FREE! ULTIMATE WINDOWS DISK (SEE PAGE 133)

HOW TO CHOOSE A CD-ROM DRIVE

COMPUTE

JANUARY 1994

ULTIMATE WINDOWS!

- 30 TOP TIPS FROM OUR EXPERTS
- 10 GREAT DRAW PACKAGES
- 4 SUPER CAPTURE UTILITIES

ULTIMATE ENTERTAINMENT

100 HOT PACKAGES!

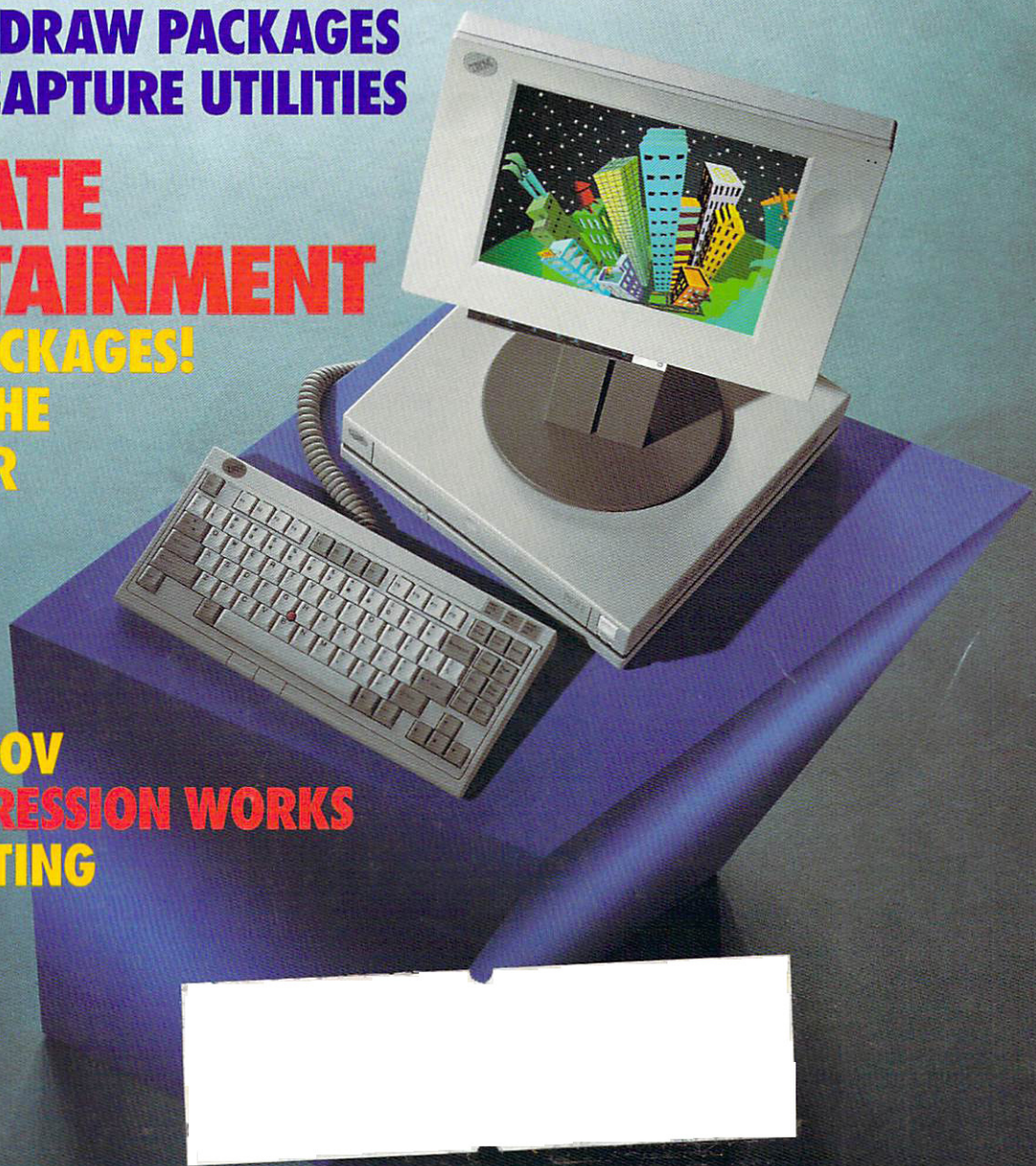
BUILDING THE BEST PC FOR GAMES

PLUS!

LOTUS IMPROV

HOW COMPRESSION WORKS

DIGITAL DIETING



U.S. $2.95

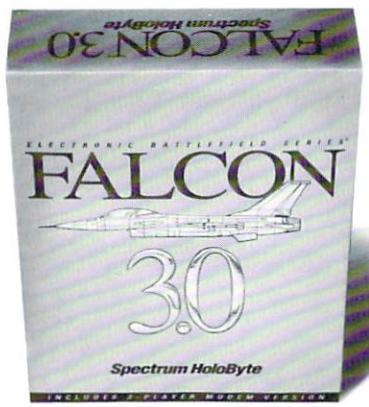
SURROUNDED BY ANTI-AIRCRAFT. HUNTED BY SAMS. EVEN MACH 2 ISN'T FAST ENOUGH. IT'S A STORY CAPTAIN DEAN PENNINGTON DIDN'T THINK HE'D LIVE TO TELL. WOULD YOU?

A TRUE STORY

Kuwait, May 23, 1991. Captain Dean "D-Dawg" Pennington dives to take out an Iraqi 85mm gun emplacement below. "Flares, break left!" his wingman screams. He wrenches the stick just as a SAM explodes 10 feet behind his F-16. Anti-aircraft batteries now open up all around, engulfing him. Too low to avoid the anti-aircraft, too slow to evade another SAM, he's faced with a hopeless choice and less than a quarter of a second to make it. Lighting afterburners, he rockets to safety before they can lock on again.

THE STANDARD BY WHICH OTHER FIGHTERS ARE JUDGED

Captain Pennington survived on skill, nerve and the awesome capabilities of the F-16 Fighting Falcon. Nothing, aside from a true F-16, captures the "hair-on-fire" feeling of flying America's most deadly fighter like *Falcon® 3.0,* Spectrum HoloByte's computer simulation.



A HIGHER LEVEL OF FLIGHT

Unlike some sims, which more closely simulate the arcade experience than the flying one, *Falcon 3.0* features a depth of play that almost rivals real life. Like real pilots, you'll fly with a wingman, allowing you to engage in aerial tactics like bracket maneuvers. Instead of enemies who fly in circles, *Falcon 3.0* adversaries fly according to true fighter doctrine so they're no pushovers. And Kuwait looks like Kuwait since real geographic theaters are faithfully mapped.

With Falcon 3.0, up to six players can go mano a mano. May the best man win.

SPECTRUM HEAD 2 HEAD HOLOBYTE

NOT JUST A SIMULATION OF A WARPLANE A SIMULATION OF WAR

Falcon 3.0 lets you fight as part of an entire campaign. The missions you fly play a crucial role in your side's success. But they're not hard-wired. Each result affects the overall war effort—and determines your next mission. Succeed

For Visa/MasterCard orders call 24 hours a day, 7 days a week: (800) 695-GAME.
For technical questions call (510) 522-1164 (M-F: 9AM-5PM Pacific Time).

©1993 Spectrum HoloByte, Inc. All rights reserved. All trademarks are the property of their respective owners.

and go on to hit the enemy in his own backyard. Fail and find the bad guys breathing down your neck.

FALCON 3.0 vs. MiG-29

Electronic Battlefield Series simulations link up. So you don't just choose your mission, you choose your aircraft. Care to fly for the other side, comrade?

THE ELECTRONIC BATTLEFIELD SERIES: THE ULTIMATE CYBER-BATTLEFIELD

Choose from multiple aircraft, multiple theaters, even which side of the conflict to fight on. Go head-to-head over a modem or with up to six players over a network. It's possible because each *Electronic Battlefield Series* title works with the others, from *MiG-29*™ to the upcoming F/A-18 simulation. There's even a multimedia guide to air-to-air combat called *Art of the Kill*™ to help you fly like an ace. It all starts with *Falcon 3.0.*

The simulation for people who want to fly the not-so-friendly skies.

Spectrum HoloByte

ELECTRONIC BATTLEFIELD SERIES

The fight of your life.

Circle Reader Service Number 201

COMPUTE

VOLUME 16, NO. 1, ISSUE 160 JANUARY 1994

FEATURES

6
WINDOWS: BETTER, FASTER, MORE
By Tony Roberts, Dan Gookin, and Clifton Karnes
30 Windows tips that put the win back in Windows.

16
TEST LAB
Edited by Mike Hudnall
Ten super Windows draw programs.

72
NEW YEAR, NEW YOU
By Lisa Young
Digital dieting.

100
PRODUCTIVITY CHOICE
By Stephen Levy
Improv from Lotus.

COLUMNS

4
EDITORIAL LICENSE
By Clifton Karnes
IBM's new PS/2 E.

40
NEWS & NOTES
By Jill Champion Booth
Top computer news.

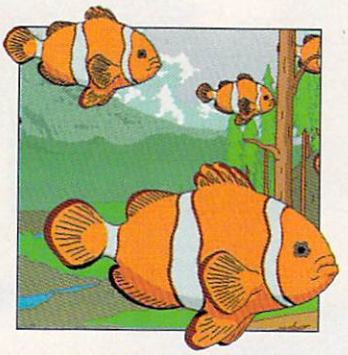
46
FEEDBACK
Answers to tough questions.

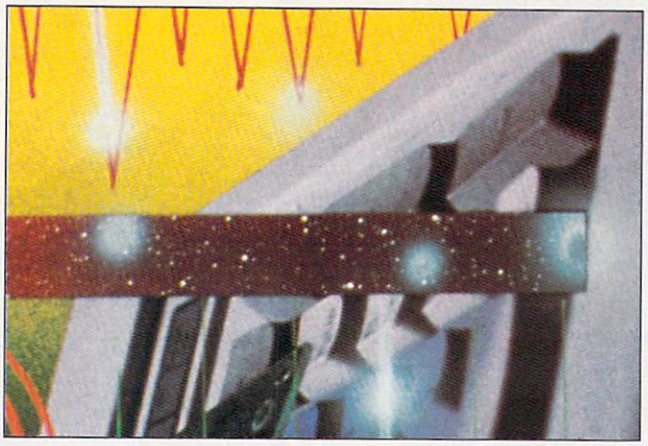
50
WINDOWS WORKSHOP
By Clifton Karnes
Four great Windows tips.

52
INTRODOS
By Tony Roberts
How compression works.

56
PROGRAMMING POWER
By Tom Campbell
How to create Windows Help files.

64
HARDWARE CLINIC
By Mark Minasi
Hot, new CPUs.





Cover photo by Mark Wagoner. IBM PS/2 E displaying clip art from Computer Support's Arts & Letters.

68
TIPS & TOOLS
Edited by Richard C. Leinecker
Tips from our readers.

102
PERSONAL PRODUCTIVITY
By Bradley M. Small
Third-party support for OS/2.

104
ART WORKS
By Robert Bixby
Capturing Windows.

172
NEWS BITS
By Jill Champion Booth
Top stories at press time.

MULTIMEDIA PC

85
FAST FORWARD
By David English
Full-screen desktop video.

86
HOW TO CHOOSE A CD-ROM DRIVE
By Richard O. Mann
What to look for.

94
NEW MULTIMEDIA PRODUCTS
Edited by Polly Cillpam
What's new!

98
MULTIMEDIA SPOTLIGHT
By David English
Sound Blaster DigitalEdge.

ENTERTAINMENT

106
DISCOVERY CHOICE
By Scott A. May
Microsoft Dinosaurs.

108
GAME INSIDER
By Shay Addams
The latest game releases.

110
ENTERTAINMENT CHOICE
By Keith Ferrell
Rules of Engagement 2.

112
GAMEPLAY
By Denny Atkin
Previews of new games.

115
BUILDING THE ULTIMATE GAME MACHINE
By Paul C. Schuytema
PCs for playing games.

REVIEWS

124
Microsoft Publisher 2.0,
Ballpoint Mouse 2.0,
Discover Space,
The Home Series, Release 2,
OmniCD,
The Lost Vikings,
Americans in Space,
Space Hulk,
ECCO Professional,
NCR 3150,
Flashback,
Lightning CD,
Baseball for Windows,
Icon Make-It,
Wayne's World,
Dauphin DTR-1,
Wacky Funsters, and more.

COMPUTE'S GETTING STARTED WITH™ ENTERTAINMENT SOFTWARE
Top computer games.
Following page 48.

ADVERTISERS' INDEX
See page 149.

COMPUTE (ISSN 0194-357X) is published monthly in the United States and Canada by COMPUTE Publications International Ltd., 1965 Broadway, New York, NY 10023-5965. Volume 16, Number 1, Issue 160.

Copyright © 1993 by COMPUTE Publications International Ltd. All rights reserved. COMPUTE is a registered trademark of COMPUTE Publications International Ltd.

Distributed worldwide (except Australia and the UK) by Curtis Circulation Company, P.O. Box 9102, Pennsauken, NJ 08109. Distributed in Australia by The Horwitz Group, P.O. Box 306, Cammeray NSW 2062 Australia and in the UK by Northern and Shell Plc., P.O. Box 381, Millharbour, London E14 9TW. Second-class postage paid at New York, NY, and at additional mailing offices. **POSTMASTER: Send address changes to COMPUTE Magazine,** P.O. Box 3245, Harlan, IA 51537-3041. Tel. (800) 727-6937.

Entire contents copyrighted. All rights reserved. Nothing may be reproduced in whole or in part without written permission from the publisher.

Subscriptions: US, AFO - $19.94 one year; Canada and elsewhere -$25.94 one year. Single copies $2.95 in US. The publisher disclaims all responsibility to return unsolicited matter, and all rights in portions published thereof remain the sole property of COMPUTE Publications International Ltd. Letters sent to COMPUTE or its editors become the property of the magazine. Editorial offices are located at 324 W. Wendover Ave., Ste. 200, Greensboro, NC 27408. Tel. (910) 275-9809.

Printed in the USA by R. R. Donnelley & Sons Inc. #R126607415

HOW TO BUY A DOUBLE-SPEED CD-ROM... WITHOUT GETTING TAKEN FOR A DRIVE.

Introducing Creative OmniCD.

If you've been thinking about adding the power and excitement of an internal CD-ROM to your PC, here's some great news: thanks to our exclusive Creative Double-Speed Technology,™ *double-speed CD-ROM performance is now available at about the same price you'd expect to pay for a single-speed drive.*

And we're not talking about just any CD-ROM here. This is a full-featured, MPC 2 compliant, XA-ready, 300KB/second, multi-session photo CD drive with a blistering fast 320ms access time: The all-new Creative OmniCD.™

WORKS WITH ANY SOUND CARD.

