corp., One Kendall Square, Cambridge, MA. 02139
All rights reserved. Spinnaker is a registered trademark of Spinnaker Software Corp.



GET READY FOR A FA

The third in our exciting series of rough, tough and gritty Street Sports™ games.

INTRODUCING STREET SPORTS™ SOCCER.

Time to dust off every dirty trick you know. Shove. Pass. Dribble. Trip. Break all the rules for kicks.

Pick a team from a rakish roster of nine neighborhood kids who are anything but neighborly. They'll do anything to win. Forget fairness. This ain't croquet.

Play on a grassy, but slippery park.



STREET SPORTS SOCCER

Or take your licks on a rough city street.

To score a goal, you'll need to pass, slice, hook, head (not to mention a timely trip or two), just to

stay one step ahead of your opponents.

Street Sports Soccer. Band-Aids and knee pads not included.

BASEBALL HAS BEEN VERY, VERY GOOD TO US.

Street Sports™ Baseball is back. With makeshift diamonds. Bases

made from tires. Trash cans to avoid.

You pick the place. The players. The positions. The strategy. And then, you'll be right in the middle of it all. With a split-screen view from above and up close.

Street Sports Baseball. It's the best seat in the house. Your house.



STREET SPORTS BASKETBALL

SO HAS BASKETBALL. It's back, too. The same dingy alleys.



CE FULL OF ASPHALT.

Scruffy playgrounds. Dark parking lots.

You'll pick three-on-a-side from the neighborhood's ten toughest players.



STREET SPORTS BASEBALL

Hot shooters. Slow dribblers. They're all here. The one with the great hook. The one who shoves underneath. The

one who tugs at jerseys.

Pass to the big man inside. Hit the guard coming across. Screen the lanky forward. Bounce the ball off the chainlink fence. But watch out for the oil slick. In *Street Sports™ Basketball*, anything can happen. And often does.

Street Sports Soccer. Street Sports Basketball. Street Sports Baseball.

Take a walk on the wild side.

LOOK FOR NEW STREET SPORTS™ FOOTBALL.

STREET SPORTS SERIES

BY **EPYX**

Commodore 64/128, Apple II & compatibles, IBM & compatibles, Amiga



Play a Portable Computer Made Just for Music, Hone Home Videos with Two Great Programs, Pop Up Work on Your PC, and Amuse Yourself on the Amiga

Yamaha C1 Music Computer

When the folks at Yamaha say "music computer," they aren't just giving you the old song and dance. The Yamaha C1 Music Computer is definitely *not* just another IBM PC compatible. And just to make sure you don't confuse the C1 with other personal computers, Yamaha has built in 11 MIDI ports, not to mention a pile of other features designed for the modern musician. The C1 is a powerful machine, with many ways to help you get your job done fast—whether it be producing a musical score or a budget worksheet.

Weighing in at less than 19 pounds, the C1 laptop computer uses a high-density backlit display screen. The normal display colors are blue on a white background, a combination that looks very sharp if you are directly in front of the screen. When I tested the C1 under normal working conditions in my studio, I found that the farther I moved to the side of the screen, the poorer the contrast became. I eventually reached the point at which the screen was entirely blue. This means you should set the C1 either above or behind your primary MIDI keyboard for best viewing.

The C1's manageable weight and carrying case make it easy to transport the C1 to and from jobs. When you're ready to pack it up, all you have to do is close and latch the screen, which covers and protects the keyboard, and remove any attached cables. The built-in ni-cad battery preserves the accuracy of the C1's realtime clock and system settings when the power is off.

At the heart of the C1 are one megabyte of memory and an 80286 microprocessor capable of running at a speed of 10 MHz. To give you an idea of what that means, 10 MHz is fast enough to make a DOS directory listing look like a blue smear on the screen. But the speed is very beneficial to managing all of the C1's MIDI ports.

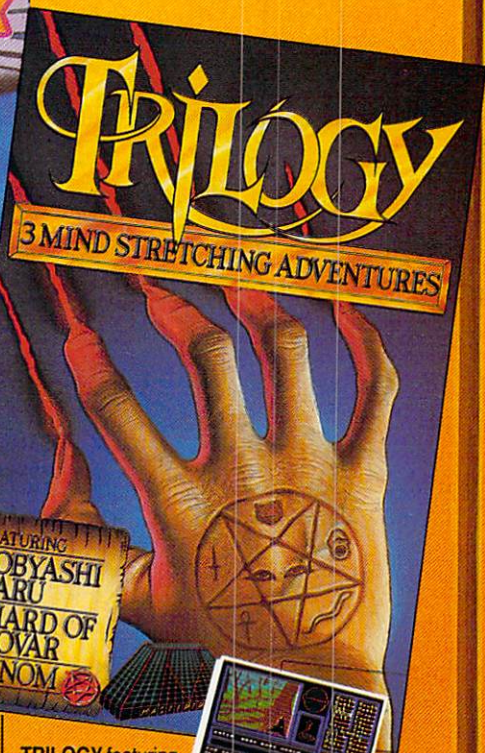
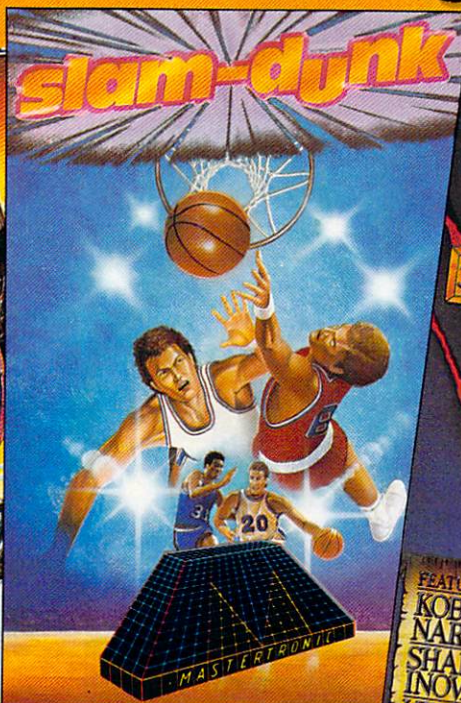
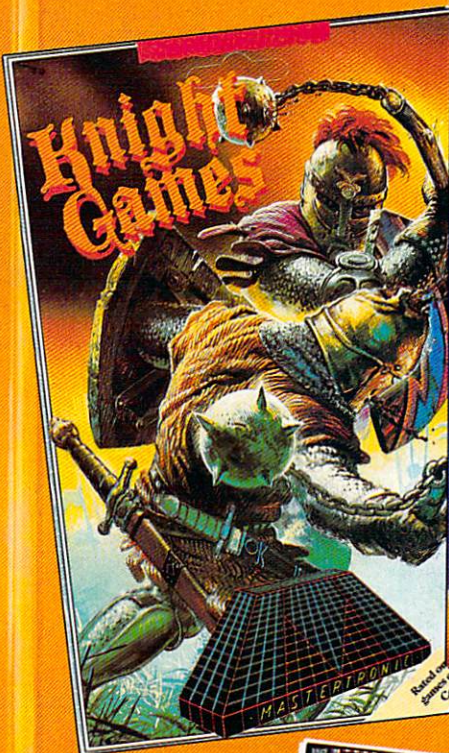
The C1 comes in two disk drive configurations, called the C1 (\$2,995) and the C1/20 (\$3,995). The standard C1 includes two 3½-inch 720K floppy drives built into the right side of the unit, one on top of the other. The C1/20 has one 3½-inch 720K floppy drive and a 20-megabyte hard disk. The unit I reviewed was a prototype of the C1/20; the hard disk really makes the C1 a powerful machine. Without having to constantly flip floppies, I was able to jump quickly back and forth between features that include a word processor, a spreadsheet, two different sequencers, several patch librarians and MIDI utilities, and Microsoft Windows. The \$1,000 price difference might seem steep at first, but the time and frustration it can save you may make it worthwhile—especially if you have a lot of work to do.



The Yamaha C1 Music Computer orchestrates 11 MIDI ports and a megabyte of memory.

On the back of the C1, you'll find input and output ports galore. There are two MIDI Inputs, one MIDI Thru, and eight MIDI Outputs. Assuming the software developers can get them all working well together, there are enough ports to hook up a decent-sized MIDI orchestra of instruments. For synchronizing the C1 to video and audio recorders, Yamaha has also wisely included input and output jacks for SYMPTE (Society of Motion Picture Technicians and Engineers) Time Code, which is normally an extra ex-

The GOLD Collection



KNIGHT GAMES

All the atmosphere of Medieval England brought vividly to life in this superbly animated multi-level action game that contains 8 different Medieval events.

Battle against other Knights using swords, axes, staffs, ball and chain or test your skills with crossbows and longbows.

Features include:

- One on One combat mode (2 player)
- One player versus the computer (1 player)

Available for:
C64/128
(joystick required)
\$9.99

or IBM PC/Tandy and compatibles (CGA or EGA card and color monitor required), \$14.99



SLAM DUNK

A high energy simulation of "Two on Two" basketball that feels like the real thing. Slam-dunks, lay ups, ally oops and stat features, great sounds and animated graphics generate exciting and addictive gameplay. Available for C64/128 (joystick required) \$9.99 Available for IBM PC and compatibles fall '88



TRILOGY featuring

Venom - Shard of Inovar - Kobyashi Naru

3 different lands 3 different adventures 3 different challenges



All the three graphic-text adventures featured in TRILOGY combine super graphics and

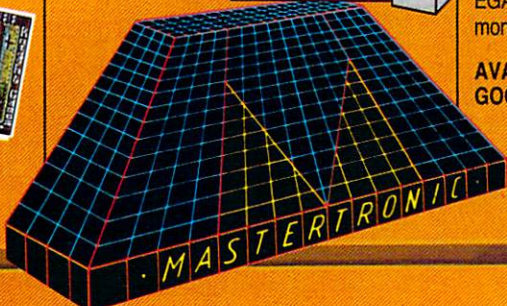
text into a challenge guaranteed to stretch your mind.

Available for:
Commodore 64/128
\$14.99

or IBM PC/Tandy and compatibles (CGA or EGA card and color monitor required) \$14.99

AVAILABLE FROM MOST
GOOD SOFTWARE STORES
OR CALL:

MASTERTRONIC INTERNATIONAL INC.
711 WEST 17th ST., UNIT G9,
COSTA MESA, CA 92627.
TEL. (714) 631-1001



Commodore is a trademark of Commodore Business Machines Inc.
IBM is a trademark of IBM Corporation.
Tandy is a trademark of The Tandy Corporation.

pense. In addition, the C1 has ports for an external monitor (CGA or Hercules-compatible), a Centronics-type printer port, two RS-232C ports for attaching a serial mouse or modem, and a Toshiba-style expansion port for an optional card, such as one for extended memory. All the ports are clearly labeled, well placed, and easy to reach.

The keyboard on the C1 is in a modified AT style, with a few changes that take getting used to (like the cursor keys in front of the number keys). After typing on it for a few minutes, I found

the C1's keyboard to be firm to the touch, with a nice, responsive action. Some of the keys, in addition to having letters printed on them, have musical notes and symbols silkscreened on them. These symbols correspond to a built-in musical font in ROM, which could create a kind of de facto standard for software manufacturers developing desktop music-publishing programs on the C1, at least as far as the use of the C1's keys is concerned.

Besides keys, Yamaha has included two general-purpose sliders on the

left side of the keyboard (next to the Tab and Ctrl keys). Their functions are determined by the software in use, but generally the sliders are used for changing certain parameters faster than you can change them using the keyboard.

The software packaged with the C1 includes MS-DOS and two MIDI utility programs, called *MIDI Monitor* and *Bulk Manager*. *MIDI Monitor* is useful for troubleshooting and exploring your MIDI setup. You can monitor incoming MIDI data, transmit MIDI data from the keyboard and control sliders, and route data through the MIDI input and output ports. I found it particularly interesting to watch the stream of MIDI data displayed as I played a synthesizer connected to the C1.

Bulk Manager lets you store any type of MIDI bulk data on a C1 disk. Bulk data refers to all musical voice data, rhythm-pattern data, and so on, that you might use in a song. The program will let you easily transfer memory data from one MIDI device to another.

The C1's 73-page documentation manual is fairly easy to understand. It diagrams and explains the external features of the C1 clearly and devotes almost 20 pages to explaining the basics of MS-DOS. Trying to teach the fundamentals of MS-DOS in 20 pages is like summarizing the Old Testament in 1000 words or less. I highly recommend you get one of the many good books available on MS-DOS as a necessary supplement. The sections on *MIDI Monitor* and *Bulk Manager* would be better as well if they included more practical examples and applications.

The Yamaha C1 Music Computer is a powerful machine just waiting for the chance to go to work. As more software becomes available (a few dozen software companies are readying C1 programs), it will become apparent just how useful and popular it can be. In the meantime, I was very impressed by its speed, modularity, and design. I can definitely envision the day when I replace my rickety XT clone with a C1/20 rocket.

—Joey Latimer

The Epyx 500XJ™ is no ordinary joystick.

It's a lethal weapon.

The 500XJ scores way higher, faster and easier than any other joystick ever made. Which isn't too surprising, considering what cool stuff it has.

Like a grip that fits in the palm of your hand for radical control. Super fast trigger finger firing for deadly timing. Quick-thrust stick movement for doing it to 'em. And a great warranty you'll probably never need.

With a joystick that scores this high, this easy, there ought to be a law. Aren't you glad there isn't?

**The 500XJ.
Guaranteed to
blow 'em away.**

**WARNING:
MAY BE FATAL
TO YOUR
COMPETITION.**



Yamaha C1 Music Computer

For . . .
Model C1—\$2,995
Model C1/20—\$3,995

From . . .
Yamaha Corporation of America
6600 Orangethorpe Ave.
Buena Park, CA 90620
(714) 522-9011

ENCOUNTER HIGH SPEED ACTION IN AN INTELLIGENT GAME OF TACTICAL WARFARE.

THE TIME: The 22nd Century.
THE PLACE: 64 islands in the Southern Ocean.

THE PROBLEM: A worldwide energy crisis.

THE MISSION: Gain control of the islands, set up centers to mine, recycle and produce materials to form a large network of power plants.

JUST ONE MORE PROBLEM: Enemy terrorists are destroying the islands. . . one by one.

CARRIER

COMMAND

FAST-PACED ARCADE ACTION:

You are in control of up to 4 aircraft and 4 amphibious vehicles simultaneously. Capture enemy islands and destroy its forces.

STRATEGIC TACTICAL WARFARE:

Conduct war maneuvers in a huge territory that includes over 60 islands. Protect your ship with defense drones and 360-degree turret mounted laser cannon with telephoto tracking.

SENSATIONAL GRAPHICS:

Three-dimensional solid filled graphics, smooth scrolling, fabulous sound and special effects.

ADDICTIVE, HOURS OF PLAY:

Your choice of action game or strategy game, plus save-game option provides hours and hours of extraordinary adventure!



RAINBIRD

P.O. Box 2227,
Menlo Park, CA 94026,
415/322-0900

HOW TO ORDER: Visit your software dealer today, or call (800) 227-6900 from U.S. or Canada for Visa, MasterCard, Amex or C.O.D. To order by mail, send check/money order: Rainbird, P.O. Box 8123, San Francisco, CA 94128. CA add 6% sales tax and TX add 7.75%. Shipping/handling is \$4.50. 2-3 weeks for delivery.

AVAILABLE: IBM CGA/EGA/VGA \$39.95. Amiga and Atari 512K \$44.95. Macintosh 512K \$49.95. Commodore 64/128 coming soon.
Rainbird and Rainbird logo are trademarks of British Telecommunications plc. Macintosh is a trademark licensed to Apple Computer, Inc. IBM, Commodore and Atari are registered trademarks of International Business Machines Corp., Commodore Electronics Ltd., and Atari Corp., respectively.

Home Video Producer

They don't make home movies like they used to—now they make them with video cameras. Folks are flocking to video equipment stores by droves, and for good reason—why hassle with *Gone With the Wind* when *Gilligan's Island* is such a breeze? Tape is less ex-

pensive than film. You can see your movie as soon as you shoot it. Sound is recorded right along with video. For those reasons and more, today's home movies mean video camcorder.

Quick on the uptake, Epyx has released *Home Video Producer*, a titling program that lets you add crisp, colorful titles, as well as animating effects, to your videos to give them a professional look.

Imagine starting your family's Christmas video with a creeping border of holly, and letters parading by as they spell "A Smith Family Christmas." One of Santa's elves strolls by along the bottom of the screen with a wagon full of gifts before the screen wipes with red, revealing Santa himself. Quite a difference from beginning the video with a lot of white snow on the screen.

Home Video Producer makes it easy for anyone to create good titles. The program incorporates more than 75 different graphics—some cartoon-like, others realistic—ranging from Santa Claus to birthday candles, from football goalposts to waving flags. You'll find an appropriate image for most major holidays and events you're likely to film.

To use the program, first call up the main screen. Four blank frames stretch across the bottom. To create a title, fill in the individual frames in the order you want them to follow. Below each frame are three effects boxes, used to control wipes and scrolling. Across the top of the screen are four tool icons, used to select the contents of individual frames, work with whole strips of frames, work with completed title sequences, and access program tools.

The first frame is for the background. Select the Movie Tools icon and a menu appears. Pick New Title to start. Use the arrow keys to select frame 1 and hit Enter to access the Frame Contents menu. Across the top of the screen appear icons representing the different contents you can select to fill each frame. Content selection includes picking a border and a background, adding text or graphics, and coloring frames. Up to 32 frames are available.

For your first frame, pick a picture-frame border from the eight possible choices. Once picked, the effects boxes under frame 1 are highlighted. Hit Enter and a menu of effects appears for you to pick from, ranging from wiping out from the border to spiraling out from the center. Another effects box lets you choose the speed at which the border will spiral or wipe onto the screen by adjusting an onscreen level meter with the arrow keys. You can then define how long the frame will remain onscreen before the next frame begins.

For your next frame, pick the Text icon from the Frame Contents menu, choose a font from the ten available, and then type in your title. Again you can choose wipe-on effects. You can even scroll your title across the bottom and off the right side of the screen. >

TRACON Air Traffic Control Simulator

A game? Or a reflection of a deadly reality? It looks simple—just keep every blip on your scope apart as you vector them around for approaches and departures. But they keep coming, pushing you to your limits. And you alone must prevent a dreaded crash between airliners loaded with passengers.

In this first ever microcomputer simulation of a Terminal Radar Approach CONTROL facility created by a PhD ATC simulation expert, an FAA R&D manager, and professional controllers, you'll enter the inner sanctum of air traffic control.

Handle traffic on a "real" ATC radar scope. Adjust traffic loads from "no-sweat" midnight levels to a five-o'clock rush. Choose "lousy" pilots or "stormy" weather to test your skill with pilot errors and "go-arounds".

FAA insiders compare **TRACON** with million-dollar ATC trainers. It gives you a realistic traffic mix from Piper Cubs to Boeing 747 "heavies" in any of five control sectors: Los Angeles, San Francisco, Miami, Chicago, and Boston. Yet no experience is necessary; a detailed manual, sample scenarios, and an audio cassette demo tape train you in ATC procedures and jargon.

A game? Hardly. TRACON mirrors a world where decisions determine not revenues or profits, but lives!

To order, call 1-800-634-9808.

Requires IBM PC or compatible with at least 256K, one disk drive, and graphics monitor. Mouse optional. Price of \$49.95 includes program on 5.25" and 3.5" IBM PC diskettes, typeset manual, on-disk samples and an audio cassette tape demonstration scenario. Please add \$5 for shipping and handling; Texas residents add 8% sales tax. We ship the next day via UPS. Unconditional 30-day money-back guarantee; if not completely satisfied, just return it to us for a full refund. Dealer inquiries welcome.

Wesson International
1439 Circle Ridge Dr.
Austin, Texas 78746
(512) 328-0100

Producing intuitive, elegant microcomputer software since 1981

EGA Screen Photograph of TRACON

THE TREASURES OF THE WORLD ARE DISAPPEARING RIGHT FROM UNDER OUR NOSES!
WHO WILL STOP CARMEN AND HER DEVIOUS COHORTS?



Catch Her If You Can!

Nothing is sacred to the notorious Carmen Sandiego. She and her gang have already swiped a warehouse full of treasures, from the Sphinx to the Statue of Liberty's torch. And now you have been assigned to capture them.