Of course Creative OmniCD works with your Sound Blaster™— after all, it is the industry standard for PC audio. But what if you've already got another sound card?

No problem. Because *Creative OmniCD works perfectly with just about every major brand of audio card*...or even *without* a sound card for applications that don't use audio.

Best of all, Creative OmniCD opens up a whole new world of CD-ROM applications. Like photo CD—we've even included Aldus® Photostyler™ SE image enhancing software right in the box. And also games, multimedia and business applications, education, and more.

THE BOTTOM LINE: A LOT MORE DRIVE, A LOT LESS MONEY.

Sure, there's plenty of other manufacturers offering double-speed CD-ROM drives. But as part of a complete package *with an SRP of less than four hundred dollars?** Now *that's* Creative.

For more information and the name of your nearest Creative Labs dealer, call 1-800-998-5227.

Sound BLASTER™ CREATIVE™
CREATIVE LABS, INC.

Multimedia PC

*SRP $399.95

© Copyright 1993 Creative Technology Ltd. Creative Double-Speed Technology, Creative OmniCD, Sound Blaster and the Sound Blaster and Creative logos are trademarks of Creative Technology Ltd. All other trademarks are the property of their respective owners. U.S. inquiries: Creative Labs 1-800-998-5227 or 1-408-428-6600. **International inquiries: Creative Technology Ltd., Singapore, TEL 65-773-0233 FAX 65-773-0353.**

EDITORIAL LICENSE

Clifton Karnes

I have seen the future, and it has an IBM logo on it. This may sound strange given IBM's stormy past, but it's true. As most of you know, IBM didn't create the computer revolution, but in 1981 it intercepted the ball from Apple, Commodore, and Atari and carried it for a touchdown. The original IBM PC was a big win for IBM, which all but walked away with the entire PC game.

But in the late 1980s, IBM started to fumble. It repeatedly introduced hardware that was underpowered and overpriced. OS/2 1.0 was a fiasco, and the company's highly publicized separation from Microsoft left IBM out in the cold without a software partner.

In 1981 IBM invented the original PC. This year it reinvented it.

But IBM has been bouncing back. With OS/2 2.1, it created an operating system that has intelligent design and delivers high performance. And the ThinkPad notebooks are a similar win for the company, setting new standards in performance, design, and price.

As superior as both of these innovations are, however, they pale beside IBM's latest hardware creation. This new PC from IBM points the way to the future so clearly, it almost takes your breath away. I'm talking about the PS/2 E—IBM's "green" PC, the machine on this issue's cover.

The PS/2 E (known simply as the E) is an innovation in several key areas. It conserves space, saves energy, cuts noise to near zero, and all but eliminates emf emissions.

The E's look is distinctive. The system box is only about one foot square and less than three inches high, bordered by a green band. The box's design is clean and uncluttered. On the front you'll see IBM's logo, an on/off switch, two small status lights, and a small panel. Where's the disk drive? Open the panel, and inside you'll find a 1.44MB floppy drive.

You'll find something else interesting inside: four PCMCIA slots. Instead of a traditional bus for hardware expansion, this PC uses PCMCIA cards. There are four bays which can accept either four Type 1 or Type 2 cards or two Type 3 cards (which are larger).

Open up the system box, and you'll find something else that's amazing. There's no fan. Since this PC runs on a low-power 50-MHz 486SLC2, there's no need for cooling, and as a consequence, there's no noise.

The machine also comes with 8MB of RAM and a 123MB hard disk (which is much too small).

The system unit's small footprint is matched by the keyboard's (there's no built-in numeric keypad, but one is available as an option). And the mouse is built into the keyboard. This is the same pointer used on IBM's notebooks, and although it takes some getting used to, it's quite serviceable. To move the mouse pointer, you press a small red button just below the G and H keys. The left and right mouse buttons are embedded in the keyboard below the space bar. You can use an external mouse if you prefer.

Atop the system unit you'll find the E's most talked about (and expensive) feature: a beautiful 10.4-inch active-matrix color LCD monitor that features XGA graphics and resolutions up to 1024 × 768. The display can handle 65,000 colors and is crisp and fast. It's also a whopping $3,000. If the LCD is too pricey, however, there's a low-power, low-emission CRT monitor available too.

When you boot up the E, you'll find yourself in the OS/2 2.1 Workplace Shell. If you're an OS/2 fan, you'll be right at home. And even if you're not, Windows 3.1 and DOS are just a couple of mouse clicks away. If you decide to bypass OS/2 altogether, you can move the WIN-OS/2 emulator or the DOS session to your OS/2 StartUp folder and land in either environment.

OS/2, however, is worth a look. It sports an attractive and full-featured interface that's more object-oriented and consistent than Windows 3.1.

Although the E is innovative in several areas, the heart of the machine is its power savings. Not only does this PC use less power than traditional ones, it has several power-saving features built in—just like most notebooks do. If the power-saving features are enabled, the E uses less power than a 60-watt light bulb. IBM estimates that an office running 100 Es would save $2,000 a year in electricity, but money isn't really the object; it's saving energy and reducing emf radiation.

The E has the price tag you'd associate with cutting-edge technology (about $5,330 with the flat-panel LCD display), but as more units are made with similar specifications, the price will surely go down. Meanwhile, think of this lean, sexy machine on your desk. The thought is sure to make you smile and sigh. ❐

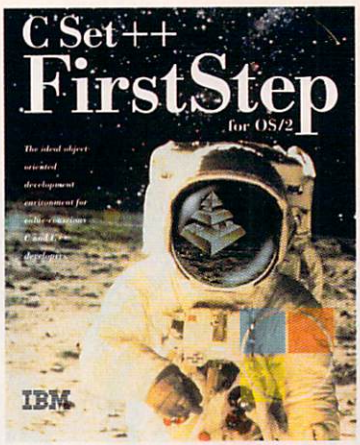
Introducing C Set ++ FirstStep for OS/2.

Object oriented applications start right here.

IBM C Set ++ FirstStep for OS/2. Starting at $ 85 (U.S.) - CD - ROM Version.

Now everything you need to begin writing C/C++ applications is at your fingertips - and well within your budget. C Set ++ FirstStep is a state-of-the-art, C/C++ development environment. It includes: •An ANSI standard conforming compiler for C/C++ •A visual tool for debugging •C++ Collection Class Libraries •A comprehensive Developer's Toolkit (Version 2.1) with all necessary programming tools, and •WorkFrame/2: which provides an integrating environment that increases the effectiveness of those tools.

In short, with C Set ++ FirstStep for OS/2 from IBM Software Solutions, you can launch yourself right into writing high quality object-oriented applications.



FirstStep Technical Features

- 32-bit C/C++ compiler.
- Visual PM Debugger.
- C++ Collection Class Libraries.
- Developer's ToolKit new V2.1.
- WorkFrame/2 (supports DOS, Windows and OS/2 tools).
- Open and configurable integration framework.
- Seamless integration of multiple edit, compile & debug tools.

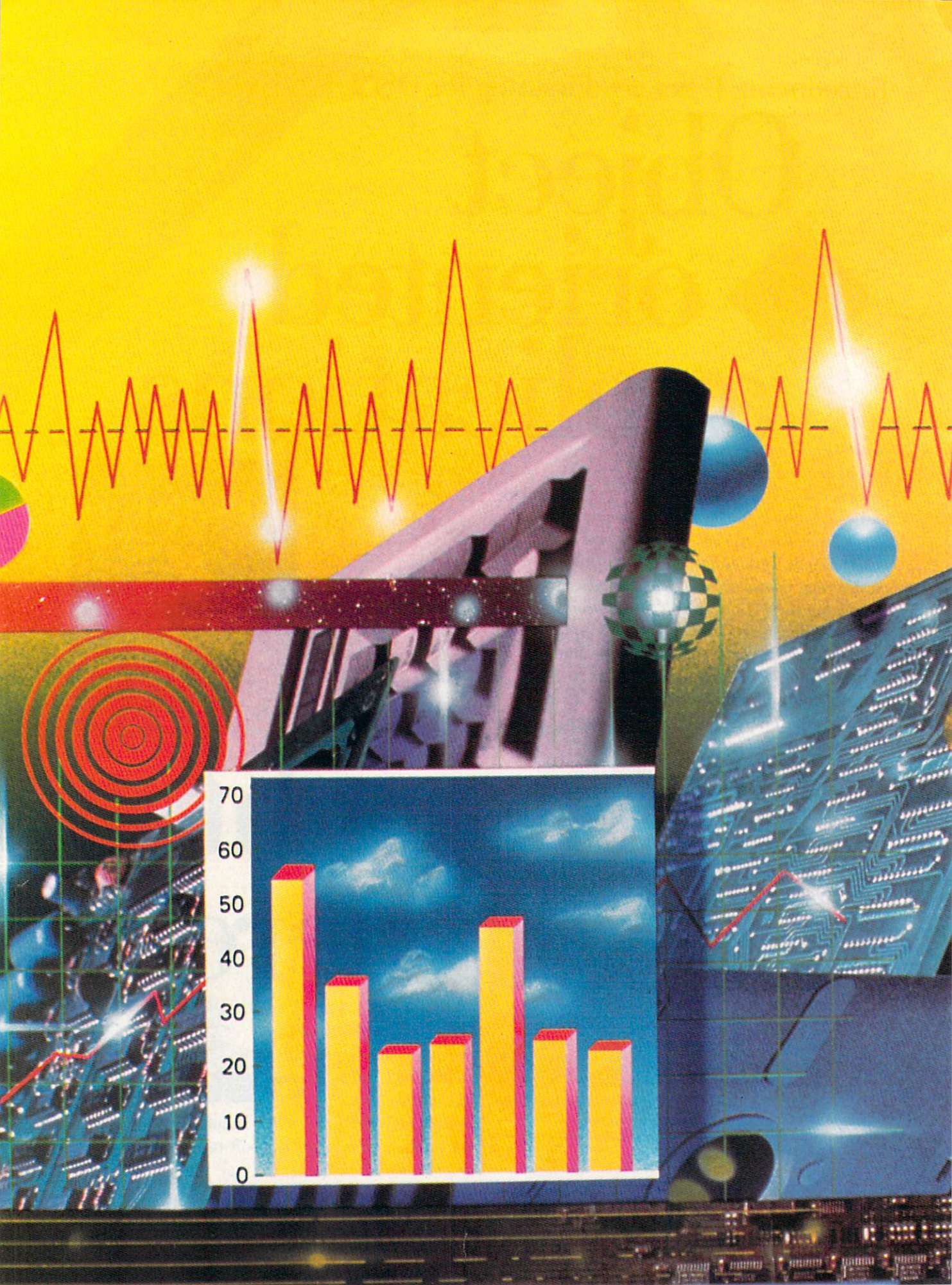
Professional developers may require the additional features of C Set ++ V2.1, our professional developer's package including high-end tools, optimization and full support and service.

To order C Set ++ FirstStep for OS/2, or for further information call **1-800-342-6672** (U.S.A.) or **1-800-465-7999**, ext. 670 (Canada). Or contact your local IBM software dealer.

C Set++

IBM

IBM and OS/2 are registered trademarks and C Set ++ is a trademark of International Business Machines Corporation.
Windows is a registered trademark of Microsoft Corporation.
© 1993 IBM Corp.


70
60
50
40
30
20
10
0

WINDOWS:

TIPS FROM THREE WINDOWS ACES

BETTER,

THAT PUT THE WIN BACK IN WINDOWS

FASTER, MORE

BY TONY ROBERTS, DAN GOOKIN, AND CLIFTON KARNES

How can you make Windows more responsive and still enjoy the flexibility and power of the interface? Take control of icons, learn to make DOS windows more responsive, make memory do your bidding, optimize your interaction with your hard disk, and more. In this article you'll find tips that make Windows fly, tips that make Windows fun, and tips that make Windows phenomenal.

1 Reduce Font Load

If it seems as if your Windows applications take forever to initialize, your system may be suffering from font overload. Cut back on the number of active fonts in your system, and applications will load faster.

Although Windows 3.1 allows you to have hundreds of fonts active, doing so slows down program loading and slows down your work as you wade through font lists. The solution is to install only the fonts you use often plus those you need for specific purposes.

Perhaps the best way to manage fonts is with FontMinder 1.1 (Ares Software, P.O. Box 4667, Foster City, California 94404-4667; $79.95). This utility lets you group fonts that you use for specific projects in font packs. When you go to work on the company newsletter, simply drag in the fonts for that project. Once the newsletter is published, just drag those fonts out.

If you work with hundreds of fonts, FontMinder is the one utility that can help keep you sane.

2 Create Icons for Control Panel Selections

Control Panel contains a handy collection of utilities, but most people frequently use only one or two—maybe Printers or Desktop. To get where you're going faster, you can run your favorite Control Panel directly.

While in Program Manager, select File, Run. In the Command Line box, enter the command *control printers*. Control Panel will load and automatically start the Printers utility.

Better yet, create a special Program Manager icon to run any Control Panel utility directly. First, select File, New, Program Item; then click on OK. In the Command Line box, enter *control printers*. Next, select Change Icon, Browse. Then select the WINDOWS\SYSTEM subdirectory and in the File Name box enter *main.cpl*. Select the printer icon and click on OK. Select OK again to close the Program Properties dialog.

3 Start Screen Savers from an Icon

Windows screen savers are great for covering up your work while you turn your attention elsewhere, but there's no apparent way to start a screen saver on demand—you have to wait until the time delay occurs.

Here's how to start a screen saver from an icon.

Using NotePad or SysEdit, open up your WIN.INI file. Locate the Programs= line and type *scr* at the end of it. Restart Windows so this change takes effect.

Now, create an icon for your saver by selecting File, New, Program Item. To see the filenames for screen savers on your system, select Browse and enter **.scr* in the File Name box. Select one of the savers, and its name will appear in the Command Line box. Add a /s switch to the end of the command line, and click on OK.

Now you can start a screen saver immediately by double-clicking on its icon. If you want to change the screen saver's configuration, go through Control Panel as usual. If you want to start the saver with a hot key, edit the icon's properties to include a hot key.

4 Shift into High Gear

The Shift key is more powerful than it looks. Here are three Shift-key tricks.

- Hold down the Shift key when starting an application. The program will run, but it will be minimized.
- Hold down the Shift key when starting Windows to prevent the programs in your StartUp group from loading.
- Hold down the Shift key as you double-click on the Control-menu box to save your Program Manager settings without exiting from Windows.

5 Assign a Hot Key to Program Manager

How would you like a hot key that would get you back to Program Manager from wherever you are?

Open your StartUp group and select File, New, Program Item to create a new icon for Program Manager. Enter *progman.exe* in the Command Line box, and specify your preferred hot-key combination in the Shortcut Key box. Ctrl-Alt-Shift-P is a possibility.

At this point, you can further personalize your desktop if you like by adding some custom text in the Description box. For example, try typing in *Bob's Desktop* or *Tony's Analytical Engine*.

Click on OK to close the Program Properties dialog and double-click on the newly created icon to install your changes and activate your hot key. Because the new icon is in the StartUp group, your changes will go into effect every time you start Windows. Don't be concerned that this tip will leave you with multiple copies of Program Manager floating around. Program Manager is a single-instance application. If the program is already running when you try to run it, it merely becomes active rather than starting up a second copy.

6 Eliminate Group Clutter

Almost every Windows application wants to create its own Program Manager group. Before long, you'll be swimming—or perhaps drowning—in groups.

Create a more efficient workspace by putting the icons for all of your most-used applications in one Master group. Close all other groups, and then select Window, Tile to make your Master group fill the screen. This will allow you to perform most of your work without opening and closing a lot of groups.

Further reduce the group clutter by moving similar programs from their native groups to groups created based on function. For example, put all of your telecommunications icons in a Telecommunications group.

7 Reorder the Group List

You can open a Program Manager group that's not visible by selecting Window and then clicking on the name of the group from the numerical list. However, if you have several groups, your most-used groups may not appear at the top of the list. You can change the settings in the PROGMAN.INI file to make sure the groups you want are at the top.

First, make a backup copy of PROGMAN.INI; then load PROGMAN.INI into a text editor such as Notepad. The file includes a Settings section and a Groups section. Groups lists all of the groups you have created and assigns each a group number.

In the Settings section is a line that begins Order= and then lists a series of group numbers. To change the position of a group on the Window menu, place the group's number in the desired position on the Order= line. Restart Windows for the change to take effect.

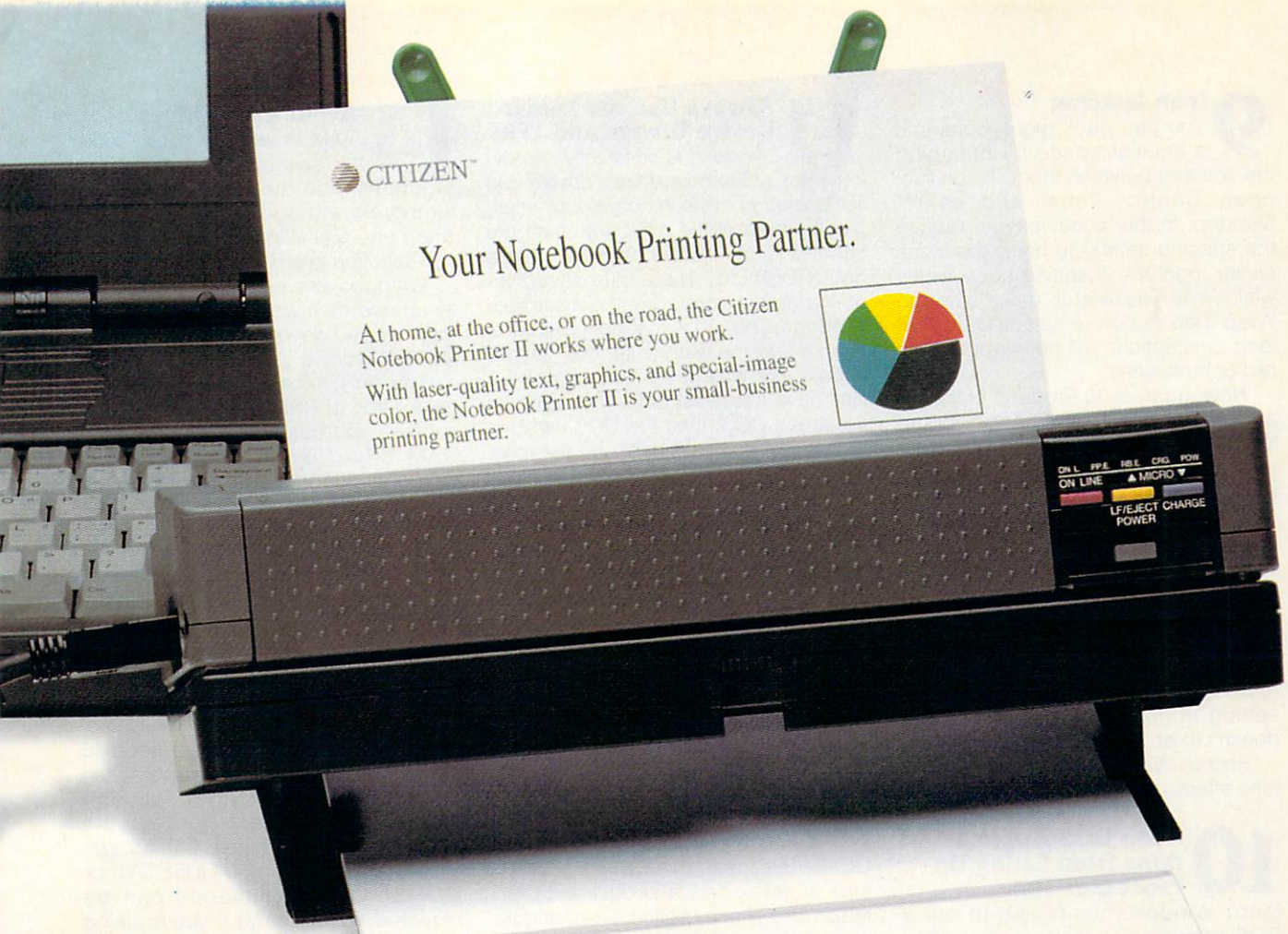
8 Can't See the DOS Error Message?

Sometimes when you're trying to run a DOS application from Windows, all you see is one flash of the DOS screen before the DOS box exits and returns to Windows. There's an error message there, but your eyes aren't quick enough to see it.

To get a good look at the error message so you can figure out what to correct, you need to edit the PIF file that controls the DOS application. Run Pifedit and load the appropriate PIF file. If the application has no specific PIF file, load _DEFAULT.PIF.

Deselect the Close Window on Exit item, and save the modified PIF. This leaves a DOS window open so you can read any error message that may have been created. Rerun the problem program, and take whatever steps are necessary to correct the problem.

When everything is working smoothly, reopen the PIF file and select Close Window on Exit.



The Citizen Notebook Printer II. It works where you work.

When we say Citizen works where you work, we mean it. On your desktop or on the road, the Notebook Printer II is the perfect companion to your PC. With its built-in, 5-page sheet feeder or optional 30-page sheet feeder and NiCad battery, you'll get laser-quality text and graphics wherever your work takes you. You'll also get two pages per minute output and Special-Image Color. All for a surprisingly low price.

Think of it. Now you can use your printer at your desk or in just about any location, use color when you need it, and produce professional-looking results. The Notebook Printer II really is the perfect PC companion. And all Citizen printers come with Citizen's two-year warranty and exclusive Service Select Program™. For more information on the printer that works where you work, call 1-800-4-PRINTERS for a Citizen Notebook Printer II dealer near you.

CITIZEN™

The Notebook Printer II. It works where you work.

Circle Reader Service Number 174

©1993 Citizen America Corporation. Citizen America Corporation, Citizen logo, The Citizen Notebook Printer II and Service Select Program are registered trademarks of Citizen America Corporation. Printer shown with optional 30-page sheet feeder.

9 Icon Spacing

You can pack more icons into a smaller space by changing the spacing between them. To do this, open Control Panel and select Desktop. In the Icons section, reduce the spacing setting to bring the icons closer together. A setting of 60 works well. While you're at it, make sure the Wrap Title option is selected so that long descriptions will be wrapped into two or three lines.

Now, go back to Program Manager and select Window, Arrange Icons. Your icons will be nestled a little closer together, but the vertical spacing between rows of icons will be unaffected. Unfortunately, you can't change that setting from Control Panel. You'll have to edit WIN.INI to make that change.

Open WIN.INI with SysEdit or Notepad and search for the [Desktop] section. Look for a line that begins IconVerticalSpacing=. Change the setting in that line to 75. If the line doesn't exist, go ahead add it.

Restart Windows for the change to take effect.

10 Keep DOS Applications from Eating Up Processor Time

Many Windows users like to run a DOS session and leave it minimized on the desktop so they'll have quick access to the command line to execute DOS commands.

Although you'll rarely attempt to multitask such a DOS session, Windows doesn't know that, so it spends some of its time checking to see if there's any background work that needs to be done in that session.

You can save Windows some effort and speed up your other applications by editing the PIF file that runs your DOS session (usually DOSPRMPT.PIF) to reduce background priority.

Run Pifedit and open the appropriate PIF file. Click on the Advanced button and change the background priority to 1—the lowest possible setting. Save your changes.

Now you can keep your DOS icon minimized on your desktop, but Windows won't worry about checking in with the DOS session as often.

If you ever do need to increase the background priority for a specific reason, you can do it on the fly. If your DOS session is running full-screen, press Alt-space bar to make it a windowed session. Then select the Control-menu box in the upper left corner and choose Settings. Increase the background priority as needed to give the DOS session a greater share of the system's attention.

11 Always Use the Latest Device Drivers and TSRs

Microsoft is constantly improving some of the core device drivers and TSRs used to make Windows a pleasant place. Three of the most important are HIMEM.SYS, EMM386.EXE, and SMARTDRV.EXE. These must always be up-to-date for you to get the most from Windows. The rub is that both DOS and Windows come with these files, so you should use whichever versions of the files have the latest date. If you've just upgraded DOS, then the DOS versions of the files would probably be the most recent.

12 Manage Your Memory

Windows needs oodles of extended memory to run properly. You should configure your PC so that all of its excess memory is of the extended type. To do this and to get the most from Windows, you need to have a good memory manager installed. DOS 5 and 6 come with the programs to do this job, and third-party programs such as QEMM/386 and 386Max are more than up to the task.

With DOS 6, you prepare memory by running the MemMaker program. QEMM/386 uses the Optimize utility, and 386Max has a program called Maximize. These utilities will configure your PC's memory to work best with Windows by controlling extended memory and loading device drivers and TSRs into upper memory, thereby saving precious conventional memory for those programs that need it. This is all complex and heady stuff, but the memory configuration programs make it painless—and a chore you may need to do only once.

13 Use SMARTDrive or a Similar Disk-caching Program

Next to the printer, your disk drives are probably the slowest things Windows has to contend with. Even though your hard drive may be slippery fast, it can be made to work even faster by installing a disk-caching program. DOS comes with such a program, SMARTDRV.EXE, the SMARTDrive disk cache. Third-party disk caches are also available.

The disk cache you use will improve disk operations by storing disk information in memory. Since most information on the disk is read repeatedly, the disk cache speeds up operations by having Windows read the information from memory instead of the relatively slower hard drive. This can improve Windows' performance drastically—especially on systems with ancient hard drives.

14 Avoid RAM Drives

RAM drives are handy tools for speeding up some DOS programs, and they make wonderful temporary storage areas. However, when you use Windows, the memory you sacrifice to a RAM drive is wasted.

Windows craves memory. It eats it all up and then wants more. Whatever memory you devote to a RAM drive is lost to Windows.

The only exception here is if you have a ton of RAM—16MB or more. If so, then you can spare memory for a RAM drive. Even then, Windows would probably rather have all the memory for itself.

15 Avoid DOS Device Drivers and TSRs

Some of the device drivers and memory-resident programs you load in CONFIG.SYS or AUTOEXEC.BAT may be unnecessary for Windows—hogging memory that Windows would rather have for itself.

For example, there is no need to load the ANSI.SYS device driver when you use Windows. The command line–editing program Doskey isn't needed. Windows comes with its own mouse driver, so any MOUSE.SYS or MOUSE.COM commands can be resected as well. And if you're using the SMARTDrive disk cache, you can dispense with the Fastopen command. Just edit these lines from your CONFIG.SYS or AUTOEXEC.BAT file, and Windows will gladly gobble the memory they took.

There is an exception to this rule. If you run a DOS program in Windows and it requires a TSR, such as the mouse driver, then you should load it before Windows starts. However, if DOS programs are a thing of the past for you, then definitely get rid of the excess baggage.

16 Create a Permanent Swap File

Windows runs best in the enhanced mode, its preferred modus operandi for 386 and 486 PCs. And it runs better if you've created a permanent swap file, which Windows can use to boost your overall memory situation.

The permanent swap file is a large file on disk that Windows uses for storing information. You create it from the Control Panel; start the Control Panel and click on the 386 Enhanced icon and then the Virtual Memory button. If you have a permanent swap file already, statistics about it will appear on the screen. Otherwise, click on the Change button to create a permanent swap file for your system.

A good permanent swap file

Windows DTP Price Breakthrough.

This ad was created with PagePlus!

Award Winning Desktop Publishing Software.

SPECIAL OFFER $59.95 BUY DIRECT

PagePlus 2.0 – High-End DTP for *Everyone.*

Now you can get a high-end Windows desktop publisher for an industry-shocking $59!

"PagePlus 2.0 has put itself in the league with the big-time players" said BYTE – tremendous power combined with superb ease of use. Check out this ad – *designed and produced using PagePlus 2.0 with full color separated output.* Get PagePlus and we'll show you how YOU can easily produce beautiful full color pages every bit as good as this one, right on your own computer.

NEW! **Professional Print Quality** with both spot- and process-color separations, and great results from your own dot-matrix, inkjet or laser printer.

NEW! **Text Frames** with unique column blinds give you the ultimate in text flow control.

NEW! **Styles and Templates** with AutoApply for great looking pages in a hurry.

W REPORT CARD

Recommendations...

Windows Magazine 9/93
"Pick a Publishing Powerhouse"
by William Harrel.

	Short one-color documents	Long one-color documents	Short spot-color documents	Long spot-color documents	Short process-color documents	Long process-color documents
Easy Working Desktop Publisher	B	B	C	C	D	D
Express Publisher	B	C	C	C	D	D
FrameMaker	B	B	B	B	D	D
PageMaker 5.0 (TW)	A	A	A	A	A	A
PagePlus 2.0 (TW)	A	B	A	B	A	B
PFS: Publisher	B	B	C	C	D	D
Publish It! (TimeWorks)	C	C	C	C	D	D
QuarkXPress	A	C	A	C	A	B
Ventura Publisher	B	A	B	A	C	B

Copyright 1993 by CMP Publications, Inc. Reprinted with permission.