Start out at the scene of the crime, questioning witnesses. To help you decipher the clues you uncover, each of these award-winning games includes a reference book filled with maps and information.

As you track the culprits, you'll sharpen your thinking skills. At the same time, you'll learn fascinating things about the geography, history and culture of the places you visit.

Each adventure has a different gang of thieves. So collect all three and have three times the fun!

WHERE IN THE WORLD IS CARMEN SANDIEGO?®
Explore the world's great cities, chasing Carmen's gang. Use Interpol's Crime Computer to get arrest warrants. Includes *The World Almanac*.®

WHERE IN THE U.S.A. IS CARMEN SANDIEGO?®
Carmen and her gang are stealing America's national treasures, and you're on their trail. Includes *Fodor's*® USA travel guide.

WHERE IN EUROPE IS CARMEN SANDIEGO?™
Carmen strikes again! This time, it's the 34 nations of Europe. To help you, you'll have the Rand McNally® *Concise Atlas of Europe* plus an on-screen Fact-finder's Database and Crimestopper's Notebook.

Carmen Sandiego products are available for Apple, Apple IIGs, Macintosh, Commodore, IBM and 100% compatible computers for suggested retail prices of \$34.95 - \$44.95.

THREE WAYS TO BUY: Visit your software dealer or call 800-527-6263, 8AM-5PM PT, for credit card purchases and ordering by mail.

For more information, write to Brøderbund Software-Direct, P.O. Box 12947, San Rafael, CA 94913-2947.

Brøderbund®

© Copyright 1988 Brøderbund Software, Inc. The World Almanac, Fodor's and Rand McNally are registered trademarks of The Newspaper Enterprise Association, Fodor's Travel Publications, Inc. and Rand McNally and Company, respectively.

Announcing COMPUTE!

Preview and sample up to \$200 worth of software and produced by some of the best software



Pirates!

Search and plunder!
Become a 17th century pirate captain searching the Caribbean for ships and cities. From MicroProse. (64/128 & IBM-PC.)

Airborne Ranger

Fast-paced action-simulation!
Danger & excitement of combat and infiltration as a single soldier controllable in 8 directions. From MicroProse. (64/128 only.)

Caveman Ugh-lympics

Hilarious Neanderthals!
Go for the gold in this precursor to modern olympics. From Electronic Arts. (64/128 only.)

Andrew Tobias's Managing Your Money

Organize your finances!
Analyze your personal or small business financial affairs with the help of money expert Andrew Tobias. From Meca. (IBM-PC only.)

Silent Service

Exhilaration & Tension!
New submarine simulation genuinely recreates World War II underwater warfare. From MicroProse. (64/128 & IBM-PC.)

Wealth Insurance

Forecast your financial future!
See how to protect your investments from the financial uncertainties of the 1990s. From Britannica Software. (IBM-PC only.)

Guardians of Infinity

Travel back through time!
Thwart the assassination of President Kennedy to save the world! From Paragon Software. (IBM-PC only.)

Carrier Command

High tech, high speed!
An addictive game of strategic warfare combining wild arcade action and stunning 3-dimensional graphics. From Rainbird. (IBM,PC only.)

Strike Fleet

Hunt down the enemy!
Command a high-tech naval task force. Your treacherous theaters of operation: the Persian Gulf, the Falklands, or the North Atlantic. From Electronic Arts. (64/128 only.)

Gunship

Revolutionary 3-D graphics & outstanding joystick firing system!
Realistically simulates AH-64 Apache helicopter. From MicroProse. (64/128 & IBM-PC.)

John Elway's Quarterback

Ground-pounding excitement!
Faithful computer version of the #1 arcade winner, by the game's premier quarterback, John Elway. From Melbourne House. (64/128 & IBM-PC.)

Experience, view and get a taste of challenging game demos, realistic simulations, a personal finance program (IBM version only), and more. This is your chance to check out hundreds of dollars worth of software programs from a special group of commercial software developers participating in *COMPUTE!'s Demo Disk Pack* promotion.

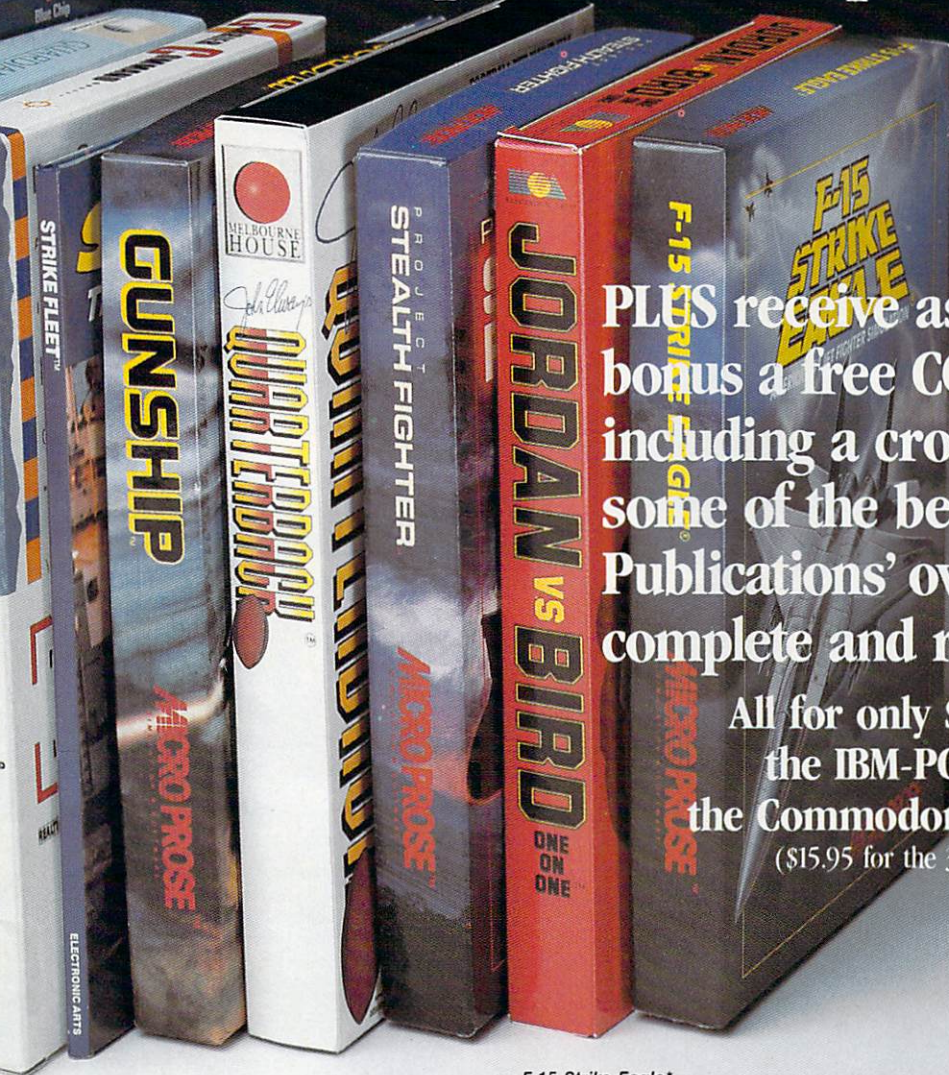
To boot, receive your own complete samples of some of the best COMPUTE! disk programs ever published . . . with our compliments.

We can't think of a better way to help you decide what software to buy. But hurry! This offer expires January 31, 1989. Order your own *Demo Disk Pack* today. And order some for your friends. They make great gifts.

*Each Demo Disk Pack contains 4-6 disks. All MicroProse programs are contained on one disk.

COMPUTE!'s Demo Disk Pack!

the latest commercial software— developed
houses in the personal computer industry...



PLUS receive as a special
bonus a free COMPUTE! sampler
including a cross-section of
some of the best of COMPUTE!
Publications' own disk programs,
complete and ready to run.

All for only \$9.95 for either
the IBM-PC (MS-DOS) or
the Commodore 64/128 formats.
(\$15.95 for the 3½" IBM disk version).

Project Stealth Fighter
Experience the thrill!
Pilot a state-of-the-art U.S. Air
Force COSAIR (covert, sur-
vivable, in-weather, recon)
strike fighter. From MicroProse.
(64/128 only.)

**Jordan vs. Bird:
One on One**
The ultimate hoop match-up!
Michael Jordan challenges
Larry Bird in board-crashing ac-
tion. Find out who's the best.
From Electronic Arts. (IBM-PC
only.)

F-15 Strike Eagle*
Jet combat at its best!
Capture a true-to-life expe-
rience in the cockpit of the
world's best jet fighter—the
F-15. From MicroProse. (IBM-
PC only.)

Here's all you do. Send \$9.95 (\$15.95 for the
3½" IBM disk version) plus \$2.00 postage and han-
dling to:

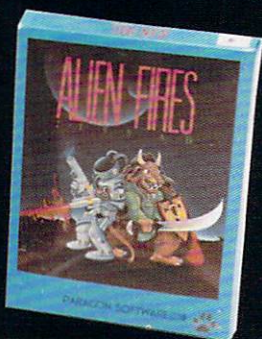
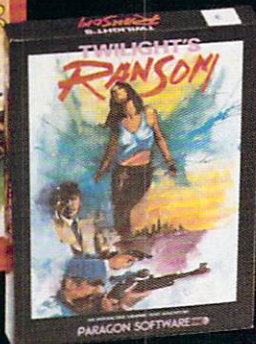
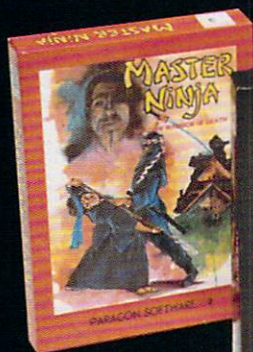
COMPUTE!'s Demo Disk Pack
Dept. C
P.O. Box 5188
Greensboro, NC 27403

(New York City residents add 8½% per demo disk.)
(North Carolina residents add 5½% per demo disk.)

COMPUTE! Publications, Inc. 
One of the ABC Publishing Companies
A part of Capital Cities/ABC Inc.

Fantastic Voyages

INTO YOUR IMAGINATION



Travel With Paragon Software
To A New World
Of Entertainment Excellence

■ Arcade Gamers will love the challenging battles of **Master Ninja: Shadow Warrior of Death**, an action-packed martial arts simulation set in the ancient land of Japan and featuring over 25 combat screens, 20 martial arts moves, historic ninja weapons, hidden traps, mystic priests and deadly animals.

■ Adventure lovers will enjoy **Twilight's Ransom**, a graphic/text tale of love, danger, crime and international intrigue set in the precarious atmosphere of a big city. It's a race against time to save the woman you love.

■ Role players will be challenged by **Alien Fires - 2199 A.D.**, a futuristic science fiction game placing you in the role of a Time Lord sent to a distant planet to find an insane genius and his Galaxy threatening invention.

■ Fantasy lovers will delight in **Wizard Wars**, a creative graphics adventure featuring a brave tale of gallant heroism and wicked villainy set in the imaginative kingdom of Nhagardia. You assume the role of the Wizard Temeres on his noble quest to stop the evil designs of the power mad sorcerer Aldorin. Over 50 magical creatures to meet and 85 enchanted objects to collect.

NEW!

■ For the strategist, Paragon Software presents **Guardians of Infinity: To Save Kennedy**, a complex strategy/text adventure where you assume the role of a time travel scientist from the future who must journey back in time with five special agents in an attempt to prevent the 1963 assassination of President John F. Kennedy. Complete with a background novel, extensive manual and top secret slide show diskette.

Visit Your Nearest Retailer
or Call TOLL FREE
800-245-4525
for ordering information
or write to



Paragon Software Corp.
600 Rugh Street
Greensburg, PA 15601



Add professional-looking titles and credits to your home videos with *Home Video Producer*.

Use the frames that follow to add graphics and text to illustrate your videotape. Remember that *Home Video Producer* doesn't create a series of separate title cards—the border you pick in frame 1, for example, will border the entire title sequence unless you change it in a later frame. Text remains while graphics scroll and wipe across the screen.

Other *Home Video Producer* features allow you to change the size of graphics and text and to position text or graphics anywhere on the screen. It's fun to pick graphics and plan various effects—and because there's a preview feature, you don't record anything until you're ready.

When you're ready, recording your titles is as easy as creating them. *Home Video Producer* accommodates Beta, VHS, and 8mm videotape systems. Connect the Video Out jack of your computer to the Video In jack on your VCR or camcorder and connect the Video Out jack on your VCR or camcorder to your monitor. Some systems may require the purchase of cable adapter plugs.

After you've hooked up the computer to your VCR or camcorder, insert a blank tape, start recording, and then press the pause button. Pick the title sequence you want by using the *Home Video Producer's* Play Movie command. The program sounds five beeps as it counts down to the beginning of the title sequence. Sometime around the third or fourth beep, you should take the video recorder or camcorder out of the pause mode and start recording the title. If you start too late, you'll miss part of the title. The timing differs with different equipment; with practice you'll find what works best for your setup.

All this means you have to have blank space on the videotape before the main event or you'll be erasing footage

as you record your title. Although it takes planning, you'll find it best if you create titles for upcoming events before filming them. With a family reunion on the calendar, for instance, lay down your title at the start of a new tape. Tape the reunion (starting at a point after the title on the tape, of course). If you want, you can add tail credits to your family reunion film later.

One problem with the program is directly related to the design of current home-video equipment. Most video recorders have an erase head placed in front of the record head to ensure that the images you record will have a clean piece of tape to sit on. Unfortunately, when you add titles to previously recorded tapes, this erase/record head arrangement creates an unattractive and annoying blip at the head and tail of the inserted video piece. That means you can't add titles to the family videos already in your library without also adding this glitch.

Another drawback is the silent titles. While many videotape systems allow you to audio dub, you'll have to consult your video manual for the par-

ticulars. The program does supply ten preprogrammed titles that only require you to fill in text to accompany the animation. Those will hold you over while you learn to create your own title sequences.

Home Video Producer adds professionalism to your home videotapes. It might not be Hollywood, but at least nobody will keep you from working in this town again.

— Ed Ferrell

Home Video Producer

For . . .

Apple II (excluding IIGS)—\$49.95
Commodore 64/128—\$49.95
IBM PC and compatibles—\$49.95

From . . .

Epyx
P.O. Box 8020
Redwood City, CA 94063
(415) 366-0606

And . . .

Apple IIGS version scheduled for January 1989 release



HOLIDAYS & SEASONS

electric
crayon
DELUXE

Computer coloring book for ages 3 & up.

Make banners, posters & calendars!



Electric Crayon DELUXE programs can be bought at B. Dalton Software Etc., Babbage's, Egghead Discount Software, Electronic Boutiques, Walden Software or your favorite computer dealer or call Polarware at 1-800-323-0884.

Available for Apple, Commodore and IBM formats for \$29.95

Aussie JOKER POKER

\$200,000 JACKPOT

You could share in prizes worth **\$200,000** by playing the latest multi-player multi-format PC game from Australia.

Use the **5 free entry forms** included with every **Aussie JOKER POKER** game or send for free entry forms.

At the end of each month December 1988 through April 1989 four finalists and 240 winners of other JOKER SOFTWARE games will be randomly drawn from all entries received that month.

The **20** finalists will be flown to Las Vegas to play **Aussie JOKER POKER** in the **Golden Nugget** casino.

Highest scorers in each of four semi-finals will compete in a Grand Final with a **first prize of \$100,000 in cash.**

1,220 Prizes Value \$200,000

1,200 Joker PC software games at \$29.95 to \$49.95 dependent on disk format. Game prizes at sole discretion of sponsor.

\$60,000

Cash Prizes for Aussie JOKER POKER Contest Grand Final:

Highest Scorer: \$100,000

Second Highest Scorer: \$5,000

Third Highest Scorer: \$2,500

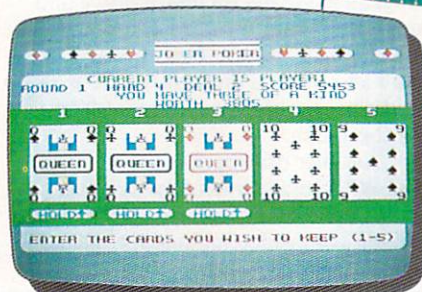
Lowest Scorer: \$1,500

16 Consolation Prizes of \$1,000 each to eliminated Finalists \$16,000

Prize includes air travel for Finalists and their guests from the major airport to Las Vegas with two days and two nights accommodation at the Golden Nugget (approx. retail value \$750 each subject to departure points)

\$15,000

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



C64/128™

Aussie JOKER POKER is available for SIX major PC's

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

Suggested retail prices:

IBM & compatibles (CGA Board required) \$39.95

Amiga & Atari ST \$49.95

Macintosh (mono only) \$49.95

Apple II \$39.95

C64/128 \$29.95

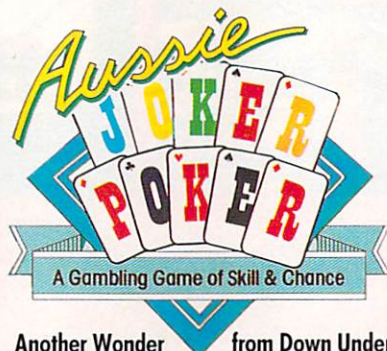
If ordering by telephone add \$3 shipping & handling and check that your PC meets the minimum hardware requirements as no cash refunds apply. Warranty is limited to free replacement of faulty products returned by prepaid post.

Aussie JOKER POKER Contest Rules

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



IBM®



Another Wonder from Down Under

SEE YOUR NEAREST MINDSCAPE SOFTWARE RETAILER



EXCLUSIVE DISTRIBUTOR

or if not available order direct on

1-800-24-JOKER

24 hour order service

RETAILERS CALL: 1-800-221-9884

VCR Companion

The name notwithstanding, *VCR Companion* isn't a miniature television for the cluttered desk at your office. Instead, it's Brøderbund Software's characteristically elegant execution of a deceptively simple concept: recording the output of your computer onto videotape.

The operative term here is *video*. A VCR can record a video image whether it comes from its own tuner, another VCR, a video camera, a videodisc player, or a computer. The only requirement for recording from a computer is that you be able to connect the video output of the computer to the video input of the VCR.

Of course, videophiles don't need help brainstorming excuses to record computer-generated text, graphics, animations, and professional editing effects on videotape—but they could benefit from a system designed to do all that. *VCR Companion* will add titles, credits, and documentation to your home movies; replace commercials in movies and sports events with graphics interludes; and produce self-running video messages.

VCR Companion occupies two double-sided 5¼-inch disks. Side 1 contains the copy-protected program. Sides 2 and 3 aren't copy-protected and contain the text fonts, borders, background pictures, patterns, graphics icons, animations, transition effects, and special video effects. Side 4 contains 12 bonus animations and another dozen graphics icons.

The program accepts input from a keyboard, joystick, or mouse. Mouse movement of the cursor is smooth and sure. My only wish is for better contrast between the cursor and the rest of the screen on a monochrome monitor. Either a composite color or an RGB monitor works best, since some options involve color selection.

VCR Companion's video-transition routines include fancy dissolves and wipes like the ones your local commercial television stations use to change from one scene to another. Special effects include flashes, twinkling stars, rain, sparkling glitter, and a melt-down of your screen. These effects add visual interest and motion to your creations, and they're sure to draw viewer attention.

Motion is further provided by animated displays that travel, at the user's option, from left to right or from right to left across the screen. Text can be



Use *VCR Companion's* clapboard to construct title and animation sequences that enhance your home video movies.

static, scrolled up the screen, or scrolled horizontally from right to left. Other Brøderbund products offer even more graphics elements for video presentations. Double-hi-res screens converted from *Dazzle Draw*, for example, can provide background scenes, patterns, and graphics icons. Complete movies from *Fantavision* will import directly into *VCR Companion* within the memory limitations of your computer.




An 11-page tutorial, liberally sprinkled with screen shots, takes the first-

time user through the production of a script. The script is listed like a sequential text file, one item per line, on the left side of the screen in an area called the *clapboard*. This format makes the script's individual elements easy to insert, delete, and edit.


The easy editing and the program's fast operating speed make using *VCR Companion* a pleasure. The program's design encourages experimentation, which is the best way to learn the program. Six ready-made video productions that you can examine and modify are included. When you're ready to create your own masterpiece, you can preview all or any portion of your script at any point in its production.