NEW! **Export as Picture** from PagePlus 2.0 to jazz up your WP document or spreadsheet.

NEW! **Free Text** lets you drag and drop text anywhere on the page or pasteboard.

NEW! **Free Rotation** of text and graphics. Wow!

NEW! **ChangeBar** technology for dynamic on-screen changes. It couldn't be easier.

NEW! **Hint Line**, Movable rulers, CleanUp, Status Editor, OLE, TrueType and much more...

It's a Winner!

New PagePlus 2.0 is as good as (or better than) super high-end DTPs costing hundreds more. In fact, Windows Magazine rated ALL the top publishers (including four $600-plus packages) and recommended... $59.95 PagePlus. The days of paying hundreds for quality DTP are over!

Try PagePlus 2.0 for just $59.95 totally Risk-Free!

The desktop publishing power you'll have is awesome. Right out of the box you'll be designing graphics-packed ads, flyers, newsletters, forms and more... all for just $59.95. And our 60-day money-back guarantee means you've nothing to lose!

New Publishing Packs...

We've also introduced three sensational new Publishing Packs for a phenomenal $29.95 each.

NEW! **TypePlus** a super powerful text effects program for explosive headlines and logos.

NEW! **ArtPack** a professionally drawn collection of over 500 color images for superb results.

NEW! **FontPack** a comprehensive power user's collection of 120 TrueType professional fonts.

Best of all, order the Serif SuperPack collection with PagePlus AND all three publishing packs for an amazing $99.95. Try it for yourself in your own home or office for 60-days risk-free. If, for any reason, you're not completely satisfied, simply return it for a refund.

So call us Direct, or fax/mail the coupon today!

To run PagePlus, you'll need:

- Microsoft Windows 3.1 or later, with mouse
- 80286 PC or higher, with at least 2 Mb memory
- At least 4 Mb free disk space
- ANY Windows compatible printer

All products shipped on 3.5" (1.44 Mb) disks. Please specify if you need 5.25" (1.2 Mb) disks.

YES! Please rush me PagePlus. I understand I can return it within 60 days if I'm not completely satisfied.

- ☐ **PagePlus 2.0 @ $59.95**
- ☐ **TypePlus 2.0 @ $29.95**
- ☐ **ArtPack @ $29.95**
- ☐ **FontPack @ $29.95**
- ☐ **SuperPack @ $99.95 (includes all the above)**
- ☐ **10-User SuperPack @ $249**

I enclose a total* of $ .....
*Add $7 for S&H ($25 International).

Check/Card # .....
Exp. Date.....
Signature .....
Name.....
Company.....
Address .....
City .....
State ..... ZIP .....
Telephone (.....) .....

Please return to:
Serif, Inc.
PO Box 803
Nashua NH 03061
Or Fax Toll-Free to: 800-869-8909 CPT01

24-HOUR TOLL-FREE ORDER LINE
800-697-3743

24-HOUR FAX ORDERS
800-869-8909

Great Software, Direct

SERIF

Serif, Inc. • PO Box 803 Nashua NH 03061 • Tel: (603) 889-8650 Fax: (603) 889-1127
Serif Europe • PO Box 15 Nottingham NG7 2DA England • Tel: +44 602 421502 Fax: +44 602 701022
NOTE: Checks/money orders to SERIF. MasterCard/VISA/American Express/Discover accepted. Cards not charged until dispatch. POs welcome from Education, Federal and Fortune-1000. 10-User SuperPack is a Site License for 10 users in one location. Serif product names are trademarks of Serif, Inc. All other trademarks acknowledged. When you buy any Serif product you get great software and great support. It's both UNLIMITED and FREE! Tech Support is normally available 24-hours-a-day, 7-days-a-week. French and German versions now available.

should be about 2MB in size. If you have a lot of memory in your PC (8MB or more) or you run complex graphics programs, consider a larger permanent swap file (say, 4MB).

17 Optimize Your Hard Drive

Regularly optimizing or defragmenting the hard drive will improve any PC's performance, especially a Windows system. The idea is to check all the files on your hard drive and patch up any that are fragmented. Files get fragmented as DOS tries to make the best use of disk space; larger files are split into smaller pieces to fit on the disk. It means you can store more stuff, but the fragmented files take longer to save and load since DOS has to keep track of the pieces.

Optimizing your hard drive is done in two steps, both of which should be accomplished before you start Windows. The first is to run DOS's Chkdsk program. This checks for lost clusters on the hard drive. If Chkdsk finds any, run the command again, but specify the optional /f switch. Then delete all the FILE*.CHK files Chkdsk recovers. (You'll probably want to delete them. The odds against their containing useful data are astronomical. When in doubt, load them into a text editor before deleting them.) After that, run a defragmentation program, such as Norton's SpeedDisk, PC Tools' Compress, or DOS 6's Defrag.

It's important to note that optimization isn't voodoo. It doesn't automatically make your PC run faster. Before you optimize, check the percentage of fragmented files. If it's below 10 percent, optimization isn't necessary.

18 Avoid Starting Too Many Applications with Windows

A lot of Windows utilities may automatically start themselves when Windows starts. When this happens, it takes you longer to get to work, since Windows spends a goodly amount of time running all those utilities and other programs. The way to stop this is either to remove some of the programs from the Program Manager's StartUp group or to edit the WIN.INI file and remove some of the files in the [Windows] section by the load= and run= prompts. The second method requires a little more Windows savvy, so you might want to consult with a guru before attempting it.

Note that some of the programs automatically loaded by Windows may be very necessary. For example, a screen saver or font manager is a good thing to have loaded. But starting the Clock or File Manager or other tools just slows down Windows.

19 Run Your Applications Full-Screen

Windows is about, well, windows. Your applications run in their own windows on the screen. And while it's fun to see both Excel and Ami Pro at the same time, it's more work for Windows to keep everything sane. You'll find your applications run better when they're maximized to fill the entire screen. (Another benefit of running your applications full-screen is that you see more of your work.) To do this, click on the Maximize button (the up-pointing triangle) in the upper right of every application window. Or drop down the Control menu (on the upper left of every application window) and select the Maximize item.

20 If You're Running Only One Windows Application, Run It in Standard Mode

Quite a few Windows PCs are set aside to do only one thing. Some may be running just WinWord or another word processor. Others may be order entry workstations running a database. If so, you'll see an improvement in performance if you start Windows in standard mode; type *win /s* at the DOS prompt to select standard mode.

The advantage here is that Windows runs without loading the overhead it needs to work with multiple programs in enhanced mode.

21 Close Applications You're Not Using

You don't have to quit a program to stop using it in Windows. If you tire of WinWord, you can minimize the program and switch over to your Games group for another two hours of Solitaire. Then you can easily switch back to WinWord when the boss lumbers by. While this is what multitasking is all about, having WinWord running drains power from Windows.

Some users will have a whole row of minimized applications lined up at the bottom of the desktop. Each of those applications draws on Windows' resources, impeding system performance. If you're truly going to stop work on a program, then exit it instead of switching away.

22 Use a Plain Desktop Pattern

Falling leaves, interlocking Escher patterns, and comic-book heroes often provide the backdrop for Windows' desktop. But these graphics occupy memory and take time to paint on the screen. If you're willing to sacrifice beauty for performance, then use the Control Panel's Desktop item to give Windows a plain background. This uses less memory and makes Windows screen redraws faster.

23 Switch to Lower-Resolution Graphics

Just because your Super-DooperVGA card can support a zillion-by-zillion graphics resolution doesn't mean you have to use it. The higher resolutions Windows supports use more system resources and take longer for Windows to manage. To recover some of your performance losses, switch Windows to a lower graphics resolution, which is probably supported by your video hardware. In fact, the boring old VGA resolution is the fastest of the lot. It's also easier to read a 640 × 480 or 800 × 600 screen than screens of higher resolution (particularly if your eyes are over 40).

24 Print to a Networked Printer

The slowest part of any computer setup is the printer. No matter how fast the printer, data slows to a crawl as it's transferred to paper. One solution is to use the Print Manager to handle printing. But better than that is to print to a network printer. You'll see files virtually fly off the screen, seemingly printing in an instant. Don't get too excited, however. Your printout is just waiting elsewhere on another computer that's having to toil with printing. But in the meantime, you've wrested control of Windows and can get on with something else. (Needless to say, this trick doesn't work if you don't have a network or a network-designated printer.)

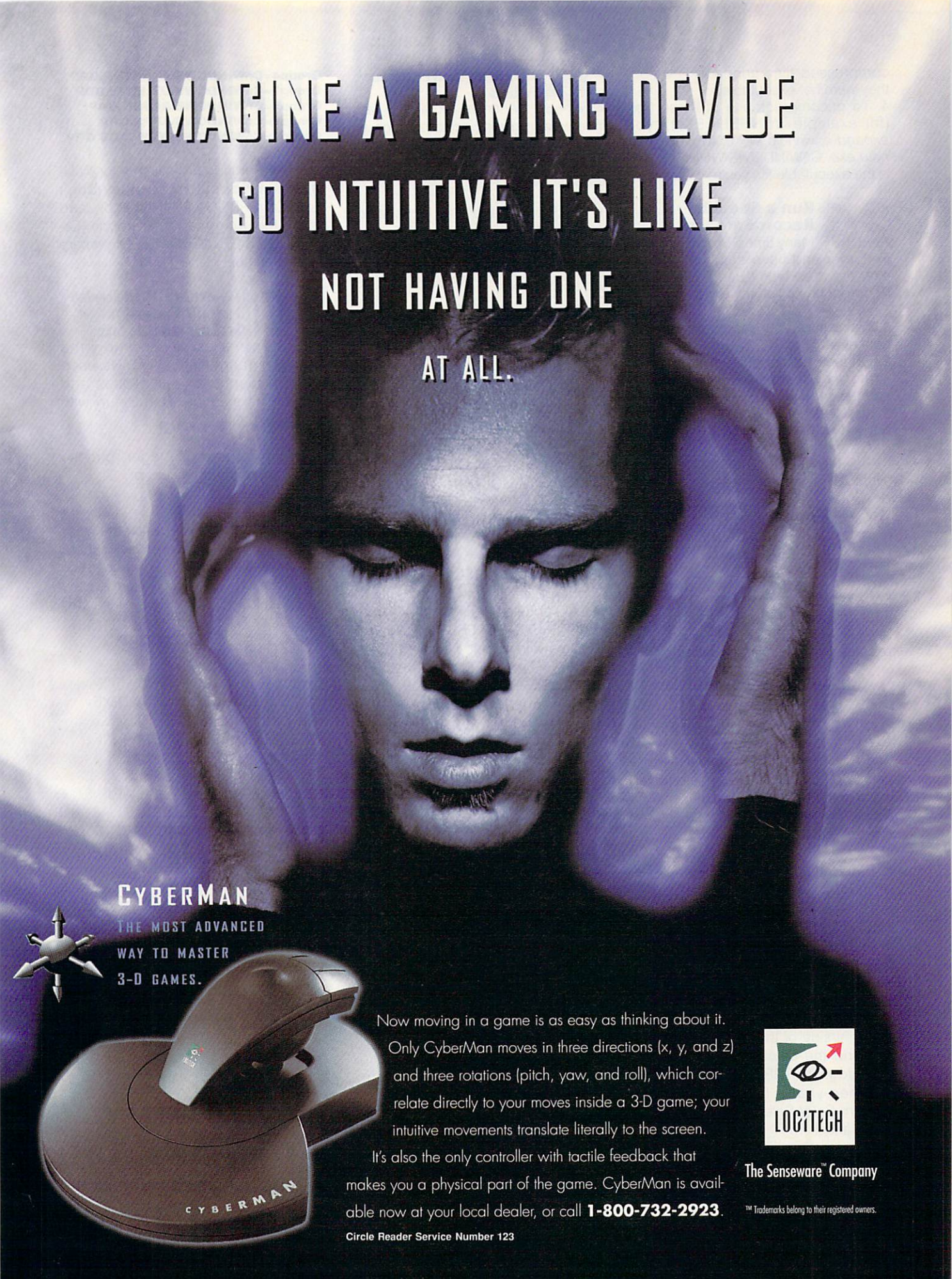
25 Reinstall Any Windows Program Without Running Setup

There are many times when you need to reinstall just one program, file, or group of files from the Windows distribution disk. You usually can't do this without reinstalling all of Windows again.

The solution is to decompress the files on the Windows distribution disks.

1. Find the EXPAND.EXE program on the Windows distribution disks. (It will probably be on disk 1 or 2.)
2. Copy EXPAND.EXE to your WINDOWS subdirectory.
3. You'll notice that most of the other files on the disk have extensions that end with an underscore (for example, WINHELP.EX_, MOUSE.DR_, and so on). These are compressed files. (Note that in early versions of Windows, the

IMAGINE A GAMING DEVICE SO INTUITIVE IT'S LIKE NOT HAVING ONE AT ALL.



CyberMan

THE MOST ADVANCED WAY TO MASTER 3-D GAMES.

Now moving in a game is as easy as thinking about it. Only CyberMan moves in three directions (x, y, and z) and three rotations (pitch, yaw, and roll), which correlate directly to your moves inside a 3-D game; your intuitive movements translate literally to the screen.

It's also the only controller with tactile feedback that makes you a physical part of the game. CyberMan is available now at your local dealer, or call **1-800-732-2923**.

Circle Reader Service Number 123

LOGITECH

The Senseware™ Company

™ Trademarks belong to their registered owners.

compressed files ended in EXE, but they were not executable.)
4. To decompress one of these files (for example, WINHELP.EX_), type *expand a:winhelp.ex_ c:\windows\winhelp.exe.* C:\WINDOWS\WINHELP.EXE is the executable file you're creating.

26 Run a Specific Recorder Macro

Many times, you want to run Recorder and have a specific macro execute. You won't use it often, but Recorder has a hot-key switch.

1. Make sure your macro specifies a hot key.
2. On the command line, put *recorder -h hot key filename.ext,* where filename.ext is the name of the Recorder macro and hot key is the key combination that normally runs the macro.

For the hot key, use the following symbols, plus the key name.

Key	Symbol
Alt	%
Ctrl	^
Shift	+

For example, if your hot key is Shift-F10 and your macro file is named MYMACROS.REC, you would type *recorder -h +f10 mymacros.rec.*

27 Create New Colors

Most people don't know the RGB values for colors, even the basic ones, and when you need to supply the RGB value for a color, you usually find yourself behind the eightball (RGB value 0, 0, 0). The solution is to use the color selector in Control Panel.

1. Run Control Panel and double-click on the Color icon.
2. Press the Color Palette button and press the Define Custom Colors button.
3. In the Custom Color Selector dialog box, you'll see a matrix of all of the available system colors. You can select one with the mouse and see its RGB values in the three text boxes on the right side of the dialog box. When you find the color you want, simply write down its RGB value.
4. When you're finished using the Custom Color Selector, click on Close and Cancel.

You can use these RGB values to specify colors in Windows Paintbrush, for example. Double-click on a color in the palette and enter the RGB values in the dialog box that appears.

28 Delete Unnecessary Files

Windows requires a large investment in disk space, which you may not be able to afford. You can ease this problem by deleting unnecessary files.

1. Run File Manager and move to your WINDOWS subdirectory.
2. You can safely delete any of the following files, provided you don't need the applications.

*.BMP (These are bitmap files—probably wallpaper.)
*.SCR (These are screen saver files.)
CALC.EXE, CALC.HLP (Calculator and its help file)
CALENDAR.EXE, CALENDAR.HLP (Calendar and its help file)
CARDFILE.EXE, CARDFILE.HLP (Cardfile and its help file)
CLOCK.EXE (Clock)
MSDOS.EXE (the MS-DOS executive)
PBRUSH.EXE, PBRUSH.DLL, PBRUSH.HLP (Paintbrush, its DLL, and its help file)
RECORDER.EXE, RECORDER.DLL, RECORDER.HLP (Recorder, its DLL, and its help file)
REVERSI.EXE, REVERSI.HLP (Reversi game with its help file in Windows 3.0)
WINMINE.EXE, WINMINE.HLP (Minesweeper game with its help file in Windows 3.1)
SOL.EXE, SOL.HLP (Solitaire game with its help file)
TERMINAL.EXE, TERMINAL.HLP (Terminal and its help file)
WRITE.EXE, WRITE.HLP (Write and its help file)

29 Edit PROGMAN.INI

Here's the scenario: Windows boots, and one or all of your groups are lost. You can fix problems like this if you know how to edit PROGMAN.INI.

1. Run Notepad and load PROGMAN.INI (you'll find it in your WINDOWS subdirectory).
2. The file has two sections, [Settings] and [Groups], with the following form.

```
[Settings]
Window=-4 0 801 528 1
SaveSettings=1

[Groups]
Order= 7 1 5 4 3 2 8
Group1=C:\WINDOWS\MAIN.GRP
Group2=C:\WINDOWS\ACCESSOR.GRP
Group3=C:\WINDOWS\GAMES.GRP
Group4=C:\WINDOWS\STARTUP.GRP
Group7=C:\WINDOWS\UTILITIE.GRP
Group5=C:\WINDOWS\QCWIN.GRP
Group8=C:\WINDOWS\APPS.GRP
Group9=C:\WINDOWS\WPW51US.GRP
```

3. If your groups are still in your WINDOWS subdirectory but they don't appear in PROGMAN.INI, simply add them, following the form Groupn=C:\WINDOWS\GROUPNAME.GRP, where n is the number of the group.

30 Re-create Windows Default Program Groups and Icons

It's often necessary to know the default arrangement Windows used when it installed your groups and icons. The solution: Run Setup with the /p parameter.

1. From Program Manager, choose File, Run, and type *setup /p.*
2. Click on OK.

Running Setup/p will re-create your default groups and icons, but if there are just a few items out of place, you may want to do it yourself. Here are the groups and icons Windows 3.1 installs.

Main	MAIN.GRP
File Manager	WINFILE.EXE
Control Panel	CONTROL.EXE
Print Manager	PRINTMAN.EXE
Clipboard	CLIPBRD.EXE
MS-DOS Prompt	DOSPRMPT.PIF
Windows Setup	SETUP.EXE
PIF Editor	PIFEDIT.EXE
Read Me	README.WRI

Accessories	ACCESSOR.GRP
Write	WRITE.EXE
Paintbrush	PBRUSH.EXE
Terminal	TERMINAL.EXE
Notepad	NOTEPAD.EXE
Recorder	RECORDER.EXE
Cardfile	CARDFILE.EXE
Calendar	CALENDAR.EXE
Calculator	CALC.EXE
Clock	CLOCK.EXE
Object Packager	PACKAGER.EXE
Character Map	CHARMAP.EXE
Media Player	MPLAYER.EXE
Sound Recorder	SOUNDREC.EXE

Games	GAMES.GRP
Solitaire	SOL.EXE
Minesweeper	WINMINE.EXE

StartUp	STARTUP.GRP

Initially, there are no files in the StartUp group. ❑

Free Money.

Due To Overwhelming Demand, This Incredible Offer Has Been Extended.

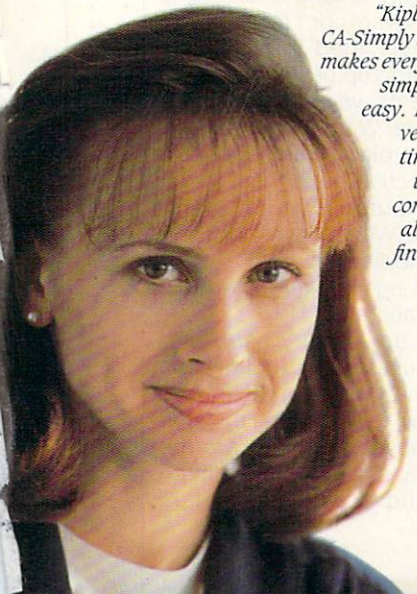
We've Already Reached Our Goal Of One Million Free Copies.
But Now We're Extending Our Offer While Supplies Last!
Call Right Now! Operators Are Standing By: 1-800-FREE-MONEY.

Introducing The Easiest, Quickest And Smartest Personal Finance Software In The World.

Is your spending out of control? With Kiplinger's CA-Simply Money, you can get off the financial rollercoaster and on the path to financial freedom. Write checks with a click of the mouse. Balance your checkbook. Create a monthly budget and control your expenses. What used to take hours now takes just minutes.

MICROSOFT WINDOWS COMPATIBLE

It's that quick and easy. And it's just plain smart. Kiplinger's CA-Simply Money puts you in total control of all your finances so you can make smarter decisions.



"Kiplinger's CA-Simply Money makes everything simple and easy. For the very first time, I'm in total control of all of my finances."

A Personal Financial Advisor Filled With Expert Advice From Kiplinger.

For more than 70 years, Kiplinger has been the first name in personal finance. Now their expert financial and tax advice will be right at your fingertips.

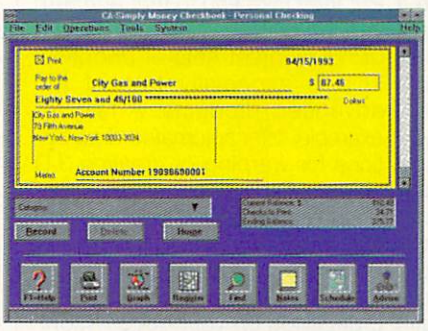
To prove how simple and easy Kiplinger's CA-Simply Money is, we're giving away millions of copies for FREE.

That's right. You can get this $69.99 product FREE.

New Kiplinger's CA-Simply Money Covers Simply Everything:

- Kiplinger's Financial Advisor
- Checking and Savings
- Investment Tracking
- Tax Reports
- Automatic Budgeting
- Computerized Check Writing
- Credit Cards
- IRAs/401(k)s
- Modem Stock Update
- Mortgages
- Financial Calculators
- Memorized Transactions

But you have to act fast. Pick up the phone right now and order your FREE copy of Kiplinger's CA-Simply Money today.



For A FREE Copy Of Kiplinger's CA-Simply Money Call: **1-800-FREE-MONEY Dept. J5401**

COMPUTER ASSOCIATES
Software superior by design.

Circle Reader Service Number 155

Kiplinger's CA-Simply Money

*There is a nonrefundable $6.95 shipping and handling charge. Have your credit card ready: Visa, Mastercard, AmEx, Discover accepted. One copy per household. Only available in the US. IBM PC or PC compatible with Windows 3.1 and minimum 2Mb RAM required. This offer is subject to availability. Computer Associates reserves the right to end the offer at any time. © Computer Associates International, Inc., Islandia, NY 11788-7000. Kiplinger's is a trademark of The Kiplinger Washington Editors, Inc. All product names referenced herein are trademarks of their respective companies.

TEST LAB

Edited by Mike Hudnall
Reviews by William Harrel

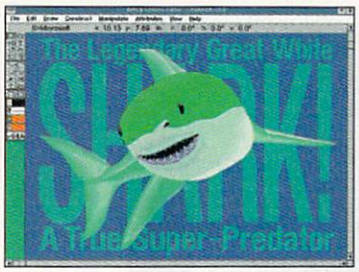
Not long ago, graphics artists and desktop publishers believed that using a Macintosh was the only way to create quality logos, brochure covers, and other graphics—especially full-color drawings. And that may have been true, once. But the Windows draw programs covered in this month's Test Lab have closed the gap.

Until Windows 3.0, PC users were hard-pressed to create sophisticated full-color drawings on their PC-based equipment. The areas where designers need the most strength—display, type control, and printing—were all lacking in power. Now there are high-color and true-color video, Adobe Type Manager and TrueType font rendering, better PostScript printer drivers, color printers priced at under $3,000, and finally, a crop of excellent drawing programs that exploit the potential of Windows.

Of the ten programs reviewed here, some are full-featured applications that can perform almost any graphics function you can think of (and some you couldn't imagine), some are economy packages, and some are specialized illustration packages.

All of these packages claim ease of use—but *ease* is a relative term here. If all you want to do is to create monotone logos and graphics for stationery or a newsletter, or full-color images for your monitor, then learning to use any of these products is easy. However, taking one of them (especially one of the high-end products) to its full potential requires much more than mastering the rudiments of the program. You must, for example, understand several prepress and commercial printing practices, such as color separations, knockouts, trapping, overprinting, and printing to film on a high-resolution imagesetter. These concepts and others, such as halftoning, fall within the realm of the graphics artist and designer. Learning them is nothing like falling off a log.

All ten programs were tested on a 33-MHz 486 with 20MB RAM, a 24-bit display adapter, and a high-resolution 19-inch monitor. Drawings and separations were printed on both a 300-dpi laser printer and a 1270-dpi Linotronic 330. Not all of the programs require this much muscle, but the high-end programs—CorelDRAW!, Micrografx Designer, Adobe Illustrator, Aldus FreeHand, Professional Draw, and Arts & Letters Graphics Editor—really do perform better on a high-



speed CPU with plenty of RAM and a graphics accelerator. The others—Aldus IntelliDraw, Arts & Letters Apprentice, Graphics Works, and Visio—all run well on a 386.

In one way or another, all of these programs let you achieve the same end—camera-ready art. But they take you to that end with varying degrees of efficiency and using different sets of priorities. This is especially true of the advanced products. A few, for example, offer automated draw options for warping or creating 3-D objects. Others concentrate more on full-color prepress output, with features such as monitor calibration and enhanced PostScript separations. Which one is best for you? It depends on your needs. Monitor calibration and enhanced printing, for example, ensure greater color control and fewer prepress mishaps. Automatic drawing features can save hours—especially if you don't know how to draw special effects manually.

All of these programs, except Visio and IntelliDraw (which handle drawing much differently), have the following features in common:

- Bézier curve editing. You can add multiple handles (or nodes) to lines and contour line segments independently for precise drawing and editing.
- Gradient and radial fills. These involve the fading of one color gradually into another. All programs do this automatically.
- Fitting type to a path. This is the aligning of text along a curve or other shape. When done manually, this can be an extremely time-consuming process.
- Tracing bitmaps. This involves turning bitmaps into vector drawings for easier editing and high-resolution printing. (The two scaled-down packages do not have this feature.)
- Clip art libraries. These are canned images you can use as is or edit as needed.

There are, of course, many other common features, such as the ability to align objects on grids or in relation to other objects. Most programs let you draw various shapes or blend one object into another.

Another important feature that most of these programs support is the ability to lock and control multiple layers, or "layering." If you've ever tried to create an image made up of several stacked elements, you will appreciate this feature. With it, you can lock layers into place, name them for easy selection, hide them, copy their attributes to other layers, and so on. Without layering, it can be very tedious to create complex drawings with many overlapping elements.

These are all very good programs, but some are more suited to certain applications than others. A few, for example, excel at giving those of us who are not artistically inclined the ability to draw—and draw well. Others

work better for graphics artists who already know how to draw. Visio and IntelliDraw make creating diagrams and floor plans a snap. And so on.

One problem with trying to categorize these products is that there is such an overlap of features. But here goes: If you are a graphics artist with strong drawing skills and prepress knowledge, you will get the most from Designer, Illustrator, or FreeHand. If you don't draw and need automated drawing features, consider Arts & Letters Graphics Editor, Professional Draw, or CorelDRAW!. For blueprints, floor plans, and diagrams, check out IntelliDraw or Visio.

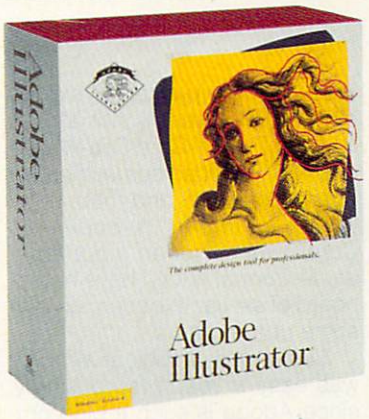
The two low-end draw programs are great for creating color or computer-screen drawings or monotone graphics for newsletters and reports. However, if you are not artistically inclined, you should probably choose one of the programs that support automatic perspective and three-dimensional effects.

Whatever your needs and abilities, this month's Test Lab has information that should help you understand Windows draw software and choose the product that's best for you.

WILLIAM HARREL

Adobe Illustrator 4.01 for Windows
Minimum requirements: 386 PC, 4MB RAM, VGA
Suggested retail price: $695

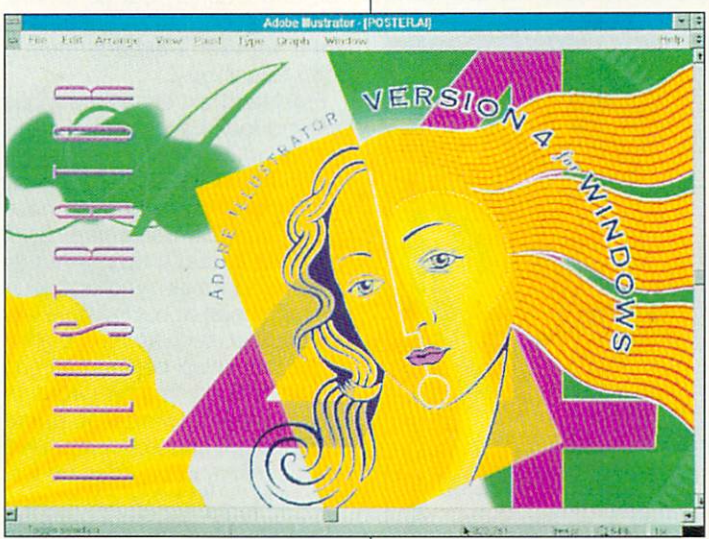
ADOBE SYSTEMS
1585 Charleston Rd.
P.O. Box 7900
Mountain View, CA 94039-7900
(800) 833-6687
(415) 961-4400



ADOBE ILLUSTRATOR 4.01 FOR WINDOWS

Adobe Illustrator 4.01 for Windows is a serious design and illustration package for professionals; it's not for the occasional brochure or newsletter publisher. It takes some dedication to learn to use, but once you master it, there's nothing you can't do.