You complete scripts in stages. It's easy to develop several polished scenes, saving each to a folder on your data disk, and to combine them by appending a script to the one currently in memory.

It's also easy to create self-booting and self-running film disks. Imagine creating a continuously running video display to promote upcoming events at your school's next open house. You could even send a customized video

DINOSAURS ARE FOREVER



electric
crayon
DELUXE

Computer coloring book
Ages 3 & up

► Create picture calendars

► Design and print custom BANNERS

POLARWARE®

Electric Crayon DELUXE programs can be bought at B. Dalton Software Etc., Babbage's, Egghead Discount Software, Electronic Boutiques, Walden Software or your favorite computer dealer or call Polarware at 1-800-323-0884.

Available for Apple, Commodore and IBM formats for \$29.95

greeting card to a loved one instead of the ordinary paper kind.

VCR Companion's user interface is a hybrid. The program combines the look and feel of *The Print Shop* with an underlying Macintosh-type environment of windows, icons, and a hierarchical file system. The *Print Shop* feel breeds quick familiarity with the program's options, the menu selections, and basic operation. Unlike in *The Print Shop*, however, you don't have to follow a linear path to some predetermined end.

The lists of commands, graphics-and-text options, and file-handling routines are presented in windows and dialog boxes. Although the number of graphics elements is limited, you can combine those elements with text, timing controls, and transitions in limitless ways. File handling is accomplished with the metaphor of disk and file-folder icons, sidestepping dreaded ProDOS 8 pathnames. You can transfer the program to a hard disk and format a data disk or a film disk without having to exit the program.

VCR Companion's cleverest feature is its audio prompt option during a recording session. The program pro-

vides an appropriate number of beeps to indicate which disk side it needs to continue a recording. This eliminates an annoying visual prompt that would make your recording less tidy.

The only drawback I've found in using *VCR Companion* is its inability to reload a script from a self-running film disk. If you ever want to modify a script, you must save it on a regular data disk. Compared with the program's benefits, however, that drawback seems nearly insignificant. This is a winning program, a welcome addition to the video-computer library.

— Duncan Teague

VCR Companion

For . . .
Apple II—\$49.95

From . . .
Brøderbund Software
17 Paul Dr.
San Rafael, CA 94903-2101
(415) 492-3500

And . . .
A school edition, which includes a teacher's guide and one backup disk—\$59.95; a lab pack, which includes a teacher's guide and four additional disks—\$119.95

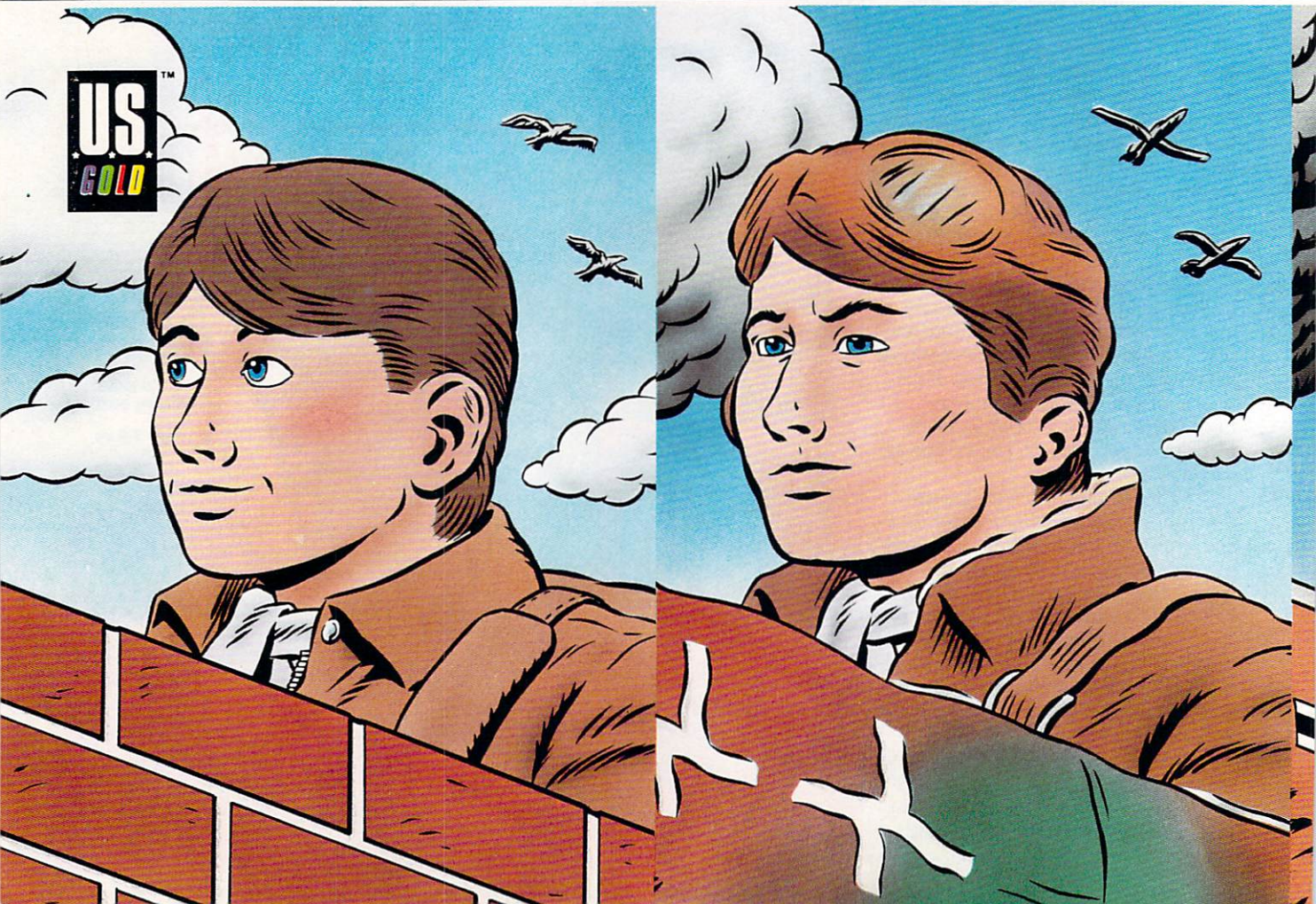


SideKick Plus

You need the four calculators in *SideKick Plus* to tally the ways its predecessor, *SideKick*, changed the PC world. That's how ubiquitous the first memory-resident program has become. By giving people RAM-resident tools that are accessible at a keystroke, Borland extended the effectiveness of the IBM PC and compatibles. Suddenly it was easy, even irresistible, to do more things than use just your main application.

SideKick's tools include a notepad, a calculator, a phone book/autodialer, and monthly and appointment calendars, as well as an ASCII table for reference. The array of desktop devices, their easy residency in RAM, and the program's low price helped establish *SideKick* as a must for any PC power user.

Power users aren't easily satisfied, though, not even with a package as complete and well thought-out as the original *SideKick*. Having tasted what resident desktop tools could be like, many people began dreaming of the ultimate package—*SideKick to the Max*.



Actually, it's called *SideKick Plus*, a new package that demonstrates Borland's ability to do it again—to enhance many of the old tools to a luxury level and provide a few new ones that will quickly become indispensable. *SideKick Plus* provides plenty of desktop conveniences with a minimum of fuss.

Every desktop must have a calendar. After the current fashion of coining euphemisms for applications, the program's calendar is now called a Time Planner. This jargon is right on the money, however. *SideKick Plus* provides not only monthly calendars, but also daily agendas, appointment calendars, graphics displays of commitments, and the ability to append notes or set alarms.

Integration of features is the key. For example, you can set a time on the calendar so that the telecommunications feature will automatically make a call for you.

Included in the program's full array of telecommunications features is the Phonebook, which feels like a database. Call it up, and a file card-like form appears onscreen, offering fields for name, address, notes, and so on. *SideKick Plus* can dial from the Phone-



SideKick Plus features several indispensable desktop tools, including a calendar and four types of calculators.

book, and it can handle online services.

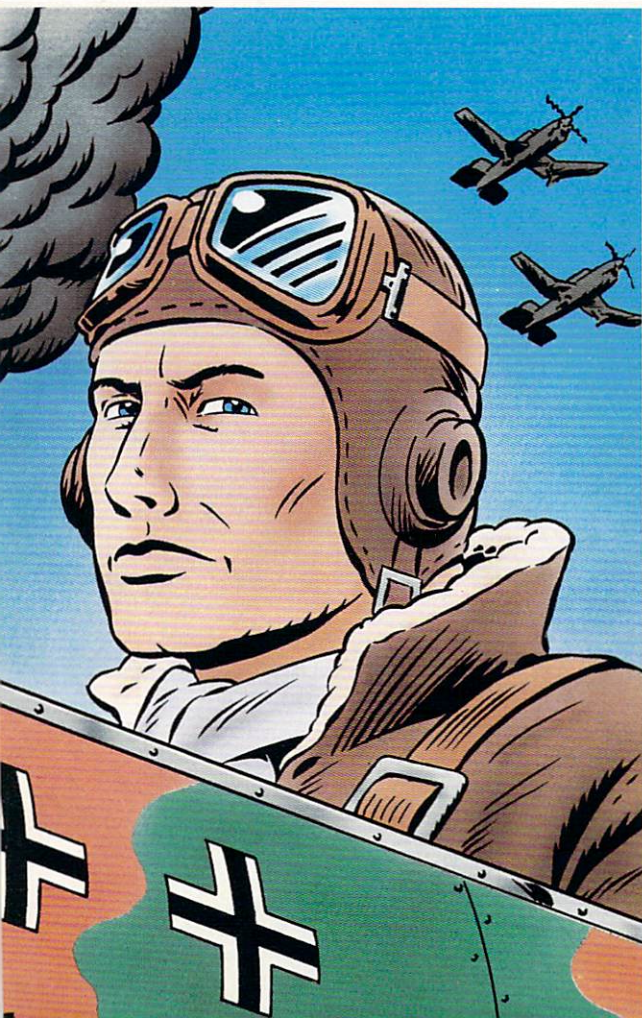
Borland's master stroke is the inclusion of a DOS file-management utility that quickly becomes vital. *SideKick Plus* contains a DOS shell with functions that let you view, sort by a variety of qualifiers, copy and delete files, change directories, and format disks.

I'm an inveterate outliner, and I lean as heavily on outline processors as on any other application packages. Outlook, *SideKick Plus's* outliner, is easy to use, imports text files, generates organi-

zational charts, and supports the sort of shuffling of ideas that makes outliners effective brainstorming and free-association tools. Outlook, however, has one surprising and unfortunate drawback. You can print numbered outlines, but you can't get hierarchical numbering onscreen. This is a major deficiency that the company should remedy quickly: Onscreen numbering is vital to the development of a logical progression of ideas within an outline.

The old *SideKick's* notepad is perfect for quick memos while you're working in another application. In that respect, the new package offers perfection plus: nine notepad windows, each capable of holding files with more than 10,000 words. You can size the windows to your taste and preference. Printer support, oddly, is limited.

The original *SideKick's* calculator has always been one of its key selling points: It's available for quick computations. True to its title, *SideKick Plus* includes four calculators designed to satisfy various needs. The default is a business calculator which includes, as do all of the calculators, an onscreen tape, simplifying review of calculations. There are also scientific, programming,



Fasten your seatbelt. You're in for the dogfight of your life.

With these details, it's no wonder we fly in the face of F-15 Strike Eagle.



IT'S WAR.

And the fate of the free world rests in your capable hands. Take hold of the controls and your wits. Because 20,000 feet below you thunders the most feared battleship in all of Germany's fleet: The Bismarck. Enemy fighters zoom above you, anxious to turn you into fish food. And all around you lurk treacherous U-Boats, E-Boats and mine fields. Steady, mate. Remember all those practice flights? Now it's for real. You've got position reports to monitor incoming intelligence. A fully detailed instrument panel. And you can fire from one of two gunnery positions. All of which'll come in mighty handy when you've got 42,000 tons of riveted killing machine in your sights.



WELL CAPTAIN, IT LOOKS LIKE F-15 STRIKE EAGLE™ ISN'T SO STRIKING, AFTER ALL.

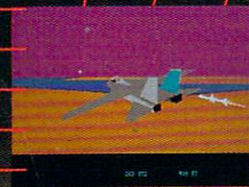
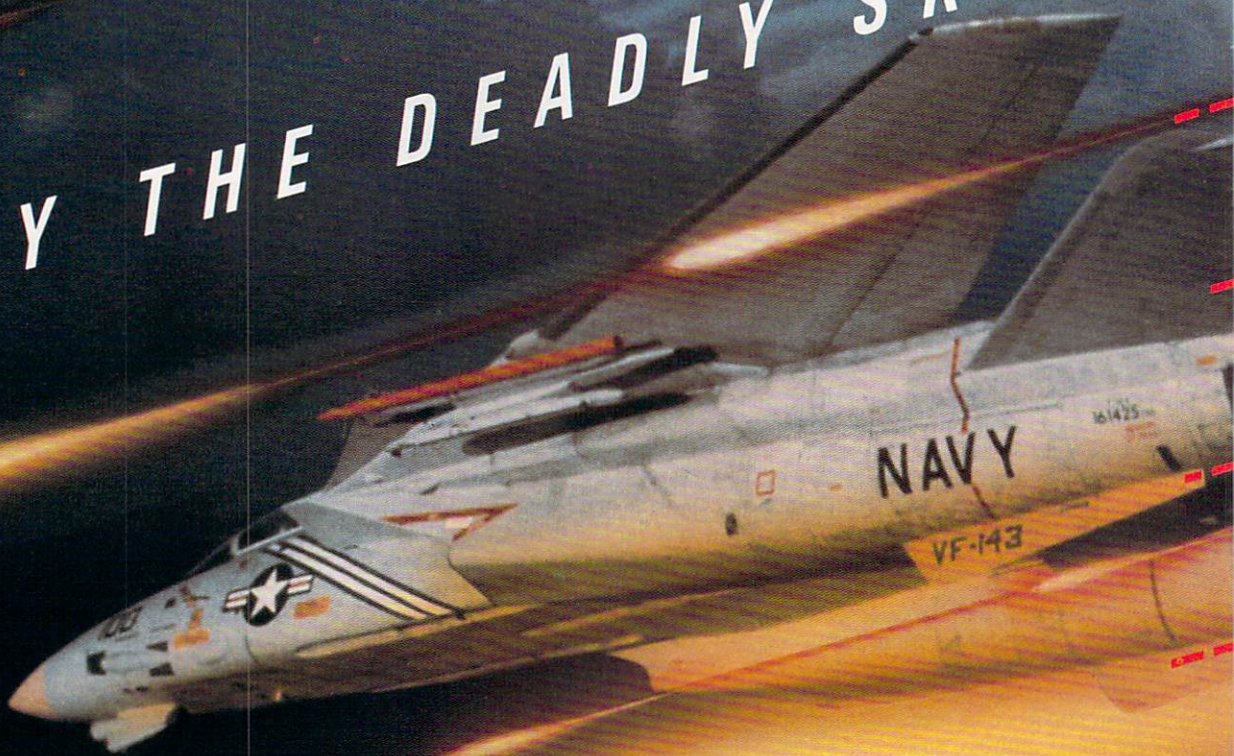
	DIVE BOMBER	F-15 STRIKE EAGLE
Easy to use, fully detailed instrument panel	Of course	Nope
Look of enemy planes & ships	True to life	Stick figure
Pace of enemy attacks	Constant	Lagging
Takeoffs	Breathtaking	Nonexistent
Landings	Brace yourself	Limited

Note: Comparisons are based on current Apple, IBM, and Commodore 64/128 versions of the product. Apple II Series & Compatibles, Atari ST, Commodore 64/128, IBM PC & Compatibles. Screens from Atari ST version of the game. U.S. Gold is a trademark of GO America Ltd. Game program licensed from GO America Ltd. ©1987 Acme Animation/GremlinGraphics Ltd. ©1988 Epyx, Inc. F-15 Strike Eagle is a trademark of MicroProse Software.

DIVE BOMBER™ from U.S. GOLD™

Velocity Development Corporation, P.O. Box 875, Palatine, ILL 60078-0875, (312) 991-0594. Jet Fighter, The Simulation, and Velocity are trademarks of Velocity Development. All trademarks are acknowledged. ©1988 Velocity. Velocity products are distributed by Broderbund Software. Screenshots shown are with EGA version. Suggested retail price \$49.95.

FLY THE DEADLY SKIES



JET FIGHTER: THE ADVENTURE

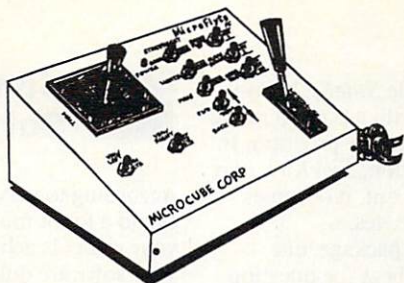
JOHN DVORAK

VELOCITY...
The best games ever.

Jet Fighter™ The most revolutionary and advanced jet combat simulator around. Industry guru John Dvorak called it: "THE FINEST FLIGHT SIMULATOR I'VE EVER SEEN . . . Highly Recommended!" It'll put afterburners on your computer with the fastest and most dazzling, graphics imaginable. Realistic Carrier Landings. Sweat-drenching MiG Encounters. The nightmare of Silkworm missiles homing in for the kill. Over thirty exciting combat missions woven together into an epic adventure. This is what you've been waiting for.

Jet Fighter™ For your IBM PC, Tandy or compatible.

MICROFLYTE JOYSTICK



For Serious Pilots Only!

Attention! If you are serious about flying and want realism at its best, then the *MicroFlyte* joystick is for you. Our full featured model, designed for use with Flight Simulator by MicroSoft, includes a proportional joystick and throttle, a 10 button flight control panel, and an I/O port for future developments such as a floor mounted rudder. The joystick and throttle are also useful for other flight simulator programs. The Microflyte works on IBM PC's, XT's and compatibles. We also have Microflyte joysticks available for other computers such as the C64, Atari ST, and Amiga. Call or write for details and the full story on the *MicroFlyte Joystick*.

Microflyte PC-1 (Full featured Control Panel)	\$174.50
Microflyte PC-2 (Joystick & Throttle)	\$74.50
Microflyte PC-3 (Joystick only)	\$59.95



FLY RIGHT

WITH MICROFLYTE

MicroCube Corporation (703) 777-7157
Post Office Box 488, Leesburg, VA 22075

Advertisers Index

Reader Service Number/Advertiser	Page	Reader Service Number/Advertiser	Page
102 ActionSoft	61	134 Montgomery Grant	103
103 Activision	48	135 No Frills Software	94
104 Air Force	57	136 Origin Systems	65
105 Arcadia	45	137 Paragon PC Software	95
106 Britannica Software	63	138 Paragon Software	82
107 Broderbund	79	139 Parson Technology	97
108 Cincinnati Microwave	33	140 PC Enterprises	56
109 CompuServe	39	141 Polarware	83, 85
110 Compu Teach	BC	142 Precision Data Products	92
111 Computers Buy Mail	101	Quasimotto Data Systems, Ltd.	91
Computer Sports World	92	143 Radio Shack	35
112 Electronic Arts	98-99	144 Rainbird	77
113 EPYX	IFC-1	145 Renco Computer Printer Supply	90
114 EPYX	21, 23, 25, 27, 29	146 Sierra On Line	59
115 EPYX	72-73	147 Simon and Schuster Software	43
116 EPYX	76	148 Sir-Tech Software, Inc.	17
117 EPYX	86-87	149 Smart Luck Computer Systems	56
118 EPYX	100	150 Soft Byte	90
119 First Row Software Publishing	7	151 Software Discounters of America	93
120 G. E. Information Services	13	152 Software Simulations	70
121 HAS Ware Inc.	94	153 Spinnaker	71
122 Independent Insurance Agent	15	154 Strategic Simulations Inc.	69
123 Indus-Tool	90	155 subLOGIC Corporation	61
124 Joker Software	84	156 subLOGIC Corporation	95
125 Koei Corporation	IBC	157 Taito Software	36-37
126 Konami	8-9	158 Velocity Software	88
127 Lycos Computer	50-55	159 Wesson Intl.	78
128 Mastertronic Intl.	75	160 Wright Computer	92
129 Meca Ventures Inc.	5		
130 Mibro Company	89		
131 MicroCube Corporation	89		
132 Micro Prose	47		
133 Micro Prose	67		

Classified Ads 94-95
COMPUTE!'S Demo Disk Pack 80-81

MIBRO

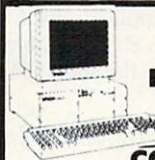
CO., INC.

OUR ONLY STORE
ESTABLISHED 1950
64 WEST 36th ST
NEW YORK CITY
NEW YORK 10018

COMPUTER DISCOUNTS ON ALL YOUR COMPUTER NEEDS

CALL TOLL FREE 1-800-451-9780

NEW YORK STATE RESIDENTS CALL (212) 695-7133
CUSTOMER SERVICE CALL (212) 967-2353
MON.-SAT. 10:00AM-7:30PM • SUN. 10:30AM-6:00PM



EQUITY I + PACKAGE IBM XT COMPATIBLE®

PACKAGE INCLUDES: Equity 1 + CPU & Keyboard • 360K Floppy Drive • 12" Computer Monitor • 10 Diskettes • Disc Drive Head Cleaner • Owners Manual • Word Processor • Spread Sheet • Data Base

\$748

SAME PACKAGE AVAILABLE WITH:
20 MEGABYTE HARD DRIVE.....\$948
30 MEGABYTE HARD DRIVE.....\$998
40 MEGABYTE HARD DRIVE.....\$1098



EQUITY II + 25 PIECE PACKAGE IBM AT COMPATIBLE®

PACKAGE INCLUDES: Equity II + CPU & Keyboard • 12 MB Floppy Drive • 12" Computer Monitor • 10 Diskettes • Disc Drive Head Cleaner • Owners Manual • Word Processor • Spread Sheet • Data Base

\$1148

SAME PACKAGE AVAILABLE WITH:
20 MEGABYTE HARD DRIVE.....\$1398
30 MEGABYTE HARD DRIVE.....\$1448
40 MEGABYTE HARD DRIVE.....\$1548



MODEL D 25 PIECE PACKAGE IBM XT COMPATIBLE®

PACKAGE INCLUDES: Model D CPU & Keyboard • 360K Floppy Drive • 12" Computer Monitor • 10 Diskettes • Disc Drive Head Cleaner • Owners Manual • Word Processor • Spread Sheet • Data Base

\$648

SAME PACKAGE AVAILABLE WITH:
20 MEGABYTE HARD DRIVE.....\$698
30 MEGABYTE HARD DRIVE.....\$948
40 MEGABYTE HARD DRIVE.....\$1048



MODEL D2 25 PIECE PACKAGE IBM AT COMPATIBLE®

PACKAGE INCLUDES: Model D2 CPU & Keyboard • 12 MB Floppy Drive • 12" Computer Monitor • 10 Diskettes • Disc Drive Head Cleaner • Owners Manual • Word Processor • Spread Sheet • Data Base

\$1198

SAME PACKAGE AVAILABLE WITH:
20 MEGABYTE HARD DRIVE.....\$1398
30 MEGABYTE HARD DRIVE.....\$1448
40 MEGABYTE HARD DRIVE.....\$1548



IBM ORIGINAL IBM XT 25 PIECE PACKAGE

PACKAGE INCLUDES: IBM XT CPU & Keyboard 360K Floppy Drive • 12" Computer Monitor • 10 Diskettes • Disc Drive Head Cleaner • Owners Manual • Word Processor • Spread Sheet • Data Base

\$898

SAME PACKAGE AVAILABLE WITH:
20 MEGABYTE HARD DRIVE.....\$1148
30 MEGABYTE HARD DRIVE.....\$1198
40 MEGABYTE HARD DRIVE.....\$1298



VENDEX® HEAD START 25 PIECE PACKAGE IBM XT COMPATIBLE®

PACKAGE INCLUDES: Head Start CPU & Keyboard • 360K Floppy Drive • 12" Computer Monitor • 10 Diskettes • Disc Drive Head Cleaner • Owners Manual • Word Processor • Spread Sheet • Data Base

\$748

SAME PACKAGE AVAILABLE WITH:
20 MEGABYTE HARD DRIVE.....\$998
30 MEGABYTE HARD DRIVE.....\$1048
40 MEGABYTE HARD DRIVE.....\$1148



TOP 10 BEST SELLING IBM COMPATIBLE COMPUTERS

• NEC POWERMATE I • NEC POWERMATE II • KAYPRO PC-30
• KAYPRO 286 • EPSON EQUITY III
• PACKARD BELL Vx-88 • PACKARD BELL PB-286 • COMMODORE COLT
• COMMODORE PC-10 III
• BLUE CHIP 286



TOP 20 BEST SELLING PRINTERS

Panasonic KX-P1080 Epson LX-800
Panasonic KX-P1091 Epson LQ-500
Panasonic KX-P1092 Epson FX-850
Panasonic KX-P1592 Epson FX-1050
Panasonic KX-P1595 Epson LQ-850
Panasonic KX-P1524 Epson LQ-1050
Star NX-1000 Star NX-2400
HP LASER SERIES II LASER PRINTER
PANASONIC KX-P4450 LASER PRINTER
COME IN FOR NEW LOW PRICES!!

ALL IBM COMPATIBLE COMPUTERS
AVAILABLE WITH 20/30/40/60/80 HARD DRIVES
ALL SYSTEMS SUPPORT MGA/CGA/VGA/MULTISCAN
PACKAGE DEALS AVAILABLE ON ALL SYSTEMS!!

ORDER NOW!! PHONE ORDERS ONLY
CALL TOLL FREE 1-800-451-9780 NY RESIDENTS/INFO CALL (212) 695-7133
Use MIC, Visa, AMEX Or Send Money Order, Certified Checks. All Merchandise Brand New Factory Fresh. Shipping Charges Non-Refundable. For Mail Orders Please Call Before Sending In Money Order. All Prices Subject To Manufacturers Increase/Decrease. Refunds Within 7 Days Only With Original Packaging & Unfilled Guarantee Card. No Refunds Accepted Without Prior Verbal Authorization. Customer Service Between 12 pm-6 pm. Pictures Are For Illustr. Purposes Only. Not Responsible For Typographical Errors. Consumer Affairs License No. 800-253. Prices Good For Mail Orders Only.

REVIEWS

and formula calculators. The calculators are easier to use and more powerful than the calculator in the original *SideKick*.

Every element in the package integrates with the others. *SideKick Plus's* Clipboard makes cutting and pasting convenient, whether it's being done among the program's elements or from outside stand-alone packages.

Documentation is thorough, readable, and literate. It's also long. While *SideKick's* manual could be read cover to cover in less than an hour, *SideKick Plus's* manual is hundreds of pages long. It contains effective tutorials and instruction, offers advice to *SideKick* users from way back, and is capped by a good index. The program also features solid online Help screens.

SideKick Plus's effect on the MS-DOS world will likely be similar to its older sibling's influence, but, obviously, there are tradeoffs. *SideKick Plus* is much larger than its predecessor. It requires a hard disk, and, while installation is simple and fast, *SideKick Plus* occupies more than a megabyte of disk space. Its size on disk can be reduced by eliminating unneeded functions.

You can configure memory size,

too. Borland has made *SideKick Plus* configuration easy, with a pop-up menu that lets you customize the program. In minimum configuration, *SideKick Plus* takes about 70K; full out, it occupies several hundred kilobytes.

This is a terrific package, one whose thoroughness begs the question of whether it's a resident peripheral or an integrated package of stand-alone applications. Either way, *SideKick Plus* is an honorable and admirable addition to the shelf of PC tools.

— Keith Ferrell

SideKick Plus

For . . .

IBM PCs and compatibles and PS/2s with DOS 2.0 or higher, a hard disk, and 384K—\$199.95

From . . .

Borland International
1800 Green Hills Rd.
Scotts Valley, CA 95066
(408) 438-5300

And . . .

Support for OS/2 is planned; the program is available on 3 1/2- and 5 1/4-inch disks; it's not copy-protected.

Constellation Software

According to surveys, Amiga owners spend a lot of money on software. If your wallet is aching, you can stretch your software dollar further with Constellation Software's line of budget games.

How do these \$19.95 games compare with the \$30 and \$40 games other companies sell? Favorably, on the whole. I took a close look at four of these games; a couple were good, one was great, and one was a real gem.

Mission Elevator is similar to the arcade game *Elevator Action*. You're a spy on your way up from the lowest level of a building to the highest. You'll do a lot of dirty work on the way up—expect to kill a few enemies on each floor. You'll also have to look around carefully to find secret rooms, hidden treasures, surprising traps, and more.

The graphics in this game are well done. Some people might be disturbed by the title screen, though, which shows the protagonist baiting one of his foes with an obscene gesture. The game is more wholesome. There's killing going



Save on BROWNOUT protection!

LINE CONDITIONER

keeps power constant during voltage sags and power surges!

Prevents damage and downtime on computers, phone systems, cash registers, etc. by providing full voltage support when AC input power varies up or down. Maintains constant output of 120V. *Line Stabilizer* is a stepped transformer system that has higher efficiency than CVT's (constant voltage transformers) and gives lower waveform distortion at FAR LOWER COST. Built-in spike and noise suppression. 1-Year warranty!

1200-Watt, 4 Outlet
ONLY \$199

1800-Watt, 6 Outlet
ONLY \$259

Order toll free 1-800-662-5021
IN ILLINOIS CALL 1-312-648-2191 OR MAIL COUPON

INDUS-TOOL, 730 W. Lake Street
Dept. C1, Chicago, IL 60606

Enclosed is \$_____ or charge on
 MasterCard Visa Expires _____
Card No. _____

Send 1200-Watt @ \$199 1800-Watt @ \$259

Name _____
Company _____
Address _____
City, State, Zip _____
Phone _____

COLOR RIBBONS & PAPER

COLOR RIBBONS	RED, BROWN,	BLUE, PURPLE,	GREEN, YELLOW,
Ribbons	Price Each	Black	Color Heat Transfer
Apple Imagewriter I/II		3.75	4.50 6.50
Citizen 120 D		5.00	6.00 7.95
Commodore MPS 801		4.15	4.75 5.75
Commodore MPS 802		6.00	6.75 -
Commodore MPS 803		4.95	5.95 7.00
Commodore MPS 1000		3.95	4.95 6.75
Commodore MPS 1200		5.00	6.00 7.95
Commodore 1525		6.00	- -
Okidata 82/92/93		1.75	2.25 4.50
Okidata 182/192		6.50	7.50 -
Panasonic KX-P 1090		6.75	7.75 -
Seikosha SP 800/1000		5.25	6.50 7.95
Star SG 10		1.75	2.25 4.50
Star NX10/NL10		5.00	6.00 7.95

COLOR PAPER

BRIGHT PACK—200 Sheets/50 each color: Red, Blue, Green, Yellow. 9 1/2 x 11 — \$10.90/pk.
PASTEL PACK—200 Sheets/50 each color: Pink, Yellow, Blue, Ivory. 9 1/2 x 11 — \$10.90/pk.

T-SHIRT RIBBONS (Heat Transfer) — Call For Price.

COLOR DISKETTES

5 1/4" DS/DD Rainbow Pack. 10/pack — \$12.50

For ribbons & paper not listed above, call for price & avail. Price & spec. subject to change w/o notice. Min. order \$25.00. Min. S & H \$3.50. Add \$2.25 C.O.D. add'l. IL res. add 6.25% tax. MC & Visa accepted.

RENCO COMPUTER PRINTER SUPPLIES
P.O. Box 475, Manteno, IL 60950 U.S.A.
1-800-522-6922 • (IL) 1-800-356-9981
815-468-8081

WIN THE LOTTO

WITH YOUR HOME COMPUTER!

Use your home computer and Soft-Byte's amazing new "Lotto Program" to get more winning tickets.

In just seconds this software analyzes past winners and produces a powerful probability study on easy-to-read charts. With a single press of a key, you'll see trends, patterns, odds/evens, sum totals, number frequencies, and much more. It also includes automatic number wheeling, instant updating, and a built-in tutorial.

Ask your software dealer.

APPLE, IBM, and Commodore \$24.95
Atari, Radio Shack \$21.95
AMIGA \$29.95
Back-up Copies \$3.00

Add \$2.00 shipping and handling. Credit card orders approved by phone and shipped same day.

Make checks payable to SOFT-BYTE and mail to:

**P.O. Box 556 Forest Park
Dayton, Ohio 45405**

513-278-1110
Soft-Byte
VISA MasterCard

Christmas Savings

3M Head Cleaning Kit

5-1/4" (10 cleanings) \$ 5.95 ea.
 (30 cleanings) 14.95 ea.
 3.5" (30 cleanings) 11.95 ea.

Sale



3.5" Diskettes

HD 2.0 Megabyte \$2.95 ea.
 DD 1.0 Megabyte 95¢ ea.

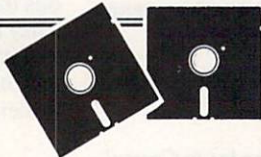
Fully Certified - Lifetime Warranty
 Minimum 50 Diskettes



5.25" Diskettes

DSDD 29¢ ea.

FREE Envelopes & WP Tabs
 Minimum 100 Diskettes



FOREIGN ORDERS INVITED

FREE CATALOG

Complete line of quality
 supplies for your computer.

S&H: (USA) \$4.00 first 100 or
 fewer disks, \$3.00 each
 succeeding 100 or fewer.
 Prices Subject to Change.

Toll Free: 800-258-0028

Michigan: 800-632-2468



C.O.D.



Precision Data Products™
 P.O. Box 8367, Grand Rapids, MI 49518
 616-452-3457 FAX: 616-452-4914

Wright Computer

IBM SOFTWARE

LIST OURS

Lotus 1-2-3 \$495 \$345
 Wordperfect 495 255

IBM ENTERTAINMENT SOFTWARE

Beyond Zork \$50 \$33
 Breach 40 26
 Chuck Yeager AFT 40 26
 Earl Weaver BB 40 28
 Falcon 50 33
 Final Assault 40 26
 King's Quest I, II, III or IV 50 33
 Mini Putt 40 26
 Pirates 40 26
 Police Quest I or II 50 33
 Silent Service 35 23
 Space Quest I, II or III 50 33
 Starflight 50 32
 Thexder 40 26
 3-D Helicopter 50 32
 Ultima IV or V 60 39
 Wasteland 50 34
 Zak McKracken 45 29

VISA • MASTERCARD
(316) 681-0331
 Call Collect

*SEND FOR COMPLETE LISTING
 **TITLES & PRICES ARE IBM 5 1/4" FORMAT
 ***OTHER FORMATS AVAILABLE.

Wright Computer

P.O. Box 780444
 Wichita, KS 67278-0444

Same Day Shipping (subject to availability)

Order by mail with money order or check (check orders not shipped until cleared).
 Do not send cash.

SHIPPING: U.S. orders sent U.P.S. Add \$2.50 for shipping and handling. Kansas residents
 add 5% sales tax. Prices subject to change.

SERIOUS ABOUT SPORTS?



GET IT ALL WITH

COMPUTER SPORTS WORLD

America's oldest and largest sports and horseracing database.

AT YOUR FINGERTIPS! 24 HOURS - UP TO THE MINUTE

Scores In Progress • Injuries • Fantasy Stats • Transactions
 • Weather • Team Logs • Las Vegas Odds •

Call now and speak to a representative for your demonstration
 account number and password.

1-800-321-5562

IN NEVADA CALL 702-294-0191

COMPUTER SPORTS WORLD

A Service of The Chronicle Publishing Company • San Francisco, CA

SOFTWARE DISCOUNTERS OF AMERICA



USA/Canada Orders—1-800-225-7638

PA Orders—1-800-223-7784

Customer Service 412-361-5291

- Free shipping on orders over \$100 in continental USA
- No Surcharge for VISA/MasterCard
- Your Card is not charged until we ship

PLATINUM

A full-featured desktop publishing tool that allows you to design, layout, produce, and print top-quality professional-looking documents. Publish It!

List \$199.95

Our Discount Price \$129



Our largest selection of software ever for your IBM or Compatible!

- | | | | |
|----------------------------|--------|----------------------------|--------|
| Spell It | \$30 | Winter Games | \$14 |
| Word Attack Plus | \$30 | World Games | \$14 |
| ELECTRONIC ARTS | | | |
| Software Classic Series: | | | |
| Adventure Const. Set | \$9.88 | Champ. Baseball | \$9.88 |
| Arctic Fox | \$9.88 | Champ. Basketball | \$9.88 |
| Lords of Conquest | \$9.88 | GFL Ch. Football | \$24 |
| Marble Madness | \$9.88 | Star Rank Boxing 2 | \$24 |
| One-on-One | \$9.88 | HI-TECH | |
| Patton vs. Rommel | \$9.88 | Print Power | \$9.88 |
| Pinball Const. Set | \$9.88 | Sesame St. Print Kit | \$9.88 |
| Seven Cities Gold | \$9.88 | INFOCOM | |
| Super Boulder Dash | \$9.88 | Beyond Zork | \$32 |
| World Tour Golf | \$9.88 | Hitchhikers Guide | \$9.88 |
| ELECTRONIC ARTS | | | |
| Alien Fires | \$23 | Gamma Force | \$8.88 |
| Bard's Tale | \$32 | Lane Mastadon | \$8.88 |
| Chessmaster 2000 | \$26 | Zork Quest | \$8.88 |
| Chuck Yeager's AFT | \$26 | Leather Goddesses | \$9.88 |
| Deluxe Paint 2 | \$65 | Zork 1 | \$9.88 |
| Demon Stalkers | \$26 | Zork Trilogy | \$32 |
| Double Dragon | Call | LEARNING COMPANY | |
| | | Math Rabbit | \$24 |

SIERRA

Travel with Rosella, the beautiful princess and heroine. Journey to a town far away on a frantic search for the one item that can save your father from certain death.

King's Quest IV
List \$49.95

Our Discount Price \$32



ACCOLADE

- Ace of Aces
- Apollo 18
- Bubble Ghost
- 4th & Inches Football
- Grand Prix Circuit
- Hardball
- Jack Nicklaus Golf
- Mini-Putt
- Test Drive

ACTION SOFT

- Up Periscope

ALTURAS

- Maxx Yoke Adapter

ARTWORX

- Bridge 5.0
- Centerfold Squares
- Creative Cuisine
- Linkword Languages:
- French
- German
- Spanish

BOX OFFICE

- All's First Adventure
- California Raisins
- High Rollers
- \$100,000 Pyramid
- Psycho

BLOC DEVELOPMENT

- Form Tool

BRODERBUND

- Ancient Art of War
- Ancient Art of War at Sea
- Carmen San Diego
- Europe
- USA
- World
- Karateka
- Loderunner
- Print Shop
- P.S. Companion
- P.S. Graphics
- Library #1 or #2 \$21 Ea.
- Science Tool Kit

CENTRAL POINT

- Copy 2
- PC Tools Deluxe

CINEMAWARE

- Defender of the Crown
- S.D.I.
- Three Stooges

DATA EAST

- Guerrilla War
- Ikari Warriors
- Karnov
- Lock On
- Victory Road

DATASOFT

- Alternate Reality: City
- Hunt for Red October
- Tomahawk

DAVIDSON

- Algeblaster
- Grammar Gremlins
- Math & Me
- Math Blaster Plus



Wield weapons & spells to liberate the captive ruler of Britannia & free the kingdom from the clutches of the tyrant Blackthorn.