The Windows version of this program, which is also popular on the Mac, installs easily. There are far fewer clip art symbols and borders (325) and Type 1 fonts (40) bundled with this package than with the other packages. What Illustrator delivers is power. It supports both monitor calibration and enhanced separations (via Adobe Separator), and the program has some highly advanced text-formatting features, such as automatic column flow and sculptured text wraps. Only CorelDRAW!, Professional Draw, and Designer (and desktop publishing software) offer as much formatting control.



Illustrator comes with a full-featured, data-driven overlay for making charts that (though a little slow) eliminates the need to go elsewhere to include professional graphs in your drawings and publications. It supports numerous color models, including CMYK, RGB, PANTONE, FocalTone, Toyo, and TruMatch—all built-in.

Text can be fitted to a curve with Illustrator or with a separate utility, Adobe TypeAlign. TypeAlign allows you to do stupendous special effects with text, such as stretching, warping, adjusting perspective, and creating 3-D effects. However, it works strictly with text (no other objects), and you must import your creations or bring them in on the Clipboard. With either method, you cannot edit the text once it is in Illustrator.

An important strength of Illustrator is that it creates its images in PostScript format. Although all the others allow you to export drawings in PostScript, it is Illustrator's native format. The advantages are many, including compatibility with almost every other draw, desktop publishing, word-processing, and presentation program available, not to mention desktop publishing service bureaus. And even in the best of

the other draw packages, exporting to EPS format is not always foolproof. With CorelDRAW!, for example, you can sometimes export a file to EPS and then, upon trying to import it back into CorelDRAW!, get an *inappropriate file format* error. I have had or heard of similar experiences with some of the others.

Illustrator's technical support was easy to reach (surprisingly, since Adobe is such a big company), and the technician knew his product well. Again, if you want to create simple graphics to include in newsletters, or on-screen, or in slide presentations, you should probably choose something that's easier to use. In fact, only one other program reviewed here, Aldus FreeHand, has as high a learning curve as this one.

Illustrator is still a little slow in places, such as in screen redraws, and its font and clip art selection are limited. But if you plan to do desktop design at this level, you probably already have a bunch of fonts and are not really concerned with clip art. If you're serious about graphics design, Illustrator is worth spending the time to master.

Circle Reader Service Number 371

Aldus FreeHand 3.1
Minimum requirements: 386 PC, 4MB RAM, high-resolution graphics adapter, mouse
Suggested retail price: $595

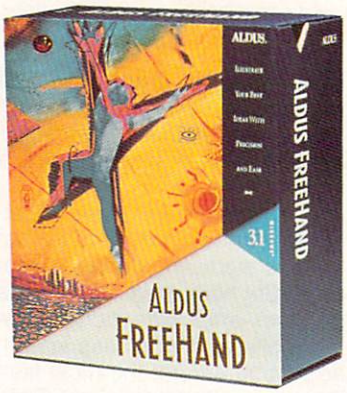
ALDUS
411 First Ave. S
Seattle, WA 98104
(206) 628-2320

ALDUS FREEHAND 3.1

The most popular draw program on the Mac, FreeHand targets professional graphics designers who need four-color prepress precision. This becomes immediately apparent when you open the box.

Along with Aldus's traditionally fine manuals, you'll find color charts and extensive information on separations, trapping, knockouts, and many other prepress and commercial-printing topics. There's even a 75-page booklet devoted to explaining process-color separations and printing to film.

You install FreeHand with Aldus Setup, which you will surely recognize if you use Aldus PageMaker, Aldus Persuasion, or any other Aldus program. Not only

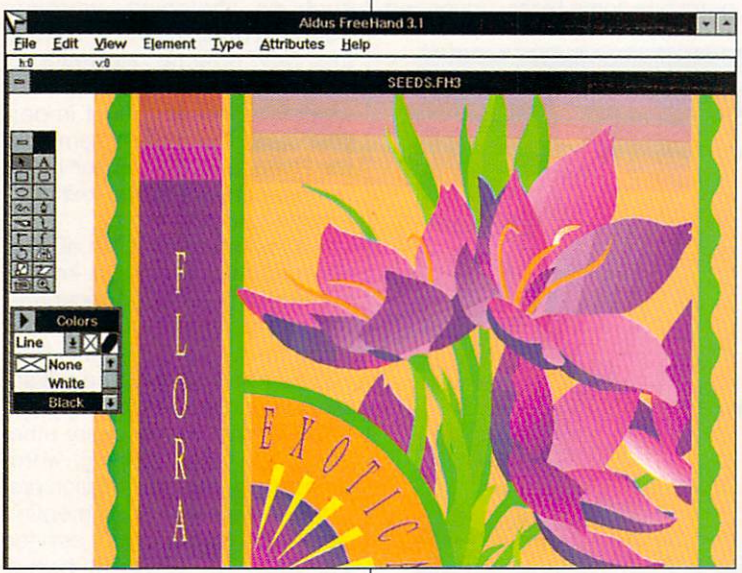


does Setup give you complete discretion over what files are installed, but it also lets you run diagnostics to ensure that your system is ready to use FreeHand. Aldus products share the same import and export filters; if you use several of these products, you can save a good chunk of disk space.

PageMaker users who purchase FreeHand will discover that the two packages have many features in common, such as the pasteboard metaphor, the grabber hand, and the right-mouse-button view control. Like PageMaker, FreeHand is friendly and easy to use. And it comes with an Asymetrix ToolBook online tutorial that demonstrates (a little slowly) most of the program's features.

FreeHand comes with Adobe Type Manager and the standard typefaces (Times, Helvetica, Symbol, and Courier) but no others. This limitation can be inconvenient if you don't already have a good font library.

FreeHand excels as a serious drawing tool. Layer control is extensive, with the number of layers supported being limited only by system memory. You even have the option of assigning brief notations to each layer—highly convenient for making notes to yourself (or others) about invisible layer attributes, such as line weights, or the reasoning behind halftone screen settings. You can work on up to nine drawings at once. Styles can be created for repetitive tasks. FreeHand provides 99 levels of Undo. Monitor calibration and PANTONE matching are built-



DON'T DO YOUR TAXES!

Let Personal Tax Edge® do the work!

Stop the annual hassle of time-consuming and costly tax preparation. Turn to Personal Tax Edge—software that provides everything you need to plan for and file your 1993 federal taxes. Personal Tax Edge was used to complete over 900,000 returns last year and is now available for DOS and Windows.

Accurate and easy!

It's easy to get started. Personal Tax Edge will act like your own professional tax preparer and actually interview you. From your answers, the program will automatically choose the tax forms needed to accurately complete your return.

All the forms you'll ever need.

All commonly used forms and schedules are built right into Personal Tax Edge and can be printed in an IRS-approved manner on your own paper. Just print, sign and you're done!

Avoid errors!

Personal Tax Edge automatically performs all necessary tax calculations eliminating costly errors. Like an accountant, it audits your return, letting you know where you left out information and flagging entries that are common IRS audit triggers.

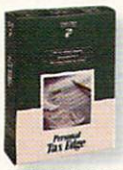
Get immediate answers to your tax questions.

Stop wading through IRS publications! Personal Tax Edge has hot-key access to IRS instructions along with an online library of over 300 tax-saving tips and planning ideas.

Rest easy with the double guarantee!

Personal Tax Edge comes with a 30-day money-back guarantee (excluding shipping). And if Personal Tax Edge makes a calculation error, we'll pay the IRS penalty.

"Grand Prize Winner is Parsons' Personal Tax Edge...agreed 100% with the accountant...took advantage of every tax law that was to the benefit of the taxpayer."
NBC Today Show, March 29, 1993
Rated #1 over TurboTax®, TaxCut®, Easy Tax™ and Am-Tax™



Make tax time easier for only $19!

Normally $49, you can get the Personal Tax Edge *Final Filing Version* (ships January 1994) for just $19 (plus $5 shipping). Input your final figures, print, sign your return and mail. Doing your taxes has never been easier!

Order today! Call toll free

1-800-223-6925

fax your order 1-319-395-7449 or mail the coupon to Parsons Technology.

MICROSOFT® WINDOWS™ COMPATIBLE

☑ **Yes, send me Personal Tax Edge *Final Filing Version* for just $19 (plus $5 shipping).** Also available at retail stores in late January.
Iowa Residents add 5% sales tax. Includes User's Guide and Technical Support.

30-DAY MONEY BACK GUARANTEE
GUARANTEED CALCULATION ACCURACY— OR WE PAY THE IRS PENALTY!

Name _____
Address _____
City _____
State _____ Zip _____
Day Phone (____) _____ Evening (____) _____
Disk Size: ❑ 3.5" ❑ 5.25" **Quantity:**_____
Version: ❑ DOS ❑ Windows
Method of Payment: ❑ MasterCard ❑ American Express ❑ Visa
❑ Discover ❑ Check or Money Order ❑ COD (Add $5)
Card # _____ Exp. ____
❑ **Just send me your FREE software catalog!** Your priority code is 528724A

Personal Tax Edge for DOS and Windows also available at leading software retailers

PARSONS TECHNOLOGY

Product Development Center, One Parsons Drive, PO Box 100, Hiawatha, IA 52233-0100

Personal Tax Edge requires an IBM® or compatible PC with 640K, DOS 3.0 or later and a hard drive. Personal Tax Edge for Windows requires an IBM® or compatible PC running Microsoft® Windows 3.1 or higher, 2MB RAM and a hard drive. Works with all monitors and printers. *Copyright © 1993 Parsons Technology, Inc. All rights reserved. Tax Edge is a registered trademark of Parsons Technology, Inc. All trademarks or service marks designated as such are marks or registered marks of their respective owners.*

in. And printing is enhanced with printer-specific add-ons that provide screening and other important controls to the Windows PostScript printer driver.

Two interesting features are automatic reblending and pressure-sensitive freehand drawing. With automatic reblending, when you change the shape of one or two blended objects, FreeHand automatically redraws the blend. All the other programs (except CorelDRAW!) require you to reblend the objects. Pressure-sensitive freehand drawing lets you simulate traditional pencil and brush strokes with a pressure-sensitive digitizer. And for those of us without graphics tablets, the feature works with a mouse and the right- or left-arrow keys.

I found only two drawbacks to FreeHand—the small sampling of fonts and Aldus's technical support policy. Free support is offered for only 90 days, after which you must purchase additional time or use a 900 number. With a product this sophisticated, your support needs could easily extend well beyond 90 days.

This application's ability to swap files with its Macintosh counterpart can save time at the service bureau, since most service bureaus are still Mac oriented.

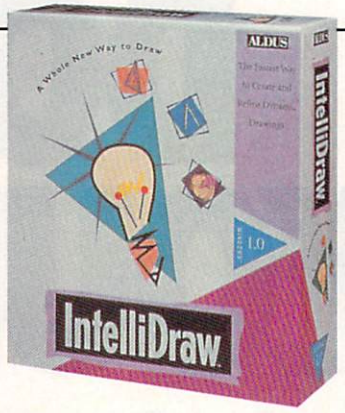
No program, except perhaps Adobe Illustrator, provides better, more predictable output. Its Macintosh artist's-station roots render it ideal for professionals (and would-be professionals). If you need precision, you cannot beat FreeHand.

Circle Reader Service Number 372

ALDUS INTELLIDRAW 1.0

Aldus IntelliDraw 1.0
Minimum requirements: 386 PC, 4MB RAM, VGA, mouse
Suggested retail price: $299

ALDUS
5120 Shoreham Pl.
San Diego, CA 92122
(619) 558-6000



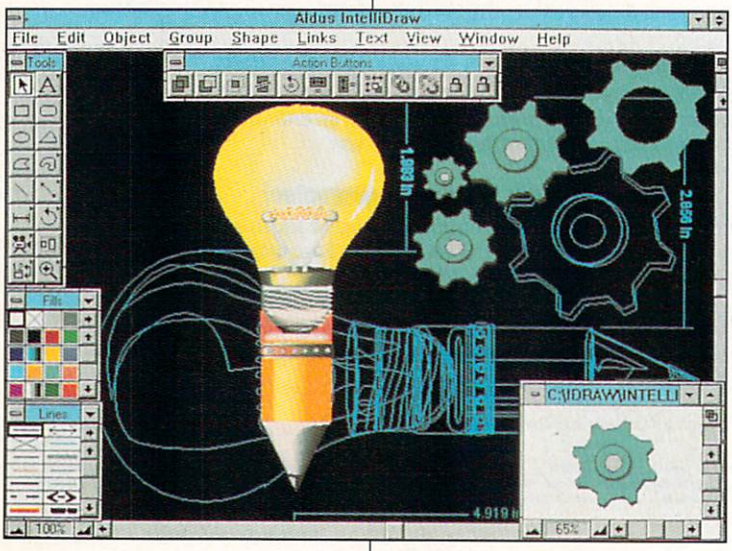
Aldus IntelliDraw combines a draw program with rudimentary CAD and presentation features. The program sports a standard draw-program interface with Bézier drawing and editing, sophisticated technical drawing, and simple animation. Whether you need to create simple drawings to embellish reports or draw up plans to redesign the office, IntelliDraw will make the job easier and more fun.

IntelliDraw is powerful. You'll have to spend some time to master all of its rich, innovative features. But once you get the hang of it, you may prefer IntelliDraw to CorelDRAW! or whatever else you're using now. Aldus takes some of the pain out of learning the program with a well-done 90-minute training video that covers almost all of the program's important features. After watching it, I understood IntelliDraw's sheer power and couldn't wait to get started.

A palette of action buttons lets you lock objects on a page, link them to other objects, group objects and ungroup them, and perform a number of functions that other programs require you to wade through layers of dialog boxes to achieve. IntelliDraw's toolbox is full of easy-to-use drawing tools, such as the Connector tool that allows you to draw lines that automatically snap to and connect objects. Connections can be locked, stretched, rotated, or drawn at right angles.