Ultima V
List \$59.95

Our Discount Price \$39



- Earl Weaver Baseball
- Empire
- Jordan vs. Bird
- Modem Wars
- Pegasus
- Rockford
- Scrabble
- Sentinel Worlds:
- Future Magic
- Skate or Die
- Starlight
- Strike Fleet
- Twilight Ransom
- Wasteland
- Zany Golf

EPYX

- California Games
- Death Sword
- Destroyer
- Dive Bomber
- Final Assault
- 4x4 Off Road Racing
- Home Video Producer
- Impossible Mission 2
- Print Magic
- Street Sports Baseball
- Street Sports Basketball
- Street Sports Soccer
- Sub Battle Simulator
- Summer Games 2
- The Games:
- Summer Edition
- Winter Edition

- Reader Rabbit
- Think Quick!
- Writer Rabbit

MINDSCAPE

- Balance of Power
- Captain Blood
- De Ja Vu
- Gauntlet
- Infiltrator 2
- Into the Eagle's Nest
- MISL Soccer
- Paperboy
- Shadowgate
- Super Star Ice Hockey
- Super Star Soccer
- Uninvited
- Visions of Aftermath

ORIGIN

- Moebius
- Ultima 1 or 3
- Ultima 4
- Ultima 5

SHARE DATA

- Concentration
- Family Feud
- Jeopardy
- Jeopardy 2
- Wheel of Fortune
- Wheel of Fortune 2

SIERRA

- Black Cauldron
- Gold Rush
- King's Quest
- 1, 2, 3 or 4
- Leisure Suit Larry
- Leisure Suit Larry #2
- Manhunter
- Mother Goose
- Police Quest
- Space Quest 1 or 2
- 3-D Helicopter Sim.
- Thexder

SIMON & SCHUSTER

- Star Trek:
- Rebel Universe
- Typing Tutor 4

SIR TECH

- Deep Space
- Wizardry Series:
- Knight of Diamonds
- Legacy of Lylgamin
- Proving Ground
- Return of Werdna

SPECTRUM HOLOBYTE

- Falcon
- Solitaire Royale
- Tetris: The Russian

DATA EAST

- Experience the full impact of the award-winning film, as you lead your platoon through the jungles, villages, underground tunnels, bunkers, and foxholes of war-torn Vietnam.

Platoon
List \$39.95

Our Discount Price \$24



Broderbund

The best elements of graphic adventures, trivia games, mysteries & arcade animation are combined to make this one of the hottest games on the market.

Where in the U.S.A. Is Carmen Sandiego?

List \$44.95

Our Discount Price \$29



P.O. BOX 111327—DEPT. CP—BLAWNOX, PA 15238

*Please Read The Following Ordering Terms & Conditions Carefully Before Placing Your Order: Orders with cashiers check or money order shipped immediately on in stock items! Personal & Company checks, allow 3 weeks clearance. No C.O.D.'s! Shipping: Continental U.S.A.—Orders under \$100 add \$3; free shipping on orders over \$100. AK, HI, FPO, APO-add \$5 on all orders. Canada & Puerto Rico-add \$7.50 on all orders. Sorry, no other International orders accepted! PA residents add 6% sales tax on the total amount of order including shipping charges. CUSTOMER SERVICE HOURS: Mon.-Fri. 9 AM-5:30 PM Eastern Time. REASONS FOR CALLING CUSTOMER SERVICE—412-361-5291 (1)Status of order or back order (2)if any merchandise purchased within 60 days from S.D. of A. is defective, please call for a return authorization number. We will not process a return without a return auth. #! Defective merchandise will be replaced with the same merchandise only. Other returns subject to a 20% restocking charge! After 60 days from your purchase date, please refer to the warranty included with the product purchased & return directly to the manufacturer. Customer service will not accept collect calls or calls on S.D. of A.'s 800# order lines! Prices & availability are subject to change! New titles are arriving daily! Please call for more information. ORDER LINE HOURS: Mon.-Thurs. 9:00 AM-7:00 PM Fri. 9:00 AM-5:30 PM Sat. 10:00 AM-4:00 PM Eastern Time. EXTENDED HOLIDAY ORDER LINE HOURS Nov.1-Dec. 15: Mon.-Thurs. 9:00 AM-9:00 PM Fri. 9:00 AM-6:00 PM Sat. 10:00 AM-4:00 PM Eastern Time.

MAIL TO:

**COMPUTE!
SUBSCRIBER SERVICE**

P.O. Box 10955, Des Moines, IA 50340-0955

Change of Address: Please advise as early as possible. Attach label with your old address and write in new address below.

New Subscriber: Fill in your name and address below. Use separate sheet for gift orders.

PLACE LABEL HERE

Renewal: Attach label.

_____ One year \$24.00 _____ Two years \$45.00
(Foreign subscribers please add \$6.00 per year for postage)

NAME _____

STREET _____

CITY/STATE/ZIP _____

_____ Please bill me _____ Payment enclosed

For other subscription questions or problems, please write a note and send entire form to the above address. OR CALL TOLL-FREE:

1-(800) 727-6937

Mind Travels™

(The Series)

Mind Travels (the Series), is the ideal way to improve your second language skills. Ideally suited for people of all ages, Mind Travels links both a comprehensive, graphics oriented Question/Answer session with a fast paced arcade section.



"Mind Travels Puts Fun Into Learning French"

- PC Magazine
May 31/88

Packages completely bilingual & available in English/French, Spanish & German versions.

Only **\$39.⁹⁵** US.
+ \$4.95 S&H

Compatible with IBM PC/XT/AT/PS/2, requires 256K RAM, DOS 2.1, CGA or Hercules (* French version CGA only). Keyboard or Joystick.



HAS Ware, Inc.
P.O. Box 315
Orleans, Ontario
Canada, K1C 1S7
(613) 837-1514



No Frills Software
800 E 23rd St Kearney Ne 68847
(308)234-6260 M-Sat 11am-7pm

We Have More PrintShop(tm) & Printmaster(tm) Icons, fonts and borders for more computers than anyone! Most disks available for Atari 8bit, Apple(PS & Newsroom), Atari ST(PM), Commodore(PS), IBM(PS). From \$2 to \$23 per disk.

PS Fonts & Borders 1 to 5 \$14.95 each
PS Graphics 1 to 7 \$9.95 each
Christian Scenes 1 or 2 \$30 each
Dvaka Graphics 1 to 3 (Hebrew graphics) \$23 each
Budget Graphics 1 to 26 from \$2 to \$6 each
N.E.R.D.S. Map disk set or Biology set \$15 /set
Coat of arms Disk \$13 to \$15(depending on format)
PLUS MANY MORE! Send SASE (\$0.45 postage) for all printouts. Shipping US add \$1.50 1st disk & \$0.50 each added disk to \$5 max(Can/Mex add \$1 additional-other countries add \$5 additional). Printshop, Printmaster & Newsroom trademarks of Broderbund, Unison World & Springboard Software respectively.



Classified

SOFTWARE

OUTSTANDING IBM SOFTWARE

The Best of P.D. & Shareware programs \$2.75/disk for 5.25" or \$3.75 for 3.5" Free list or 25 stamp for disk Catlg. ACL., 621 Fulton #35-C12 Sac. CA 95825

Give **CAVEMAN CLOCKWORK** for Christmas! Clever learning tool for children 4-8 years old. Teaches time concepts using animation and color graphics. High information content. \$39.95 +6% tax for Cal. residents, \$2.00 shipping and handling. (shipped immediately) IBM, requires EGA display, adapter. BL Educational Software, 2899 Agoura Rd., #529, Westlake Village, CA 91361.

WARGAMES FOR IBM PC—BATTLE GROUP Multi-player, Aegis based, air/sea war with carrier, AWAC, subs, STEALTH and more. Tracks over 600 targets. Two arcade games included. \$39 to SoftWar, 6307 Brambleton Rd., Richmond, VA 23234

TRY BEFORE YOU BUY: C64, 128, AMIGA. Games utilities, educ'n'l, classics, new releases. 100's of titles. Free brochure. Specify computer. RENT-A-DISC, Frederick Bldg. #221, Hunt'n, WV 25701 (304) 529-3232

FREE PUBLIC DOMAIN SOFTWARE

Request free catalog or send \$2 for sample disk & catalog (refundable). APPLE, C64-128 (specify) CALOKE IND., Box 18477, K.C., MO 64133

Quality **IBM SOFTWARE** from \$2 per disk. Games/WProc/DBases/Educ/Sprsh/Util/More. PD/Shareware-Latest Versions! Free Catalog. SOFSOURCE, Box 828, East Lansing, MI 48826 (517) 349-3560 CALL OR WRITE TODAY!

IBM & COMPATIBLE SHAREWARE DISTRIBUTOR

Over 350 in library—5/4" & 3 1/2" avail. Send #10 SASE for full catalog. T & Z Software, PO Box 780217-C, Sebastian, FL 32978-0217

FANTASTIC DAILY NUMBER FORECASTER!

Not a R/N Gen. Guaranteed! Str. Hits. C/64, APPL, MS/DOS, Atari. OH adds %5 ST. SASE for info. \$42.45 on disk. Prog. for LOTTO: Tracker, Picker, Wheeler, 4-Dig. Z-Way, P.O. Box 9017C, Canton, OH 44711

Cheap Software / IBM, PCjr, Compatibles. 5.25 or 3.5 disk. For catalog of diskettes available for education, games, business, etc. Write: Morning Star Industry, Box 3095, Ann Arbor, MI 48106

FREE SOFTWARE—BEST OF PUBLIC DOMAIN & shareware. Carefully selected and edited programs for I.B.M. Send S.A.S.E. for free catalog. C.C.S., Inc. Dept. C1, P.O. Box 312, Lafayette Hill, PA 19444

FREE CATALOG - OVER 1000 PUBLIC DOMAIN Programs of IBM PC and Compatibles. Buy or Rent. Low as \$1.00/disk. Write to Softshoppe, POB 709, Ann Arbor, MI 48106

64/128 PD SOFTWARE, GAMES, MUSIC, UTIL., Educ. & Hm/Bus. 5 Disk filled full \$15. 10 disk filled full \$25. D & V CompSoft P.O. Box 175, New Market, AL 35761.

80 programs for IBM PC

Games, quizzes, trivia, utilities, how to. DISK1-360K \$5; 720K \$6; Book-\$18. Zipfast, Box 12238, Lexington, KY 40581-2238

IBM SOFTWARE SALE—35 GAMES ONLY \$5

Sent on 3 disks with 16 page S/W catalog in 24 hours. Send \$5 to PACIFIC EXCHANGE 333 Cobalt Way, Suite 107, Sunnyvale, CA 94086 (CA residents add 7% sales tax).

FREE CATALOG OF DISCOUNT SOFTWARE.

Apple, Atari, Commodore, and IBM. WMJ Data Systems-C, 4 Butterfly Drive, Hauppauge, NY 11788. (516) 543-5252

C64/128 **FINEST PUBLIC DOMAIN PROGRAMS**. Pretested quality programs *Most \$1.50** On Disk *YOU pick the programs that YOU want!! Free diskful of programs with first order! For a list + description, send SASE to: JLH Co. Dept. H, Box 67021, Topeka, KS 66667

FREE IBM SOFTWARE *FREE*

5 1/4" AND 3 1/2" FORMATS
FREE CATALOG: AP-JP, INC., BOX 1155, W. BABYLON, NY 11704

HOME CONSTRUCTION COST ESTIMATOR.

EASY to use system that allows you to estimate the cost of home construction. Runs in 256 MS-DOS IBM compatible environments. Send \$39.95 CK/MO to: Traeger Associates, Inc. 206 S. Austin St., Sequin, TX 78155 800-999-7709. TX res. add 7.5% sales tax.

IBM PC PD/Shareware Programs, \$1 to \$1.50 per disk copy fee. 650+ disks available. Send \$1 for Directory Disk to MICKIR, AD-GAZ, 14210 Cornelia, Cypress, TX 77429

COMPUTE! Classified is a low-cost way to tell over 250,000 microcomputer owners about your product or service.

Rates: \$25 per line, minimum of four lines. Any or all of the first line set in capital letters at no charge. Add \$15 per line for boldface words, or \$50 for the entire ad set in boldface (any number of lines.) Inquire about display rates.

Terms: Prepayment is required. Check, money order, American Express, Visa, or MasterCard is accepted. Make checks payable to COMPUTE! Publications.

Form: Ads are subject to publisher's approval and must be either typed or legibly printed. One line equals 40 letters and spaces between words. Please underline words to be set in boldface.

General Information: Advertisers using post office box numbers in their ads must supply permanent address and telephone numbers. Ad will appear in next available issue after receipt.

Closing: 10th of the third month preceding cover date (e.g., June issue closes March 10th). Send order and remittance to: Kathleen Ingram, Classified Manager, COMPUTE!, P.O. Box 5406, Greensboro, NC 27403. To place an ad by phone, call Kathleen Ingram at (919) 275-9809.

Notice: COMPUTE! Publications cannot be responsible for offers or claims of advertisers, but will attempt to screen out misleading or questionable copy.

2 FREE DISKS!!

with every 6 purchased.

Disks Packed Full of Great Programs

NO Membership fee! NO Limit!

ARCADE1: BATTLEZONE, CROSSFIRE, SHOOTGALLERY
ARCADE2: BUSHIDO, NINJA, FROGGER, CHESS, MORE
ARCADE3: ASTEROIDS, SPACE INVADERS, PINBALL
ARCADE4: STARGATE, STRIKER, ZAXXON, ABM, MORE...
ARCADE5: PACKMAN COLLECTION, PCTENNIS, MORE!
ARCADE6: PARATROOPER, REDBARON, ROUND42
ARCADE7: GAMBLING, CARD GAMES, (11 GAMES)
ARCADE9: CRAPS, TEXAS POKER, WHEEL FORTUNE
ARCADE 10: GOLF-DAYTON OHIO SOUTH COURSE
ARCADE11: GEMINI TANK, HORSES, NUKE-NY, MORE!
ARCADE12: 1988 FORD DRIVING SIMULATOR
ARCADE13: PCDARTS, PHRASE CRAZE, RESCUE
ARCADE14: CONCENTRATION, WHEEL OF FORTUNE2
ARCADE15: DEVASTATE, FIREWRKS, HARDHAT OBERT
ARCADE16: DEFENDER, DRAGON, NUKE WAR, MORE!
ARCADE17: SCRABBLE, MONOPOLY, EXCELLENT
ARCADE18: COLLECTION OF OVER 40 BASIC GAMES.
ARCADE19: PCHESSES, LOOK AHEAD, MULTI LEVEL
BUSINESS2: E-Z FORMS (MAKE YOUR OWN FORMS)
BUSINESS4: AS-EASY-AS (LOTUS 123 CLONE, GREAT!)
BUSINESS6: FORM LETTERS(100+ FORM LETTERS)
BUSINESS8: COMPLETE OFFICE ACCOUNTING
BUSINESS9: NAMEPAL, THE BEST IN MAILING LABELS!
CHILDREN1: CLOCK GAME, HANGMAN, MOSAICS
TEACHTOT
CHILDREN2: ANIMALS, PRE-SCHOOL PRIMER 'AMY'
CHILDREN3: ALPHABET, MEMORY, FUNKEYS
CHILDREN4: WORD PROCESSOR FOR KIDS!!!
DATABASE1&1.1: PC FILE + v.2.0 (THE BEST!!)
EDUCATION1: SAT VOCABULARY BUILDER
EDUCATION2: FRENCH I & II, SPANISH I & II
EDUCATION3: GERMAN I&II, ITALIAN, HEBREW TUTORS
EDUCATION4: DELUXE TYPING TUTOR (GREAT!)
EDUCATION6: 15 MATH PROGRAMS FOR ALL AGES
EDUCATION7: IQ BUILDER, GEOGRAPHY, MUCH MORE

Order Toll Free
1-800-426-3061

EDUCATION10: BIBLE QUIZ, MULTI LEVELS OF PLAY
EDUCATION14: TIME CAPSULE (HISTORY)
EDUCATION18: COMPLETE ALGEBRA TUTOR&TRIVIA
EDUCATION16: WORLD FLAGS, TRAVELLER'S SPANISH
EDUCATION19: HIGH SCHOOL/COLLEGE PHYSICS
EDUCATION20: COMPLETE CHEMISTRY TUTOR (GREAT)
FINANCE2: FIN/PAK; CALC, MORTGAGES, PAYMTS, ETC.
FINANCE3: PC CHECKBOOK, DLX CHECKING ACCTS
GRAPHICS3: 2 BANNER PROGRAMS, POSTERS, MORE
GRAPHICS4: ALTAMIRA CAD SYS., POSTER MAKER, ...
GRAPHICS5: PC-PICTURE GRAPHICS, TURBO PAINT, ...
GRAPHICS9: FINGER PAINT PROGRAM, AQUARIUM
GRAPHICS12: DREAM HOUSE: HOUSE PLANNING
GRAPHICS13: EXTRA GRAPHICS FOR 'PRINTMASTER'
LEARNING1: DOS HELP (BEST DOS REFERENCE)
LEARNING2: DOS TUTOR (COMPLETE DOS TUTORIAL)
LEARNING3: BASIC TUTOR & BATCH FILES TUTOR
LEARNING4: HELP DOS (ADVANCED DOS TUTOR)
MONOGAMES1: FOOTBALL, VIETNAM, 11 MORE
MONOGAMES2: CROSSWORD, MEMORY, SLOT
MACHINE, MORE
MONOGAMES3: S.A.MERICAN TREK, CASTAWAY AD-
VENTURES
MONOGAMES5: SCRABBLE, MONOPOLY, GREAT!
MONOGAMES6: #s, PREDICTIONS, INSULTS 1 & 2
MONOGAMES7: TEXT ADVENTURES, 6 IN ALL!
MONOGAMES11: BASEBALL, THOUGHT FOR
DAY, DEPTH CHARGE
MONOGAMES12: PRANKS, JIVE, 747, MASTERMIND...
MONOGAMES13: 2 BASEBALL GAMES-GOOD GAMES!
MONOGAMES14: OVER 40 GAME!
MONOGAMES15: POEM COMPOSER,
WORD PROCESSOR1&1.1: PC WRITE 2.71 (THE BEST!)
WORD PROCESSOR5: GALAXY, USER EASY!
UTILITIES1: COLLECTION OF OUR BEST
UTILITIES7: RUN COLOR GAMES ON MONO MONITOR

5-1/4" Disks = \$4
3-1/2" Disks = \$5

Mastercard-Visa-C.O.D

IBM Compatible
Software

Paragon...pc software

Free disk offer Expires 1/30/89

ADVERTISEMENT

Flight notes

2E



ATARI 800/XL/XE/ST SOFTWARE-New Re-leases, Hits, Classics-ALL INTERESTS! Send \$1 (refundable) for 28-page catalog to: 25th Century, POB 8042, Hicksville, NY 11802

BEST IBM SHAREWARE & PD
All categories. Updated version. Free catalogs! OMNICON, 6161 El Cajon Blvd. #203, Dept. CA, San Diego, CA 92115

PCjr POWER!—Two disks full of software guaranteed to improve jr performance & compatibility. Send \$18 to jrNewsletter, Box 163-C, Southbury, CT 06488

PUB. DOMAIN SOFTWARE for C64, C128, Atari 8 bit, Atari ST, IBM. FREE catalog. Visa/MC BRE Software, 352 W Bedford, Ste 104, Fresno, CA 93711 (800)622-7942, (209)432-2159 in CA

QUALITY IBM SOFTWARE \$2/DISK. Games/Business/Education/WordProc and more. Free catalog. American Associates, Box 18A12, Dept. OC, Los Angeles, CA 90018

MISCELLANEOUS

Start a profitable business in spare time cleaning computers. No investment or experience required. Free Details. MAILMART 4020-C12 Wyalong Sac, CA 95826

BUSINESS OPPORTUNITIES

FREE INFORMATION. How to make money with computers. Computer Publishing Enterprises, Box 23478, Dept. C-12 San Diego, CA 92123

EDUCATION

FULLY APPROVED UNIVERSITY DEGREES!!
Economical home study for Bachelor's, Master's, PH.D., FULLY APPROVED by California State Department of Education, not accredited. Prestigious faculty counsels for independent study and life experience credits (5000 enrolled students, 400 faculty). FREE INFORMATION—Richard Crews, M.D. (Harvard), President, Columbia Pacific University, Dept. 3E2D 1415 Third Street, San Rafael CA 94901. Toll Free: (800)227-0119; California: (800)552-5522; or (415)459-1650

SUPPLIES

COLORED PAPER 9 1/2" x 11" CLEAN EDGE

BRITETONE PRISM PACK 6 COLORS 25 EACH-\$9.95
RED, YELLOW, GREEN, HOT PINK, BLUE GOLD
SOFTONE PRISM PACK 6 COLORS 25 EACH \$8.95
PINK, IVORY, CANARY, MINT, LILAC, LT. BLUE
BOTH PACKS FOR \$16.95 MC, VISA, COD + SHIPPING
THE EXPERTS, PO BOX 928, BRIGHTON, MI. 48116
1-800-322-2580 IN MICH 313-227-9401

HARDWARE

TRY LOCATOR • DOTS™
FOR EASY KEYBOARD OPERATION

SEND \$4.95
FOR TWO 6-PACKS

PRODIGY PRODUCTS CO.
P.O. BOX 18116, CLEVELAND, OHIO 44118-0116

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

✦ The success of **Stealth Mission** has really surprised us. Rather than develop product quickly for an increasingly cost-conscious consumer market, our engineering staff decided to spare no expense and create the ultimate simulation in terms of strategic depth and program polish. One example of **Stealth Mission's** strategic depth is the ability to choose your aircraft type. Your ability to fly either an F-19 Stealth fighter, the experimental forward-swept wing X-29, or a Navy F-14 Tomcat provides a first-hand perspective on the way mission challenges can vary depending on your stealth capabilities.

Stealth Mission's polish is like nothing you've ever experienced before. One much-appreciated new feature is the ability to pause aircraft motion while you adjust your strategies (such as weapon/target selection) or system settings. For fumble-fingered computer pilots like myself, this feature lets me concentrate more on my strategies rather than on perfecting my sensory-motor skills. Autopilot landing and airborne refueling systems eliminate much of the difficulties and frustrations of flying. **Stealth Mission** is unlike any other simulation I've ever flown. It's truly a gem. Enjoy!

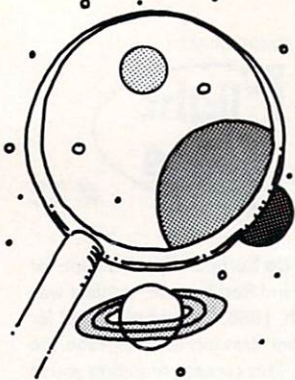
✦ **Its Back!** Not advertised since early 1984, the classic **Night Mission Pinball** will be back in production once again by the time you read this. Priced at only \$29.95, now everyone can afford to add this classic to their software collection. If you're a family person like myself, be prepared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

SubLOGIC Corporation
501 Kenyon Road
Champaign, IL 61820
TELEPHONE: (217) 359-8482
ORDER LINE: (800) 637-4983

Please address any feedback/correspondence regarding SubLOGIC products, operations, or this "Flight Notes" column to ATTN: Chairman's Office.

discoveries

DAVID STANTON



How to Pick Computer Gifts That Have Fun Factors Measured in Months, Not Hours

Finding the perfect gift takes infinite patience. Increasingly, the old standbys just don't make it. Forget clothes. "Candy-cane socks! Thank you, Uncle Dave. They're just what I needed." Don't be suckered in by those ribbon-wrapped ensembles the stores pile high in the center aisles, either. "Oh, pink ear muffs with matching mittens! Now I can wear a different color to each Dolphins game! Thank you."

I've learned to avoid buying toys, too. They cost too much and break too fast. Besides, only the most dedicated observer can keep up with changing fashion. By the time you figure out that Strawberry Shortcake means dolls and that Transformers have nothing to do with electronics, the holiday season has long since passed.

So, what then? If you're looking for something to please a computer-using friend or family member, if you want your gift to provide months of enjoyment rather than a few brief hours, if you believe that the best learning evolves from self-motivated investigation and experimentation, then consider the following list.

◆ **A printer.** Every home computer needs one for the mundane output of word processors and spreadsheets. Beyond that, though, some of the most exciting educational software requires a printer. How else can *Designasaurus* print giant dinosaur posters? How else can MECC's *Calendar Crafter* produce personalized calendars complete with your own graphics? How else can *Springboard Publisher* turn the family newsletter into an almost-professional publication?

True, printers cost plenty. Also true: you'll never regret the purchase of a quality graphics printer.

◆ **A modem and terminal software.** Few computer applications promise more fun than telecomputing. A modem provides direct access to hundreds of free computer bulletin boards. It puts a world of knowledge at your fingertips. It offers unlimited opportunities for making new friends.

Too expensive? Just about \$50 equips a Commodore 64 or 128 with a 300-baud modem and necessary software. One company recently offered a 300-baud modem for Apple IIc and Laser 128 computers for just \$29.95, including software. IBMs and compatibles, Amigas, Apple IIGS's, and other machines with built-in serial ports can select almost any of the popular external modems, many of which sell for under \$100 (cables and software may cost extra). More money buys higher transmission rates, autodial/autoanswer, greater Hayes compatibility, and

other sophisticated features for serious users.

◆ **A subscription to *COMPUTE!* or another good computer magazine.** If this sounds like a commercial, consider it instead a pitch for old-fashioned literacy.

◆ **Computer books.** Whatever the computer, whatever the recipient's level of knowledge, there are hundreds of fascinating books available. For specific titles, browse through the local bookstore or find a recent edition of *Books in Print*.

◆ **A new computer language.** High school students preparing for careers in engineering, computer science, or related fields often take Pascal. More and more introductory college courses teach Pascal rather than BASIC because it provides a better basis for the study of other advanced computer languages. The ability to run Pascal at home will give any student programmer an extra edge. *Turbo Pascal* (512K Macintosh and IBM), *Instant Pascal* (128K Apple II), *MCC Pascal* (Amiga)—all offer good value. For those who have been thinking about trying LOGO, this could be an excellent time to get started.

◆ **Software.** No computer buff ever has enough software. Creative types from age 5 on up will love designing and publishing signs, greeting cards, and stationery with Scholastic's *SuperPrint* (Apple II, \$49.95). Timeworks' *Desktop Publisher ST* (\$129.95) should keep Atari ST fans busy producing family newsletters. Mindplay's *Cotton Tales* (Apple/IBM, about \$49.00) encourages primary schoolers to experiment with word processing as they combine words and pictures to express themselves. *The Music Studio* (Apple IIGS/Amiga/Atari ST, \$79.95-\$99.95) allows aspiring composers to write songs and play them back with impressive results. And cold winter days pass quickly for those buried in an Infocom text adventure.

◆ **Membership in a local user's group.** New-found friends there will eagerly answer tough questions about hardware; user's groups also are a great source of public domain software.

How about more memory, a second disk drive, a box of floppy disks, a "gift certificate" redeemable for a couple hours of time on a national telecommunications network? Like every ten-year-old's Christmas list, this one could go on and on. But unlike many items on that list, these will continue giving for months, even years, to come. □

David Stanton can be contacted via CompuServe (72407,102) or by mail at P.O. Box 494, Bolivar, New York 14715.

"An exceptional value."

Tom Badgett, *PC Clones*

"I was impressed.
It wins the cost-effective award."

John Dvorak, *PC Magazine*

"This program has all the features and capabilities of money management programs costing 10 times as much."

Leonard Hyer, *PCM Magazine*

We appreciated those kind words. They helped make **MONEYCOUNTS® 4.0** one of today's most popular **accounting/money management programs** for home and business. But we couldn't leave well enough alone. So we're introducing new

MONEYCOUNTS® 5.0 ...an unbelievable buy at just \$29!

MONEYCOUNTS® 5.0 balances your checkbook... prepares your budget... manages your cash, checking, savings, credit cards... prints 5 types of financial statements including net worth...3 types of inquiry reports... general ledger, accountant's trial balance, and graphics. Its fast financial data base handles up to 999 accounts and 100,000 transactions a year.

MONEYCOUNTS® 5.0 is a CPA-designed money management/accounting system you can use for home or business. It's easy to use, requires no accounting knowledge, is menu-driven with on-line help, has a fast financial calculator, works with monochrome or color monitors, comes with a **printed manual** and is **not copy protected**.

SAME DAY SHIPPING. Order today and own **MONEYCOUNTS® 5.0** for only \$29! Add \$5 shipping/handling (outside North America, add \$10). Iowa residents please add 4% sales tax.



375 Collins Road NE
Cedar Rapids, IA 52402

MONEYCOUNTS® 5.0 now also...

- prints any type of pin-feed check and updates your records automatically
- estimates your 1988 income tax
- analyzes financing options, savings programs...computes interest rates, loan payments...prints amortization schedules
- manages mail lists—zip and alpha sorts—and prints labels and index cards
- provides password protection, fiscal year support, and pop-up notepad.



VISA, MASTERCARD & COD ORDERS CALL

1-800-223-6925

(In Canada, call 319/395-7300)



Dept. COM
375 Collins Road NE
Cedar Rapids, IA 52402

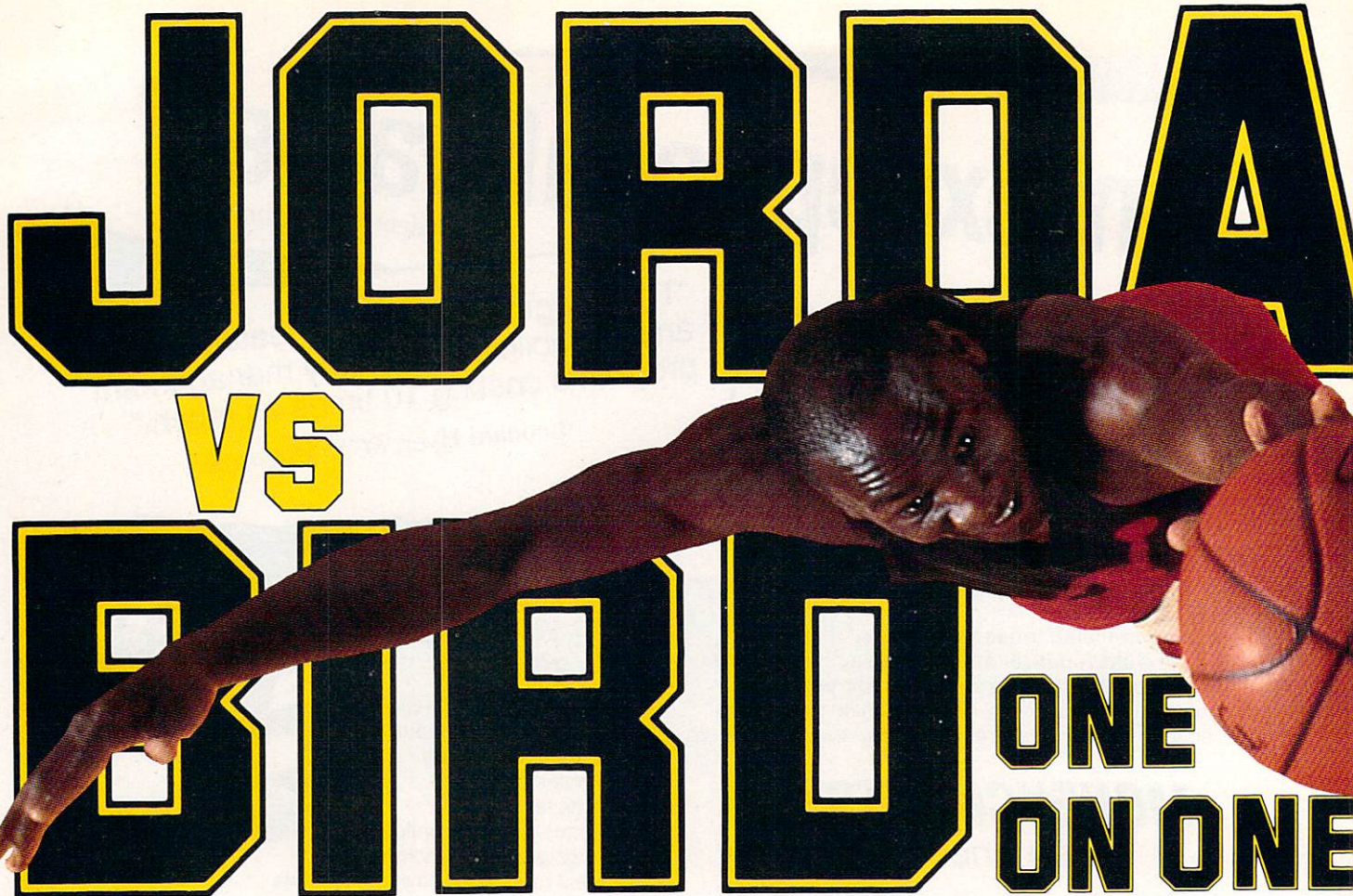
MONEYCOUNTS®
VERSION 5.0

\$29 + \$5 shipping

NAME _____
ADDRESS _____
CITY _____
STATE/ZIP _____ PHONE _____
CHECK MONEY ORDER VISA MASTERCARD
CARD # _____ EXP. DATE _____

No. of Copies	Product	Price Each	Total
	MONEYCOUNTS® 5.0 (Needs IBM or compatible computer, at least 256k memory, DOS 2.0 or more, two disk drives or hard disk)	\$ 29.00	
	Shipping & Handling	\$ 5.00	\$ 5.00
TOTAL AMOUNT			\$ _____

TOTAL AMOUNT



news & notes

Software Boom Keeps Booming

This just might be the best year ever for the personal computer software market. Retail sales grew by 51 percent during the first half of 1988, according to the Washington-based Software Publishers Association (SPA). Based on financial information provided by SPA members, the estimated sales of recreation, education, productivity, and languages/utilities software totaled \$1.82 billion in the first six months of the year.

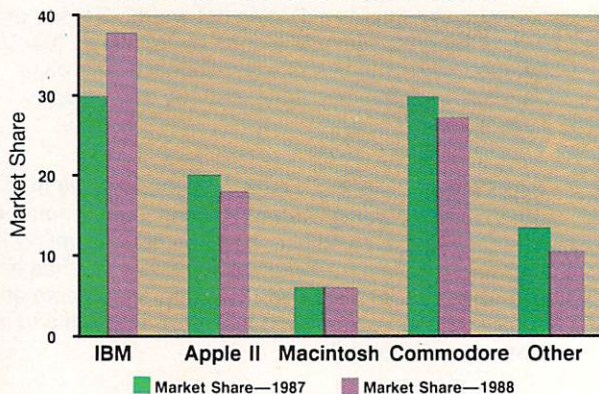
The weight of the recreational software market is shifting toward the MS-DOS platform and away from the Commodore 64/128. Sales figures for 1987's second quarter show Commodore with \$14.8 million in recreational soft-

ware retail sales, compared with \$13.3 million for IBM PC and compatible machines.

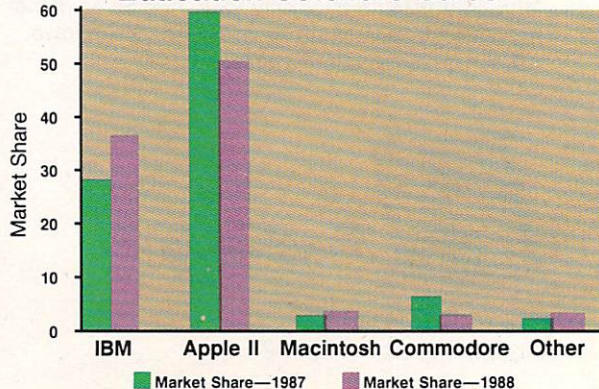
But figures for the second quarter of 1988 paint a different picture. Recreational software sales for the IBM PC and compatibles rose to \$22.1 million, easily outstripping Commodore's sales of \$13.8 million. A comparison of the second quarter of 1987 with the same period this year shows that recreational software sales for the Commodore fell 7.1 percent, while sales for the IBM PC and compatibles market skyrocketed, rising by 66.4 percent. Inexpensive PC clones have found their way into the home market, sparking the changing of the guard.

Overall recreational sales

Recreation Software Sales



Education Software Sales



N



Put yourself in their shoes.

Be Michael "The Slammer" Jordan or Larry "The Shooter" Bird. You decide who wins. Is it today's most exciting player, MVP Michael Jordan, or the Player of the Decade, Larry Bird?

Jordan and Bird: Software Designers

Michael wanted quickness, speed and air. Larry's fadeaway and sweetspots were critical. Power Jams for Michael, Larry's 3 point bombs. They

got all they wanted plus jab steps, pump fakes, shot blocks, steals, 360° dunks and more.

One On One is Three.

Jordan vs. Bird vs. You in three ultimate matchups—One On One, the Slam Dunk Competition and the 3 Point Shootout.



Designed by Garth Hitchens, Mark Madland, Michael Jordan and Larry Bird.

For IBM/Tandy, Commodore 64 and 128 computers. Visit your retailer or call 800-245-4525 from US or Canada. 8am to

5pm Pacific Standard Time. IBM is a registered trademark of International Business Machines, Tandy is a registered trademark of Tandy Corporation, and Commodore 64 and 128 is a registered trademark of Commodore Electronics Limited.



ELECTRONIC ARTS®



The Classic Confrontation: One On One. The crowd goes crazy as the Michael and Larry unload all their patented moves.

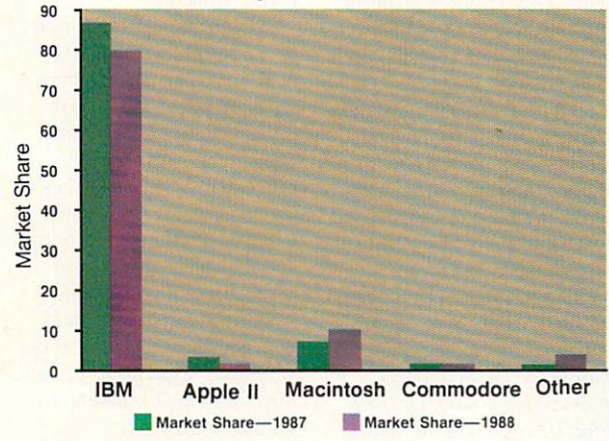


Arial Warfare: The Air Jordan Slam Dunk Contest. Up to 4 players challenge each other or Michael himself in a battle of Power Jams. Designed by Jordan.



Long Range Bombing: 3 Point Shootout. 25 shots in 60 seconds from 23' out. Don't blow the money ball. Larry's signature event.

Productivity Software Sales



for the Commodore 64/128 were up during the first half of 1988, however—by 15.5 percent—as compared with sales during the first half of 1987. The same time period saw a 60.2 percent rise in recreational software sales for IBM PC and compatible machines, a 20.3-percent increase for the Macintosh, a 10.9-percent climb for the Apple II, and a

3.1-percent growth rate for all other machines. During 1988's first half, nothing came close to matching PC-compatible software sales in the productivity area, which logged a staggering \$1.2 billion out of a total market of \$1.5 billion. Closest was the Macintosh, with \$178.6 million. Productivity software is the fastest-growing personal

computer application, up 59 percent over the first half of 1987. In fact, during the first half of 1988, software for the IBM PC and compatibles led sales in all but one of the four categories—education. In that market, Apple II software tallied \$33.7 million in retail sales for the period, with MS-DOS software sales reaching \$22.8 million. The two leaders were followed by the Commodore 64/128 at \$2.9 million, the Macintosh at \$2.5 million, and all other machines, which contributed \$1.9 million in sales to a total of \$63.8 million. A comparison of the first half of 1988 with the same period in 1987 shows that the

Macintosh continued to enjoy strong support from consumers. Total software sales for that line rose 130.5 percent during that period, making it the fastest-growing software-market segment. Sales for the Apple II dipped 1.7 percent, however. SPA's "Other" category, which includes the Amiga and Atari platforms, also posted a sharp gain during that same time period, up 310.3 percent in total software sales. The rise in software sales from \$1.2 billion in the first half of 1987 to \$1.8 billion for the like period this year indicates that the market is a long way from maturity, the SPA said.

— Peter Scisco ▸

FOR THOSE WHO
ALWAYS WANTED
TO SEE
THE WORLD...
BUT DIDN'T
SPECIFY
WHICH ONE.

Drop in on outer space and explore an eerie moonscape of monoliths and chasms. You're drilling to release explosive vapors on a space station where nothing is quite what it seems. Walls disappear, columns are really elevators, pyramids generate energy:

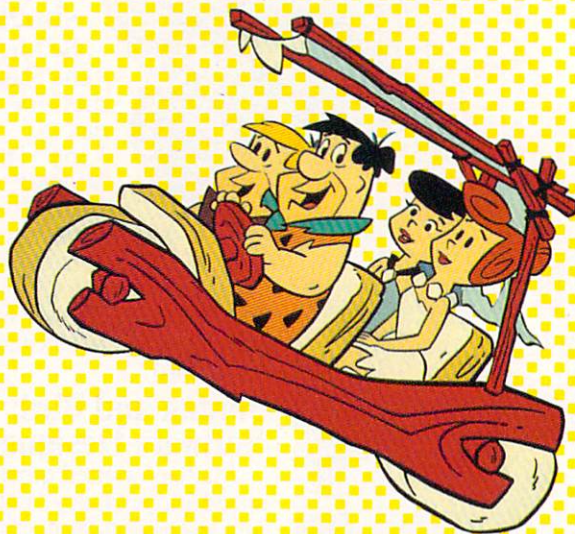


it's a complex world with rules all its own...And you'll need all the ingenuity you can muster to master its secrets.