Another impressive feature is Auto Align. A pair of cross hairs follows your mouse as you draw, like a pair of automatic intersecting rulers. The cross hairs, or guides, run the length of the document window, allowing you to align the object being drawn with other objects. Auto Align also lets you align existing objects in relation to one another. When, for example, two or more objects are exactly centered, the guides form a cross over them, indicating perfect alignment.

Unlike other draw programs (which use grids and an alignment dialog box to accomplish the



We look terrific in basic black...

but you'll find us equally stunning in color.

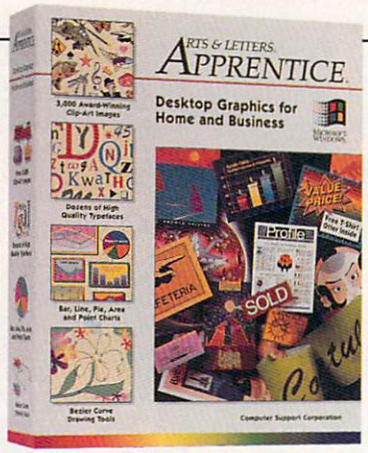
THE ALL-NEW STAR SJ-144: Star's achievements are impressive in black and white. But it's in full color that they really dazzle. Now this same brilliance can be brought to your documents at an incredibly affordable price with the full color, laser-quality Star SJ-144.

Star's all new SJ-144 produces vibrant color images far better than any ink jet. And the SJ-144's black and white print quality is so sharp and clear, it actually exceeds the resolution of most laser printers by 20%. In fact, the SJ-144 is more than a match for most any laser printer in every area but one: price. At a MSRP of just $599,* the SJ-144 offers greater value than any other printer available today. For a free product brochure and the dealer nearest you, call 1-800-447-4700.

star
THE COMPUTER PRINTER

*Dealer price may vary.

Circle Reader Service Number 203



Arts & Letters Apprentice 1.2
Minimum requirements: 386 PC, 2MB RAM
Suggested retail price: $169.00; $29.95 for Jurassic Art

COMPUTER SUPPORT
15926 Midway Rd.
Dallas, TX 75244
(214) 661-8960

same feats), IntelliDraw doesn't force you to turn off the alignment feature to place objects freely, nor do you have to open a dialog box to align objects. The cross hairs constantly inform you where an object is in relation to other objects in your drawing.

Yet another slick feature is the user-defined symbol library. You can add objects to your symbol library and delete objects from it. You can also edit symbols once they are defined. Symbols are linked; if you use the same symbol several times throughout your document (remember that documents can have unlimited pages), you can edit it once in the symbol library, and IntelliDraw will update every occurrence in the document.

There's also a collection of "intelligent" clip art, such as office furniture and landscaping elements. You can add drawers to file cabinets or change the shapes of trees simply by double-clicking on them. For example, you can change a pine tree to an oak with a couple of mouse clicks. Change a chair into a sofa by stretching it. No, you don't get a distorted, elongated chair, as you do with other clip art. Intelligent clip art actually converts the chair to a sofa.

There's one important drawback, though: The program does not support process-color separations. Creating camera-ready art for multicolored documents could be a problem. You can, however, print separate layers, which will give you spot-color separations.

The color separation issue aside, IntelliDraw is a great, innovative draw program, especially for $299. While it's not for commercial prepress applications, it fits neatly into a number of other applications. Like most other Aldus software, it is a solid performer. And since there is an identical Macintosh equivalent, it's easy to distribute your drawings across platforms or on a network.

Editor's note: By the time this review appears, there may be a new version of Aldus IntelliDraw.

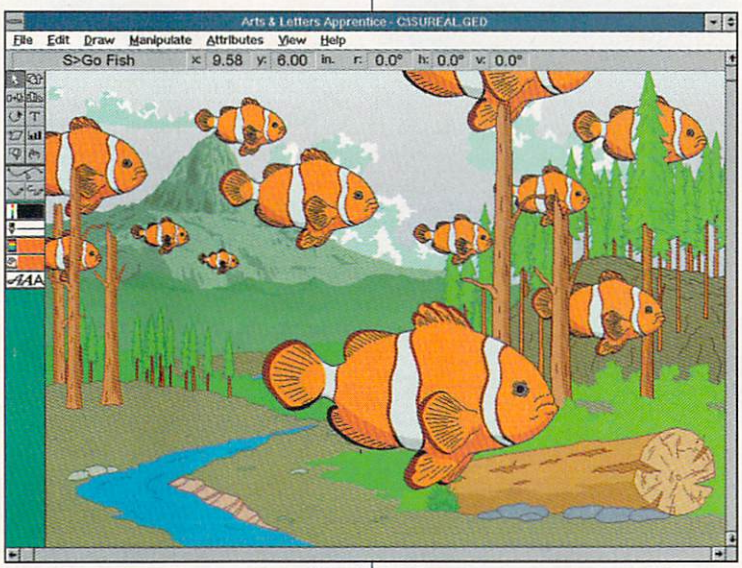
Circle Reader Service Number 373

ARTS & LETTERS APPRENTICE 1.2

Until I had an opportunity to open a few menus and see what was missing, it was hard to tell the difference between Apprentice and its high-end brother, Graphics Editor. The installation is the same, the interface is identical, and so on. With Apprentice, you get the same ease of use, some of the same great clip art images, and the same cataloging system as with the advanced version, for about a quarter of the price. What you do not get with Apprentice is the very sophisticated perspective/warp feature, as many clip art images (3000 rather than 5000), or as many fonts (only 25 instead of 81).

With Apprentice, Computer Support offers styles and a scaled-down graphing option. If your work requires you to do color separations, Apprentice can handle the job; Windows Draw! (the draw program in the other budget-minded package reviewed here, Micrografx's Graphics Works) can't do color separations. As with Graphics Editor, the screen redraw is a little slow. But otherwise, this is a slick graphics program for nonprofessionals. This is also a great program for teaching children about computer graphics. If you're trying to stay within your budget and need a great draw program, check this one out.

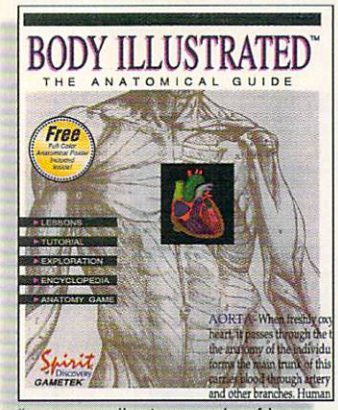
Circle Reader Service Number 374

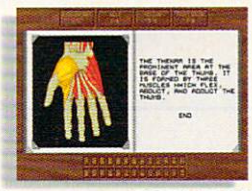


Body Illustrated™

EDUCATIONAL

JOURNEY INSIDE THE HUMAN MACHINE





Designed to be fun and easy to use, BODY ILLUSTRATED is a visual and audio guide to exploring the human anatomy. BODY ILLUSTRATED examines hundreds of body parts from different views and is full of detailed illustrations with stunning realism. With just a click of the mouse, each part is explained in clear, non-technical language. A digitized voice provides the correct pronunciation of anatomical part names, "Instant Help" eliminates the need for referring to the manual.

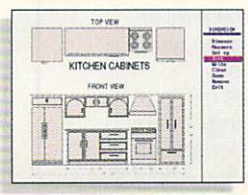
BODY ILLUSTRATED teaches either by lesson method or through the use of the game mode. It is an ideal study guide for students. It's also a valuable reference tool for lawyers, doctors, nurses, clinics, or anyone who needs to know about the human anatomy. Instructors can easily use BODY ILLUSTRATED as an interactive anatomy teaching aid. Included in the box is a full-color anatomical parts poster and a written study guide.

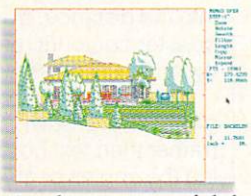
"...an excellent example of how interactive programs can succeed as teaching tools."
PC Magazine

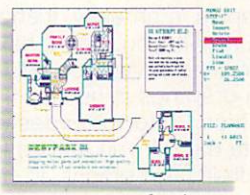
Draft & Print™

THE POWER TO UNLEASH YOUR CREATIVITY

PRODUCTIVITY

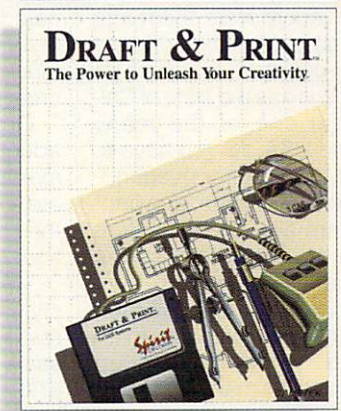






DRAFT & PRINT is a simple, yet powerful drafting program that's easy enough for the beginner, yet powerful enough for the professional. From floor plans and interiors to landscapes, technical illustrations, engineering diagrams, and architectural plans; the tutorial will have you designing on the day you install the program. With DRAFT & PRINT's extensive collection of drawing tools, full layering, powerful text scaling and rotation, your drawings will be far more accurate and to scale than if done by hand. And changes are a snap, saving you countless hours in editing.

Forget about special chips, graphics boards and extra memory, there's no special hardware required. DRAFT & PRINT includes a library of over 400 useful symbols.

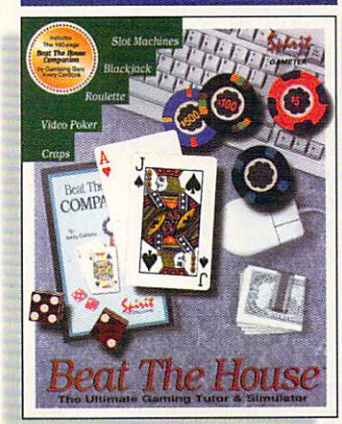


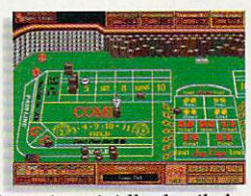
"Overall, it offers the most sophisticated features with a full complement of drawing and editing tools..."
Remodeling News

Beat The House™

ENTERTAINMENT

THE ULTIMATE GAMING TUTOR & SIMULATOR





Prepare yourself for the #1 casino gaming experience! Featuring vividly detailed graphics and superior sound, BEAT THE HOUSE makes you feel like you're part of the gambling action. Not only do you experience the thrill of casino gaming, but you'll also learn the skills and techniques of the professional gambler.

Whether its Blackjack, Craps, Slots, Video Poker or Roulette, BEAT THE HOUSE teaches you how to play. Seasoned gamblers are schooled in strategic counting techniques as well as profitable betting and play strategies. Once you've learned the rules using the pop-up tutor and 160 page study guide, you'll actually play all the games. Up to four player can participate using a mouse or keyboard computer simulated players can add to the excitement— Watch out, they play to win!

"...nearly everything gamblers from amateurs to professional could want in a game."
PC Entertainment

DISCOVER

Spirit of Discovery™

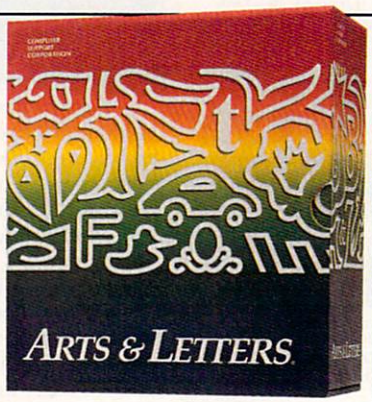
To order call: 800-722-8988

Visa and Mastercard accepted.
Spirit of Discovery 5421 Avenida Encinas Carlsbad,CA 92008
Circle Reader Service Number 154

ARTS & LETTERS GRAPHICS EDITOR 3.12

Arts & Letters Graphics Editor 3.12
Minimum requirements: 386 PC, 2MB RAM (4MB recommended)
Suggested retail price: $695.00; $29.95 for Jurassic Art

COMPUTER SUPPORT
15926 Midway Rd.
Dallas, TX 75244
(214) 661-8960



Of the six full-featured Windows draw programs reviewed in this Test Lab, Graphics Editor is matched only by CorelDRAW! and Professional Draw in ease of use, overall friendliness, and number of features designed to help the nonartist.

The program is built around a collection of 5000 superb clip art images. You can easily edit the images or incorporate them into drawings as is. You should find it simple, for example, to use parts of images, such as the state of California from one of the many maps of the USA. All you have to do is enter a number corresponding to that part of the drawing. The program allows you to store and catalog the images you draw in the same manner.

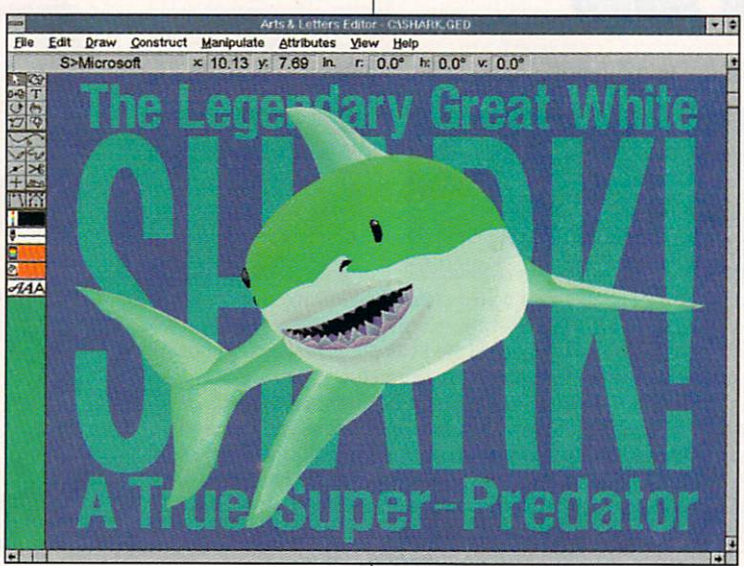
Easy to install, Graphics Editor includes an online manual with an automated "show me" option that demonstrates many of the program's features. However, you must install everything—all clip art and 81 proprietary fonts—in order for the program to run properly. Accordingly, the full installation requires about 12MB.

I found the tutorial to be one of the best I've used. It takes you from the basics to more complicated topics in an easy, friendly style. Even if you don't have much drawing savvy, you will be creating drawings in no time.

Graphics Editor provides an adequate data-driven feature for making charts and graphs. To create a chart, you enter data within the program or import information from spreadsheets.

The program also provides styles for automating repetitive tasks, such as assigning the same attribute to objects in several different drawings. You could, for example, use it to automatically turn a string of text into a logo.