Amiga, Atari ST, Commodore 64/128, IBM & compatibles.
© 1988 Epyx, Inc. Screen from IBM. Game program licensed from Incentive Software Ltd. (U.K.) © 1987 Incentive Software Ltd.



EPYX



Yabba Dabba Doo!

How many Baby Boomers does it take to screw in a light bulb? Three—one to screw in the bulb, one to write the film script, and one to turn it into a computer game.

With Baby Boomers making up a large part of the population—and a major slice of the economic pie—the entertainment industry has recycled just about every one of our collective experiences from the 1950s and 1960s. The industry has revived many of the personalities from television's past for recent big-budget movies (*Superman*, *Dragnet*, *Star Trek*, *The Untouchables*, and *Popeye*) and computer games (*Road Runner*, *The Three Stooges*, *The Honey-mooners*, and, once again, *Star Trek*).

Maybe Fred asked for too much of an advance, or George, too big a percentage. Whatever the reason for the delay, they've finally signed the contract. As a result, MicroIllusions has announced two new computer games with some very familiar faces—*Flintstones* (MS/DOS, Com-

modore 64/128, and Apple IIgs) and *Jetsons* (Macintosh II and Amiga).

Unfortunately, they won't be ready until well after the New Year. The programmers have just begun to set up the initial graphics routines and experiment with the basic movements. Only after they've gotten a feel for the graphics will they develop the story line and the object of the game. "Sometimes if you pick the story first, you can get stuck with graphics that don't work very well," explains Bob Shaw, director of quality assurance for MicroIllusions.

One thing is certain: Each story will stay as close to the original series as possible, with the kind of plot you've come to expect in game retreads of pop-culture icons.

We may know the theme songs to both "The Jetsons" and "The Flintstones," but we'll have to wait to see if Cosmo G. Spacely and a digitized *Yabba-Dabba-Do* will succeed on the Baby Boomers' newest toy—the computer.

— David English □



THE ORANGE TURBO XT

The NEW IBM Compatible XT ONLY \$699.00

STANDARD FEATURES

High-Speed 10 MHz Processor
 102-Key Enhanced Keyboard
 4.77/10MHz Keyboard Switchable Speed
 Serial and Parallel Game Port
 Math Co-Processor Socket
 Composite and TTL Graphics Card
 (Mono/Color Switchable)
 Eight Expansion Slots
 360K Floppy DS/DD
 150-Watt Power Supply

MS-DOS 3.3 and GW-Basic
Real Time Clock
640 K RAM
Memory Expands to 1664 K
on Motherboard
100% IBM Compatible
One Year Warranty
 Monitor Optional



OPTIONS AVAILABLE

Second Floppy Disk Drive	\$ 85.00
720K 3 1/2" Floppy Drive	\$ 95.00
20-Meg Hard Drive w/cont.	\$295.00
30-Meg Hard Drive w/cont.	\$325.00
40-Meg Hard Drive w/cont.	\$495.00
High Resolution 12" Mono Monitor	\$ 99.00
RGB 14" Color Monitor	\$299.00
EGA 14" High Res. RGB	\$410.00
Other models, accessories, and parts.....	CALL

ORANGE AT 286

\$1399.00

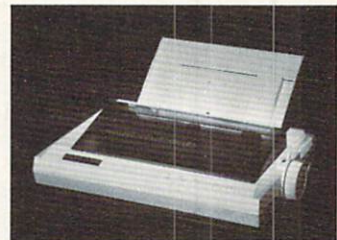


Phoenix Bios
 80286 CPU
 6/10/12 MHz Speed
 Software and Hardware Switchable
 512K RAM expandable to 4MB
 80287 math coprocessor socket
 Real Time Clock and Calendar
 101-key Enhanced Keyboard
 200-Watt Power Supply
 Key lock, Turbo, Power & Hard Disk LEDs
 Reset & Turbo buttons on face
 Western Digital HD/FD Controller
 1.2 Meg Floppy Drive
 100% Network Compatible
 MS-DOS & OS/2 Compatible
 Technical Manual. One-Year Warranty
 Runs all popular Software
 Monitor Optional

PRINTER

Seikosha SP - 1200 AI \$249.00

Dot Matrix
 Near Letter Quality
 120 Characters Per Sec.
 IBM Compatible
 Pica and Elite Type
 Full Graphics Capability
 Tractor and Friction Feed
 Other Models Available



ORDERING INFORMATION

ORDERS ONLY 1-800-552-5663

Customer Service 1-407-588-2936
 Minimum order \$50.00
 Add 3% for shipping and handling
 Florida residents add 6% sales tax



Computers Buy Mail
 109 East Coast Ave., Lantana, FL 33462

Prices and product availability subject to change without notice.



lezzitations

**Ataris Are
Ancient,
Apples Are
Overpriced,
IBMs Are
Boring, Macs
Are Tiny, and
Amigas Are
Slow. Who'd I
Forget?**

continued from page 104

That said, I'm sure I'll get a call from Jack or Sam Tramiel tomorrow reminding me that STs are selling like hotcakes in Europe. OK, if you plan on moving to Europe in the next couple of months, go ahead and buy an ST. Want to dare me to say something nice about the ST? I think the ST is a pretty good machine for anyone interested in MIDI-based music software. Just ignore the advice of those who recommend dropping your ST onto your desk from a height of six inches every so often to reseal the VLSI chips on the motherboard.

Now that the Atari fans are busy loading their word processors with double-aught buckshot, let's turn our attention to the hallowed halls of Cupertino, California. Ever wonder why computer dealers love Apple computers? Because the high list prices maintained by that friendly multicolored fruit vendor translate into consumers having to peel off some serious green. For my money, not all of the fruit offered is particularly ripe. The Apple IIc's most notable quality is that it's a wonderfully slick repackaging of a bulky, late-seventies architecture, with sound and graphics capabilities that are decidedly mediocre. Due to an aggressive educational-marketing arm, the Apple II has become ubiquitous within the American primary and secondary school system. Even I'll buy the "Let's get a II for the kids 'cuz that's what they use at school" argument if you stick with a modest IIc Plus system that can be had for under a grand.

I draw the line when it comes to the glitzy Apple IIGs. The IIGs has seductive color and sound capabilities, but there's no excuse for Apple's pricing a color IIGs system at almost \$3,000.

If you've got that much cash to blow and want to immerse yourself in the Apple gestalt, spend the money on a Macintosh Plus or SE, or take out a third mortgage on your home and pick up a Macintosh II. While the Mac excels in graphics-oriented applications, I find its smallish screen and lack of smooth character scrolling rather irksome. The Macintosh II mitigates these problems somewhat at a huge increase in cost. The additional expense is often justified with prolific tomes in praise of desktop publishing, CAD/CAM, and animation on the Macintosh II. Such talk is primarily smoke . . . it's a well-established fact that most Macintosh II owners spent the \$8,000 so they could play *Crystal Quest* in color.

What does IBM stand for besides

Mom, apple pie, and an embarrassing number of antitrust litigations throughout the history of computing? Incredibly Boring Machine. About as exciting as the average election year debate. Does the fact that I use my IBM AT clone more often than the rest of my machines make me a hypocrite? Most likely, but it's easy to rationalize the clash between my gut reaction to the IBM way of doing things and reality. If you're going to spend most of your time dealing with text, a PC or PC compatible equipped with a monochrome TTL or color EGA monitor is a pleasant system to look at for extended periods of time. The primary purpose of the sound and graphics capabilities of the PC was to make the Apple II look good. I don't know about you, but the wretched blues and purples of the CGA graphics standard usually send me reaching for an airsickness bag. The newer EGA and VGA standards are big improvements over the original but are still too slow to yield high-quality animation. Unless you invite the gang from "M*A*S*H" over for lunch every other Thursday, forget about PS/2s, OS/2, and Timbuk/2, and opt for a reasonably priced compatible.

The Commodore 64 is an anomaly—a machine that's managed to survive by sheer force of numbers and brute programming skill. Commodore 64s used to be favorites with amateur and professional chefs since they could compute and cook on top of their 1500-series disk drives at the same time. Both the 64 and the Commodore 128 have moderately respectable color and sound prowess, but once again, you're paying a lot of modern-day dollars for a fancy package containing ancient 8-bit technology that's slowly spiraling downward toward computing antiquity.

I've owned three Amigas over the course of as many years. Why? Every time I got frustrated with the machine's shortcomings and sent my Amiga packing, I started getting wistful about the good times we'd had. The machine's graphics-and-sound capabilities are truly prodigious, but the sloth of AmigaDOS, its disk operating system, is more ponderous than a John Sculley keynote speech. If the machine had a high-resolution mode that didn't flicker like a banshee, I'd probably use it more often than I presently do for word processing and telecommunications. Uh-oh, I'm running out of room, so let's go for maximum insult in the least amount of space: You know . . . the Amiga is a GREAT game machine. □

CELEBRATING
OUR
20TH
ANNIVERSARY
1968-1988

MONTGOMERY GRANT

COMPUTE 12/88

Retail Outlet: Penn Station, Main Concourse
(Beneath Madison Square Garden) NYC, N.Y. 10001
Store Hours: Mon-Fri 8:30-8/Sat-Sun 9:30-7

**OUTSIDE USA---CALL
(718)692-0071**
FOR CUSTOMER SERVICE
Call Mon-Fri: 9:30-4:30
(718)692-1148

FOR ORDERS & INFORMATION CALL TOLL FREE

1-800-759-6565

OR WRITE TO:
Montgomery Grant Mail Order Dept.
P.O. Box 58 Brooklyn, NY 11230
FAX NO. 7186923372
TELEX 422132 MGRANT

EXTENDED HOLIDAY SEASON ORDER HOURS: Monday - Friday, 8:30 - 8 / Saturday & Sunday, 9:30 - 7 (EST)

NO SURCHARGE FOR CREDIT CARD ORDERS/WE INVITE CORPORATE & EDUCATIONAL CUSTOMERS/CORPORATE LEASING AVAILABLE



Commodore AMIGA 500
IN STOCK-CALL FOR LOW PRICE!
AMIGA 500 w/ 1084S.....\$829
AMIGA 500 w/ 1084S/1010.....\$1029

AMIGA 2000 IN STOCK
ALL PERIPHERALS IN STOCK

A-501 - 512K EXPANSION • A-1010 3.5" FLOPPY DRIVE • A-2088 BRIDGE CARD A-1084S RGB COLOR MONITOR • A-1680 MODEM • A-2090 HARD DRIVE CONTROLLER FOR A-2000 • A-2010 3.5" INTERNAL DISK DRIVE FOR A-2000 • A-2052 2MB EXPANSION FOR A-2000

Supra 20MB Hard Drive for A-500.....\$699

AMIGA 2000 IBM XT COMPATIBLE RGB COLOR PACKAGE

A-2000 Computer w/ Keyboard
1MB Exp. to 9MB
Built-In 3.5" D. Dr.
RGB Color Monitor
2088 IBM Compat. Bridge Card w/ 5.25" Floppy Disk Drive

\$2049

AMIGA 500 RGB COLOR PKG. \$759

AMSTRAD PPC \$799
640K SD LAPTOP

640K • 720K Floppy Drive
Built-in 2400 Baud Modem

AMSTRAD PPC-640 w/ 2 Floppy Drives.....\$699
SPARK E1.....\$1059
NEC MULTISPEED HD.....\$2179
NEC MULTISPEED ELI.....\$1399
ZENITH 184 SUPERSPORTS w/ 2 Floppy Drive.....\$1469
ZENITH 184-2 SUPERSPORTS 20MB.....\$2199
ZENITH 286 w/ 20MB.....\$3299
ZENITH 286 w/ 40MB.....\$3999
TOSHIBA 1000.....\$729
TOSHIBA 1200H.....\$2199
TOSHIBA 1200 F.....\$1549
TOSHIBA 3100/20.....\$2929
TOSHIBA 3200.....\$3695
TOSHIBA 5100.....\$4699
TOSHIBA 1200 HB.....\$2449

APPLE IIC w/12" monitor \$529
APPLE IIE 5.25" Disk Drive & 12" Monitor \$749

Apple IIGS Computer 3.5" Disk Drive, Apple RGB Color Monitor
Package of 10 Diskettes All Cables & Adapters

MAC Plus Computer Package.....\$1279
IMAGEWRITER II Printer.....\$449
MAC SE Computer w/ Dual Drive.....\$2299
MAC SE Computer w/ 20MB Apple Hard Drive.....\$2049
Apple Mac II w/ Keyboard.....\$3569

SANYO MBC 17 PLUS SERIES IBM AT COMPATIBLE

512K Expandable to 1MB • 6-10 MHz
1.2MB Floppy Drive • 80286 Processor
Video Card • \$1029

w/ 20MB Hard Drive.....\$1248
w/ 30MB Hard Drive.....\$1299 w/ 40MB Hard Drive.....\$1399



COMPUTER PACKAGES

#2 C/128-D COMPLETE PKG.

C/128-D COMPUTER W/BUILT-IN DISK DRIVE
• COMPUTER PRINTER
• 12" MONITOR

\$519

SPECIAL!
C-128/D DELUXE PACKAGE
C-128 COMPUTER W/ BUILT-IN DISK-1902 RGB COLOR MONITOR
• COMMODORE COLOR PRINTER

\$629



COMPUTER PACKAGES

#3 COMPLETE PACKAGE

COMMODORE C-64C COMPUTER
COMPUTER 1541C DISK DRIVE
COMPUTER PRINTER
12" MONITOR
GEOS SOFTWARE PROGRAM

\$349

#4 COLOR PACKAGE

COMMODORE C-64C COMPUTER
COMMODORE 1541 C DISK DRIVE
COMPUTER PRINTER
COLOR MONITOR
GEOS SOFTWARE PROGRAM

\$478

COMMODORE COLT PACKAGE

COMMODORE COLT COMPUTER 640K 4.77-7.16MHz 2 Floppy Disk Drives 12" High Resolution Mono Monitor All Hook-up Cables & Adapter Box of 10 Diskettes

\$719

AMSTRAD NEW PC1640

Keyboard • 640 K RAM
TurboSpeed • One 360K Drive • Mono Monitor • FREE Mouse & Software

\$649 w/ 20MB H.D. \$699

PRINTERS

OKIDATA 120.....\$189.95
OKIDATA 150.....\$219.95
OKIMATE 20.....\$119.95
EPSON FX-850.....\$339.95
EPSON FX-1050.....\$489.95
EPSON LX-500.....\$315.95
EPSON LX-850.....\$509.95
EPSON LX-1050.....\$709.95
EPSON EX-800.....\$419.95
EPSON LX-800.....\$199.95
STAR NX-1000.....\$169.95
STAR NX-1000C.....\$169.95
STAR NX-1000.....\$219.95
RAINBOW-1000.....\$224.95
STAR NX-2400.....\$304.95
STAR NX-15.....\$299.95
STAR NB-2410.....\$409.95
STAR NB-2415.....\$525.95
PANASONIC1080-II.....\$159.95
PANASONIC1091-II.....\$189.95

Commodore C-64C
With Geos Software \$139.95

NEW C-128D w/ Built in Disk Drive \$415

#1764 EXPANSION MODULE.....\$114.95
XETEC S. GRAPHIX JR. INTERFACE.....\$29.95
XETEC S. GRAPHIX SR. INTERFACE.....\$49.95
XETEC SUPER GRAPHIX GOLD.....\$79.95
C-128 POWER SUPPLY.....\$59.95
C64/C64-C POWER SUPPLY.....\$29.95
C-1660 MODEM.....\$19.95
1670 MODEM.....\$66.95
COMMODORE MOUSE.....\$26.88

XETEC LT. KERNAL 20MB HARD DRIVES FOR:
C64.....\$749.95
C-128.....\$799.95

XETEC 40MB HARD DRIVE FOR:
64/128/128D.....\$1169

COMMODORE DISK DRIVES

C-1541/C \$149.95
C-1571 \$229.95
C-1581 \$184.95
C-1541II \$154.95

MONITORS

1702 COLOR.....\$169.95
1084S COLOR.....\$299.95

THOMSON HI-RES RGB COLOR MONITOR.....\$299.95

MAGNAVOX RGB 13" COLOR MONITOR.....\$198.95

COMMODORE PRINTERS

DPS-1101 DAISY WHEEL PRINTER.....\$149
MPS-1250 PRINTER.....\$219

LASER XT PACKAGE

IBM XT Compatible • 4.77-8 MHz • 360K Floppy Drive • Serial & Parallel Ports • Game Port/RGB Port • 12" Monitor

\$489

SEAGATE 20,30,40,60,80 MB HARD DRIVES IN STOCK

HEWLETT LASERJET \$1629

PACKARD SERIES II

PANASONIC1092L.....\$289.95
PANASONIC KXP-1524.....\$499.95
PANASONIC KXP-4450 Laser.....\$1549.95
KXP-1525.....\$409.95
NEC P-200.....\$339.95
TOSHIBA 321-SL.....\$449.95
IBM Proprietary.....\$369.95
HP DESKJET.....\$689.95
DICQNIK 150.....\$309.95

MONITORS

MAGNAVOX 13" RGB Monitor.....\$199.95
MAGNAVOX EGA Monitor.....\$339.95
EGA Card.....\$459.95
MAGNAVOX EGA Monitor & EGA Card.....\$449.95
MAGNAVOX VGA Monitor.....\$449.95
MAGNAVOX VGA Card.....\$669.95

IBM PERSONAL SYSTEM 2

MODEL 50
640 K RAM • 1.4MB Floppy Drive • 20 MB Hard Drive

\$2499

Monitor Optional
Model 50w/30MB Hard Drive.....\$2649

IBM XT Hard Drive Package

IBM XT Computer • IBM Keyboard • 256K RAM • Expandable to 640K • 360K Disk Drive • 20MB Hard Drive Package of 10 Diskettes

\$1199 (Monitor Optional)

IBM XT w/2 Floppy Drives.....\$999
Amtech 5.25" 360K External Drive for PS II/30.....\$169.95
Pacific Rim 5.25" 1.2MB External Drive for PS II/50,60,70,80.....\$259
PS II Model 30 w/ 720K Floppy Drive & 20MB IBM Hard Drive.....\$1699
Personal System II Model 30.....\$1299

IBM PERSONAL SYSTEM MONITORS

8503 Mono.....\$249 8512 Color.....\$449 8513.....\$559

EPSON EQUITY 1+ IBM PC/XT COMPATIBLE PKG.

640K RAM w/Clock/Calendar 4.77-10MHz 1 360K Drive Keyboard Serial & Parallel Ports 12" High Resolution Monitor Box of 10 Disks

\$769

Same Package with:
20MB Hard Drive.....\$1029 30MB Hard Drive.....\$1079 2 360K Drives.....\$849

EPSON EQUITY II+ IBM AT COMPAT. HARD DRIVE PKG.

Keyboard: 640K RAM 80286 Microprocessor 1.2MB Floppy Drive 20MB Hard Drive \$1399 Mono Monitor

Same Package with:
30MB Hard Drive.....\$1449 40MB Hard Drive.....\$1549

WE CAN RECONFIGURE ANY OF OUR COMPUTER PACKAGES TO YOUR SPECIFICATIONS.

Call for info. We Carry Modems, Color Monitors, Drives, Cards & All Other Accessories For Your Computer.

VENDEX HEADSTART IBM PC/XT Compatible

4.77-10MHz Dual Floppy Drives 7 Expansion Slots 512K Expandable to 768K Parallel & Serial Ports Mouse Available in Color or Mono System Over \$1000 Worth of Software - NO CHARGE!

Mono System \$799 Color System \$949

LEADING EDGE MODEL D2 IBM AT COMPATIBLE 20 MB HARD DRIVE PACKAGE

Keyboard • 1.2 MB Floppy Drive • 20 MB Hard Drive • 12" Monitor

\$1399

SAME w/30 MB HARD DRIVE.....\$1449
SAME w/40 MB HARD DRIVE.....\$1549

LEADING EDGE MODEL D IBM XT COMPATIBLE PKG.

512 K RAM Computer • Keyboard • 360K Floppy Drive • 4.77-7.16 MHz • 12" Monitor • 8088 2 Processor

\$689

SAME w/TWO 360K FLOPPIES.....\$769
SAME w/20 MB HARD DRIVE.....\$949
SAME w/30 MB HARD DRIVE.....\$999
SAME w/40 MB HARD DRIVE.....\$1069

Accepted: Discover, American Express, MasterCard, Visa, Amex, Diner's Club, Carte Blanche, Green Card, C.O.D. (hand approved P.O. accepted). No additional surcharge for credit card orders. Non-certified checks must wait 4-6 weeks for clearance. Please add 5% for shipping and handling. APO/FPO addresses add 15% for shipping and handling. All APO/FPO are shipped first class priority air. N.Y. residents add applicable sales tax. Prices subject to change without notice. Not responsible for typographical errors. Return of defective merchandise must have prior return authorization number or returns will not be accepted. IBM PC/XT AT are registered trademarks of International Business Machines Corp. All orders can be shipped Air Express. Call for details. For your protection we check for credit card theft. NYC: DC4802233

RUSH SERVICE AVAILABLE-CALL FOR DETAILS

Levitations

ARLAN LEVITAN



I Let Go of Reason and Impartiality to Take a Poke at Every Home Computer

Well, sports fans, it's 3:00 a.m. and yours truly's back is up against the editorial wall once again. I'm not going to say that a profound lack of sleep and several gallons of high-test Colombian java are affecting my perceptions, but I just finished a remarkably revealing 30-minute discussion with the characters on my Rocky and Bullwinkle coffee cup about the future of OS/2. To make matters worse, my editor has warned me not to even *think* about mentioning a trade show this month. Pretty nervy, considering that he was berating me over the phone from AppleFest out in San Francisco. Afficionados of show hijinx and general misbehavior will have to stay tuned until early 1989, when we'll cover a trifecta of trade-show excess encompassing the winter COMDEX, Consumer Electronics, and MacWorld Expo shows. Included will be detailed instructions on how to convince your mate and the IRS that a Lamborghini Countach was the only rental car available.

The winter holiday season is approaching and lots of folks are contemplating giving or getting a new computer system as a gift. I'm a firm believer in looking gift horses in the mouth to check for nasty cavities. Since my integrity and parental lineage haven't been questioned for at least a couple of weeks, I might as well publicly offer up my inconsiderate opinion on today's most popular microcomputers. Nobody has specifically asked for or, for that matter, is likely to be swayed by my views, but since it's too close to deadline to get me to rewrite this, I can probably get away with it.

COMPUTE! is unique in that it's one of only a handful of magazines that are not machine- or operating system-specific. It's been my experience that columns in publications dedicated to a single architecture are often rife with an evangelical zeal, one that runs the gamut from overt smugness to all-out hellfire and brimstone in defense of keeping the true faith. Discussions of the relative merits of a given brand of personal computer often encroach upon matters of personal faith and so often result in endless, pointless holy wars between the adherents of different computing camps.

Thus, one danger of critiquing computers is that any criticism, however well meant, is bound to offend avid fans of the machine in question. Since people tend to "adopt" computers that fit their personal view of self, carping about a machine's shortcomings generally scores the same points as telling proud parents that their kid

is ugly. Comparing and contrasting the virtues of two machines is a process fraught with even greater peril. A friend of mine who wrote a critique that stacked the Amiga 1000 and Atari ST against each other received a flurry of Neanderthal correspondence, most of which glowed with the warmth of an Orc death threat.

Like *COMPUTE!*, I'm as close to a nonpartisan microcomputer user as one can get. I've owned just about every popular personal microcomputer of the last ten years at one time or another and have even read a couple of pages of the owner's manual of one or two of them. That makes me as much an expert as the average computer salesperson, so I'm tired of being reasonable and impartial. How about a concerted effort to offend just about everybody—just to prove that I can be as annoying as the next guy? You'll find a fill-in-the-blank form letter suitable for demanding my immediate dismissal and/or dismemberment inserted elsewhere in this issue.

The Atari 400 and 800 are now considered remnants of a lost civilization, but there are still a lot of Atari XL- and XE-series machines knocking around in the shadowy corners of many retail and mail-order outlets. While they're usually attractively priced, save your money unless someone wants to virtually give you a system for free. In the early 1980s, I was one of the biggest boosters of Atari 8-bit machines. The Atari 800 was a computer whose operating system and graphics capabilities were years ahead of its time. Unfortunately, the machine was hobbled by a lack of expandability, incredibly slow disk drives, and an ever-changing marketing organization that brought new meaning to the term *kamikaze*. My trusty old 48K Atari 800 was built like a tank and is still alive and kicking, but has become the machine that my two-year-old pounds on.

The Atari ST, brought to you by the Flying Tramiel Family, bolted quickly out the gate when it was first introduced, but it's beginning to fade in the stretch. The 1040ST seemed like a real bargain at the time, but the introduction of cheap PC clones and the Amiga 500 put a permanent crimp in the ST market. A lot of people jumped ship after tiring of Atari's irritating habit of announcing vapor products and prices. The sad truth is that many software houses have scaled back their plans for ST products due to slow ST sales and rampant ST software piracy.

continued on page 102

SAVE UP TO 61% ON THE PERFECT HOLIDAY GIFT!

Here's something special for everyone on your gift list. Send **COMPUTE!** to the home computer user or **COMPUTE!'s GAZETTE** to the Commodore user—and save up to 49%. Your first gift subscription costs just \$24. And each additional subscription costs only \$18. Or send **COMPUTE!'s PC**—the magazine complete with disk. You pay just \$39.95 for your first subscription, only \$29.95 for each additional subscription...a savings of up to 61% off the newsstand rate. Act today and save!

Return this card — or for faster service call
1-800-876-GIFT



My name is _____ Please print Apt.# _____

My address is _____

City _____

State _____ Zip _____

Send gifts of **COMPUTE!** and/or **COMPUTE!'s GAZETTE** and/or
 COMPUTE!'s PC with 3.5" disk or 5.25" disk to:

1 Name _____

Address _____ Apt.# _____

City _____

State _____ Zip _____

Gift cards will be sent to announce your special gift.

Send gifts of **COMPUTE!** and/or **COMPUTE!'s GAZETTE** and/or
 COMPUTE!'s PC with 3.5" disk or 5.25" disk to:

2 Name _____

Address _____ Apt.# _____

City _____

State _____ Zip _____

Use separate sheet for additional subscriptions, if necessary.

- Start or renew my own subscription.
- I am enclosing \$ _____ for _____ subscriptions to
 COMPUTE! or **COMPUTE!'s GAZETTE**
- I am enclosing \$ _____ for _____ subscriptions to
 COMPUTE!'s PC.
- Bill me after the holidays.

The basic subscription rate for **COMPUTE!'s PC** is \$59.95

JDCS55



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS

PERMIT NO. 7478

DES MOINES, IA

POSTAGE WILL BE PAID BY ADDRESSEE



COMPUTE!

P.O. Box 10955
Des Moines, IA 50347-0955



UP TO **49% OFF**
100% HOLIDAY COMPATIBLE!

You can send holiday cheer all year long—and enjoy huge savings when you send a holiday gift subscription to COMPUTE! Your first gift subscription costs only \$24. And each additional subscription costs only \$18. You save up to 49% off the cover price. So give COMPUTE! It's guaranteed to be perfectly compatible with all the home computer users on your holiday list.

Return this card — or for faster service call
1-800-876-GIFT



My name is _____
Please print

My address is _____ Apt.# _____

City _____

State _____ Zip _____

Send gifts of COMPUTE! to:

1 Name _____

Address _____ Apt.# _____

City _____

State _____ Zip _____

Gift cards will be sent to announce your special gift.

2 Name _____

Address _____ Apt.# _____

City _____

State _____ Zip _____

Use separate sheet for additional subscriptions, if necessary.

- Start or renew my own subscription.
- I am enclosing \$_____ for _____ subscriptions.
- Bill me after the holidays.

YOUR FIRST GIFT SUBSCRIPTION COSTS JUST \$24
EACH ADDITIONAL SUBSCRIPTION COSTS JUST \$18

JDCS30



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

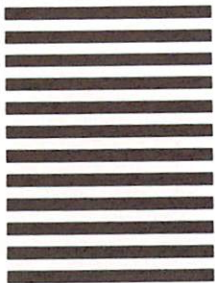
BUSINESS REPLY MAIL

FIRST CLASS

PERMIT NO. 7478

DES MOINES, IA

POSTAGE WILL BE PAID BY ADDRESSEE



COMPUTE!

P.O. Box 10955
Des Moines, IA 50347-0955



COMPUTE!

THE LEADING MAGAZINE OF COMPUTING

Subscribe now and receive COMPUTE! for 12 months at 32% OFF—or 24 months at the low rate of 36% OFF the \$2.95 cover price.



Term	Cover Price	Your Price	You Save
12 MONTHS	\$35.40	\$24.00	\$11.40
24 MONTHS	\$70.80	\$45.00	\$25.80



Check one: 1 Year (12 issues – \$24.00) 2 Years (24 issues – \$45.00)

FOR FASTER
SERVICE CALL:
1-800-727-6937
TOLL FREE

Mr./Mrs./Ms. (circle one) (please print)

Street

Apt. No.

City

State

Zip

Check one:

- Payment enclosed
 Please bill me later

Canada & Foreign add \$6 per year.

JDCS14



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

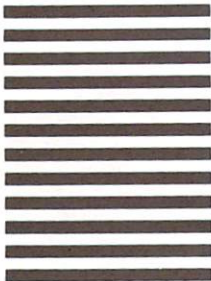
BUSINESS REPLY MAIL

FIRST CLASS

PERMIT NO. 7478

DES MOINES, IA

POSTAGE WILL BE PAID BY ADDRESSEE



COMPUTE!

P.O. Box 10955
Des Moines, IA 50347-0955



COMPUTER'S DEMO DISK SPECIAL!

See Our 2-Page
Ad in This Issue.

Yes!

I want to preview some of the latest software available from the best commercial software houses. Send me the **Demo Disk Pack** checked below. With each **Demo Disk Pack** I'll also receive a bonus sampler disk of programs from COMPUTE! Publications, complete and ready to run.

- Commodore 64/128 Demo Disk Pack (\$9.95 each)
- 5¼-inch IBM PC-/MS-DOS Demo Disk Pack (\$9.95 each)
- 3½-inch IBM PC-/MS-DOS Demo Disk Pack (\$15.95 each)

I've ordered _____ **Demo Disk Packs** and have enclosed \$9.95 (\$15.95 for 3½-inch IBM version) for each.



Name _____
Address _____
City _____ State _____ Zip _____

* New York residents add 8¼-percent sales tax. North Carolina residents add 5-percent sales tax. All orders must be paid in U.S. funds by a check drawn on a U.S. bank. Sorry, no credit card orders accepted.

Please allow 6-8 weeks for delivery.
Offer expires January 31, 1989.

Amount _____
Sales tax* _____
Add \$2.00 shipping and handling for each Demo Disk Pack ordered
Total _____



Sampler

Software

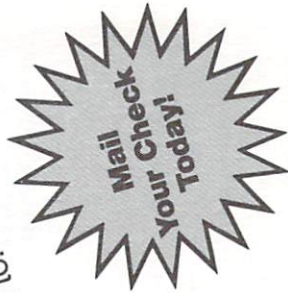
of some of today's

Super

from **COMPUTE!** Publications in commercial software to:
the biggest names in commercial software to:
the biggest names in commercial software to:

Complete this card and mail it with your check to:

Complete this card and mail it with your check to:
COMPUTE!'s Demo Disk Pack
COMPUTE! 5188
P.O. Box 5188
Greensboro, NC 27403



**COMPUTE!'S
DEMO DISK
SPECIAL!**

See Our 2-Page
Ad in This Issue.

COMPUTE!'s FREE Reader Information Service

Use these cards to request FREE information about the products advertised in this issue. Clearly print or type your full name and address. Only one card should be used per person. Circle the numbers that correspond to the key number appearing in the advertisers index.

Send in the card and the advertisers will receive your inquiry. Although every effort is made to insure that only advertisers wishing to provide product information have reader service numbers, COMPUTE! cannot be responsible if advertisers do not provide literature to readers.

Please use these cards *only* for subscribing or for requesting product information. Editorial and customer service inquiries should be addressed to: COMPUTE!, P.O. Box 5406, Greensboro, NC 27403. Check the expiration date on the card to insure proper handling.

Use these cards and this address only for COMPUTE!'s Reader Information Service. Do not send with payment in any form.

COMPUTE!

101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117
118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134
135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151
152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168
169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185
186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202
203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219
220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236
237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253

Circle 101 for a one year new U.S. subscription to COMPUTE!: you will be billed for \$24.

Please let us know. Do you own: _____ plan to buy: _____

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Apple _____
270 | <input type="checkbox"/> _____
271 |
| <input type="checkbox"/> Atari _____
272 | <input type="checkbox"/> _____
273 |
| <input type="checkbox"/> Commodore _____
274 | <input type="checkbox"/> _____
275 |
| <input type="checkbox"/> IBM _____
276 | <input type="checkbox"/> _____
277 |
| <input type="checkbox"/> TI-99/4A _____
278 | <input type="checkbox"/> _____
279 |
| <input type="checkbox"/> Other _____
280 | <input type="checkbox"/> _____
281 |
- (specify model)

Please print or type name and address.
Limit one card per person.

Name _____
Address _____
City _____
State/Province _____ Zip _____
Country _____
Phone _____

Please include ZIP Code

Expiration Date 1/31/89

GAOD88

SUBSCRIBE TO COMPUTE!

For Fastest Service,
Call Our **Toll-Free**
US Order Line
800-727-6937

- \$24.00 One Year US Subscription
 \$45.00 Two Year US Subscription

Name _____

(PLEASE PRINT)

Address _____

City _____ State _____ Zip _____

- Payment Enclosed Bill me

Your subscription will begin with the next available issue. Please allow 4-6 weeks for delivery of first issue. Subscription price subject to change at any time. Outside the U.S.A. please add \$6 for each subscription Basic Rate \$24.

Place
Stamp
Here

COMPUTE! Reader Service
P.O. Box 2141
Radnor, PA 19089



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

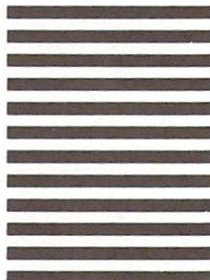
BUSINESS REPLY MAIL

FIRST CLASS

PERMIT NO. 7478

DES MOINES, IA

POSTAGE WILL BE PAID BY ADDRESSEE

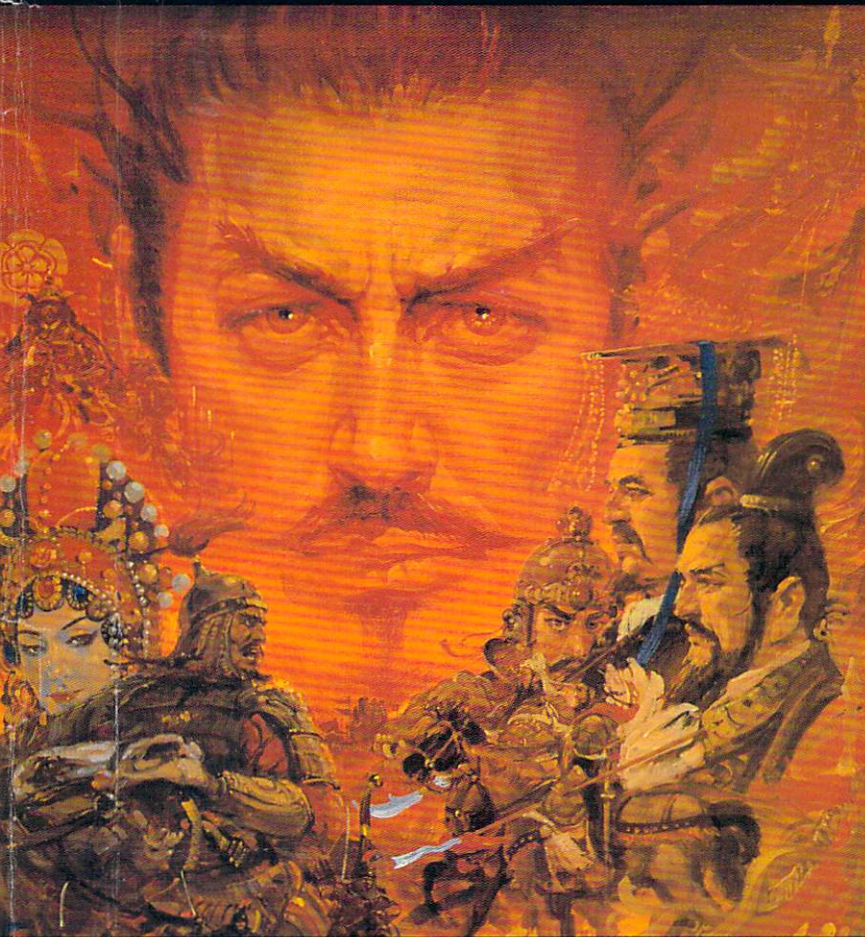


COMPUTE!

P.O. Box 10955
Des Moines, IA 50347-0955



KOEI, WE SUPPLY THE PAST, YOU MAKE THE HISTORY.



Make history in a real past with these incredible simulations —

Struggle against Sixteenth Century Japan's feudal lords to become Shogun in **Nobunaga's Ambition**. A military, economic and social simulation stressing strategy and tactics. Use your army, negotiate with other lords or perhaps you would rather just send Ninja.

Fight warlords for control of Second Century China in **Romance of The Three Kingdoms**. Recruit good subordinates and win their loyalty. Administer your own states to increase their wealth, and seize those of others.

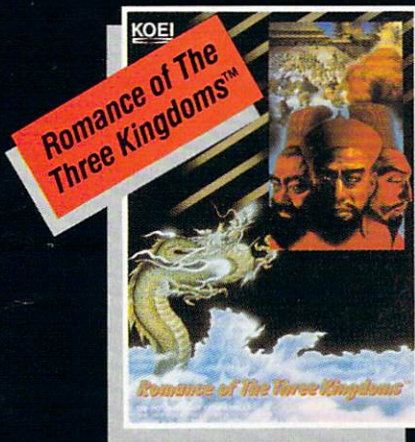
As **Genghis Khan** experience love and war as you carve a path of conquest through Asia and Europe.

KOEI

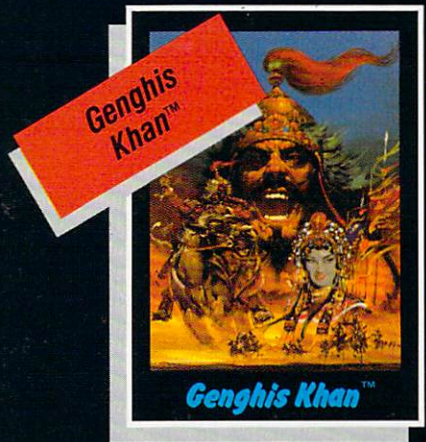
Please contact your local software retailer. If unavailable or for more information contact Koei Corporation, 20000 Mariner Ave., Suite 100, Torrance, CA 90503. VISA/MC Phone 213-542-6444.



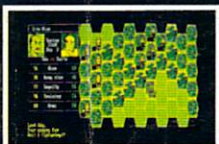
UNITE FEUDAL JAPAN
On Sale Now



CONTROL ANCIENT CHINA
On Sale Now



CONQUESTS OF LOVE AND WAR
Coming in November



Titles available on IBM 3 $\frac{1}{2}$ " and 5 $\frac{1}{4}$ " formats. Other popular formats coming soon.

IBM is a registered trademark of International Business Machines Corporation.

FREE 3-RING BINDER SET!
(A \$10.00 VALUE)
With purchase of any 2 Compu-Teach programs.
Ask your local dealer or call for details.



A classic education starts right here.

- IBM PC and Compatibles
- Apple II Series
- Macintosh



C H I L D R E N ' S S O F T W A R E ™

For information about Compu-Teach software, ask your dealer or call toll-free: 1-800-44-TEACH (CONNECTICUT: 203-777-7738).