A perspective/warp feature lets you manipulate text and objects in ways that would require much artistic talent otherwise. You can, for example, make objects appear to move into the distance, give them roller-coaster contours, and even wrap them around themselves.



Again, *easy* describes this program—right down to the levers (rather than text boxes) for adjusting the angles of gradients. And if you do have trouble, Computer Support furnishes free technical support. The technician I talked to was a little sketchy on some questions; he had to go off the line to get some answers. But at least he knew what he didn't know.

The absence of monitor calibration and prepress enhancements makes Graphics Editor less appropriate than some of the other draw programs for creating process-color separations. Also, you cannot import and export EPS files or several other kinds of files. Instead, you use a utility called Decipher to convert files to the appropriate format. This arrangement is somewhat inconvenient.

Screen redraws of blends, gradients, and warped elements are too slow. But a math coprocessor version (available free on request) is supposed to speed things up substantially. So if you have a coprocessor or a 486, this may not be a problem.

Graphics Editor is a strong program for nonartists who need to create images in a hurry. Much of the included clip art can be used right out of the box, with little or no modification.

Circle Reader Service Number 375

SoftCollection

ORIGINAL SOFTWARE
SHAREWARE

High Powered Software without the High Price

Manage DoubleSpace Compression from Windows...

with ***DoubleSpace Extensions***, the new software solution for running DoubleSpace at peak performance. With ***DoubleSpace Extensions*** you stay on top of hard disk compression and tune **DoubleSpace's** parameters and specifications right from Windows. Review and monitor DoubleSpace's efficiency using statistical reporting feature and 3D graphs depicting space management.

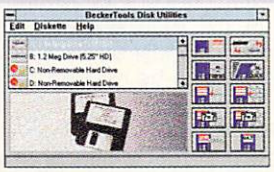
DoubleSpace Extensions lets you:

- Change DoubleSpace parameters easily from Windows
- Monitor compression graphically
- Compress files with simple mouse-clicking
- Defrag compressed drives from Windows

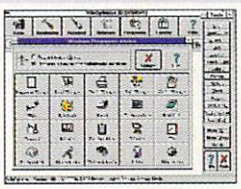
Item# B239 $19.95.

The New SoftCollection from Abacus

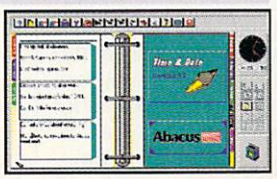
Astronomy Star Finder for Windows!
Turn your PC into a Windows planetarium. Complete database of 10,000 stars (with technical info) from 200 places worldwide.
Item# B215 $19.95.



Work Faster and Easier with Floppies
One-pass diskette copy, multiple diskettes, copy 3-1/2" to 5-1/4" and vice versa, much more.
Item# B211 $18.95.



Windows Tune Up
Analyze and reconfigure your system to supercharge Windows with this slick, convenient group of utilities.
Item# B216 $18.95.



Personal Scheduler & Planner
with ***Time & Date*** gives you easy-to-use, powerful tools to track your schedule and projects. Locate important dates, notes, addresses and phone numbers quickly.
Item# B232 $18.95.

Data Cruncher
Fast access to all compression programs. Here's a simple way to run PKZIP, LHARC, ARJ and others from Windows. Pack and unpack quickly without problems.
Item# B214 $17.95.

The Frugal Desktop Publisher
Create newsletters, brochures, ad literature, and more with this feature-filled Windows page layout package. Drawing, filling, import graphics, change fonts and more.
Item# B217 $19.95.

Run Windows Without a Mouse
Software that cuts the mouse cords from your notebook computer. Navigate with cursor keys. Superfast, adjustable speed, works with all Windows applications.
Item# B212 $19.95.

Wicked Sounds for Windows
Make Windows scream, literally. With sound effects and sound file database manager. Windows becomes lively and fun with 40+ new sounds.
Item# B229 $19.95.

Puzzles, Pranks, Toys and Games
Outrageous puzzles, pranks and games that will make everyone laugh. The most hilarious collection of fun yet for Windows.
Item# B227 $19.95.

Original Software, Not Shareware. More than 25 titles. Available at book and software stores everywhere or have your dealer call us. To order directly call 1-800-451-4319.

Order Toll Free 1-800-451-4319

Abacus

Dept. C1 5370 52nd Street SE, Grand Rapids, MI 49512
Phone: (616) 698-0330 • Fax: (616) 698-0325

Circle Reader Service Number 194

Please rush me the following items:

Item#	Title	Price
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____
___	_____	_____

Subtotal: _____
MI orders include 4% sales tax: _____
In US & Canada add $5.00 shipping: _____
Foreign orders add $13.00 per item: _____
Total amount (US funds): _____

For fast delivery Order Toll Free 1-800-451-4319 EXT. 31 or FAX (616) 698-0325
Or mail this coupon to: Abacus, 5370 52nd Street SE, Grand Rapids, MI 49512

Method of Payment: ❑ Visa ❑ Master Card ❑ Am.Express ❑ Check / M.O.

Card#: _____ Expires: ___/___

Name: _____

Company: _____

Address: _____

City: _____ State: ___ Zip: _____

Phone#: _____ Fax#: _____

❑ Yes, please rush your free catalog of PC books and software. Dept.C1

CORELDRAW! 3.0 AND 4.0

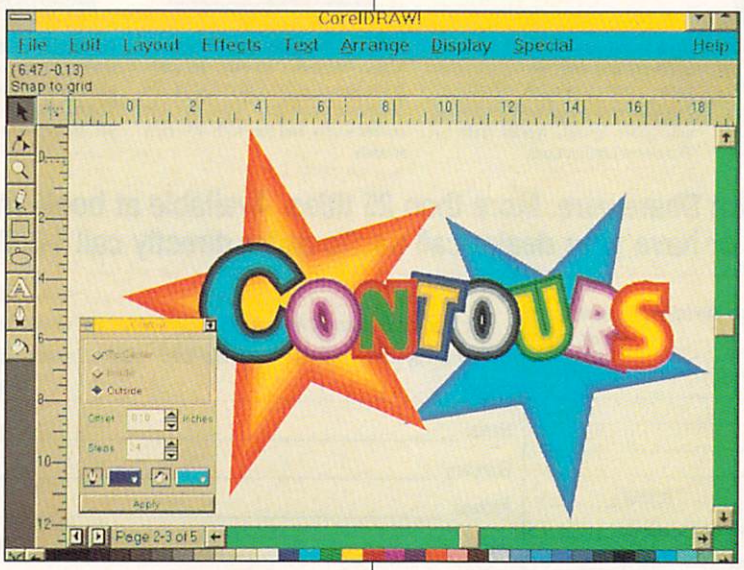
CorelDRAW! is powerful enough for some professionals, yet it also has a wealth of features designed to help the nonartist.

Although the latest version of Corel's popular drawing product is version 4.0, the company is also selling version 3.0. In both packages you get a lot more than just a strong draw program. You get CorelCHART!, a highly sophisticated charting application; CorelPHOTO-PAINT!, a program for creating and editing bitmapped gray-scale and color images; CorelSHOW!, a slide and onscreen presentation program that supports limited animation; CorelMOSAIC!, a program for cataloging drawings and clip art; and CorelTRACE!, a program which turns bitmaps into vectors. Version 4.0 also contains an animation module, CorelMOVE!, for creating animated graphics for onscreen presentations.

And if all this isn't enough, with version 3.0 you get a CD-ROM containing 12,000 clip art images and over 250 Type 1 and TrueType fonts (the floppy version contains 4000 images and just over 150 fonts), and you get a great draw program to boot. Version 4.0 has two CD-ROMs containing over 18,000 pieces of clip art and clip media and 755 fonts.

CorelDRAW! 3.0 and 4.0
Minimum requirements: 386 PC, 4MB RAM (8MB recommended), VGA, mouse or graphics tablet, CD-ROM drive for CD-ROM elements
Suggested retail price: $199 for 3.0 (includes CD-ROM disc and floppy disks), $595 (includes CD-ROM discs and floppy disks)

COREL
1600 Carling Ave.
Ottawa, ON
Canada K1Z8R7
(800) 836-3729



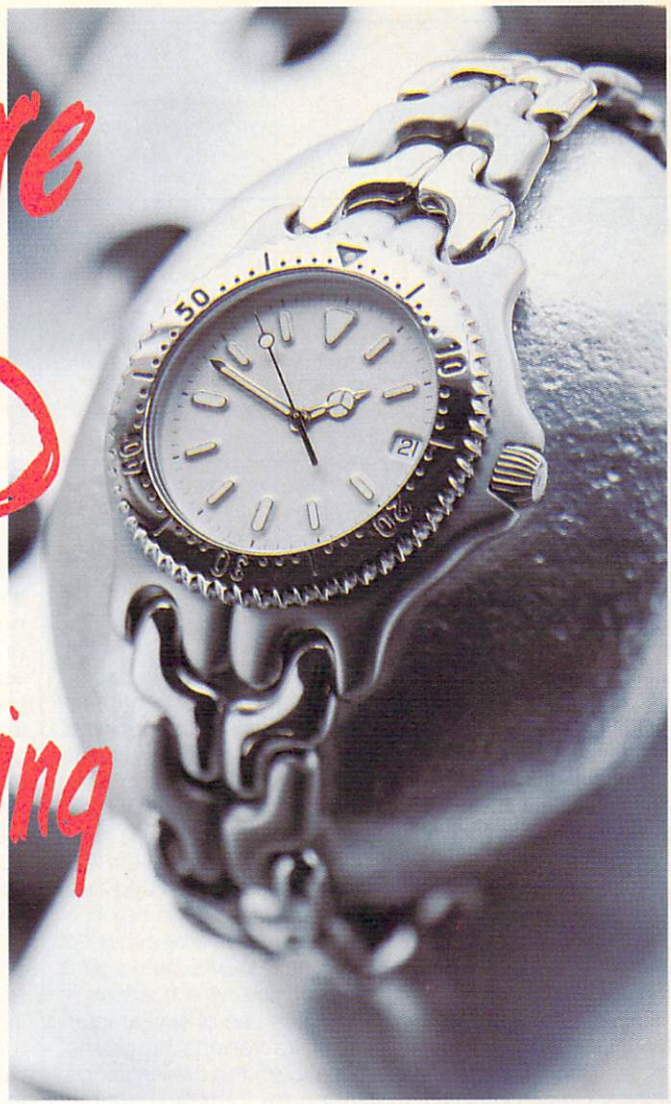
A complete installation requires over 30MB of disk space; however, the installation program lets you load all or any part of the package. The draw program itself includes a spelling checker and thesaurus. Many options have "roll-up" menus that float in the editing area, allowing you to make changes to objects quickly. And when you aren't using these menus, you can roll them up into a title bar and use an arrange command to stack them neatly in corners of the drawing area.

Extrusions, perspectives, blends, and many other features can be created and modified interactively with a mouse, rather than by entering values in dialog boxes, checking the results, and then going back to do it all over again. An interesting feature is the Rainbow option for blends. With it, instead of blending directly from one color to the other, you can reverse the blend on a color wheel and get a rainbow effect. In other words, if you choose two like colors, say light and dark blue, and blend them backwards, you'll get yellows, reds, purples, blues—hundreds of shades, depending on the number of blend steps you choose.

The differences between versions 3.0 and 4.0 are many, but not so extensive that you could not use version 3.0 for all your graphics needs. Version 4.0 supports multiple pages and has some page layout features not found in previous versions. You should look to version 4.0 if you want animation, OCR, and advanced prepress options, and if you want to save color separation configurations for future use. However, each package is a terrific value. While CorelDRAW!'s draw program itself is not necessarily stronger than some of the others reviewed here, the extras make it the best buy.

Circle Reader Service Number 376

What are YOU waiting for?

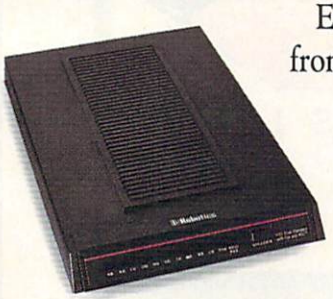


Courier. Life in The Fast Lane.

V.32 Terbo is shipping now. The Courier is U.S. Robotics' premier business modem. And we are proud to announce the jump to V.32 Terbo -- with an astonishing speed of 21,600 bps. Now you can buy any Courier with V.32 Terbo and upgrade to V.Fast for just $199. That includes our top of the line HST Dual Standard model.

The V.32 Terbo supports cellular data transfers at 12,000 bps. And Quick Connect™ lets you start sending over any phone within just seven seconds!

Enjoy all the breathtaking speed, upgradability and performance you'd expect from a U.S. Robotics Courier.



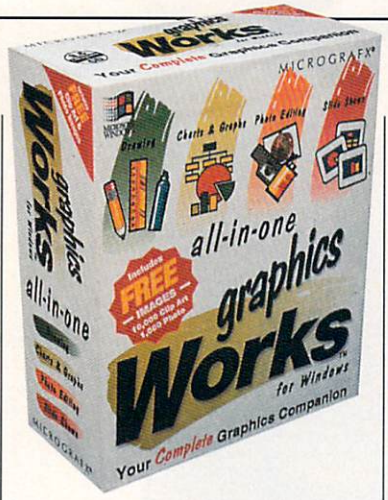
COURIER™ The Business Modem

U.S. Robotics 8100 N. McCormick Blvd. Skokie, Illinois 60076-2999 Tel. 708-982-5010. U.S.Robotics®

U.S. Robotics and the USRobotics logo are registered trademarks of U.S. Robotics, Inc.
Courier is a trademark of U.S. Robotics, Inc.

If you own an older architecture Courier modem, please fax us at (708) 982-0823 to inquire about our trade-in policy.

Circle Reader Service Number 112



GRAPHICS WORKS 1.0

Graphics Works 1.0
Minimum requirements: 386 PC, 4MB RAM, VGA (SVGA recommended), mouse; CD-ROM drive optional for some programs and images
Suggested retail price: $199

MICROGRAFX
1303 E. Arapaho Rd.
Richardson, TX 75081
(800) 676-3110
(214) 234-1769

Looking for ease of use? Then take a look at Graphics Works, built around Micrografx's popular, economical Windows Draw!, a relatively sophisticated vector draw program. Windows Draw! is a scaled-down version of Designer. You get about 80 percent of Designer's functionality for about 10 percent of the price.

Since Windows Draw! doesn't support color separations, trapping, and other commercial prepress options, it won't meet the needs of professional graphics artists, but it's great for most small business and home office settings—everything else you need to create sophisticated vector drawings is included. With Windows Draw! you can rotate, skew, fill, and manipulate Type 1 or TrueType fonts in every way imaginable, which makes this program great for creating logos and special effects.

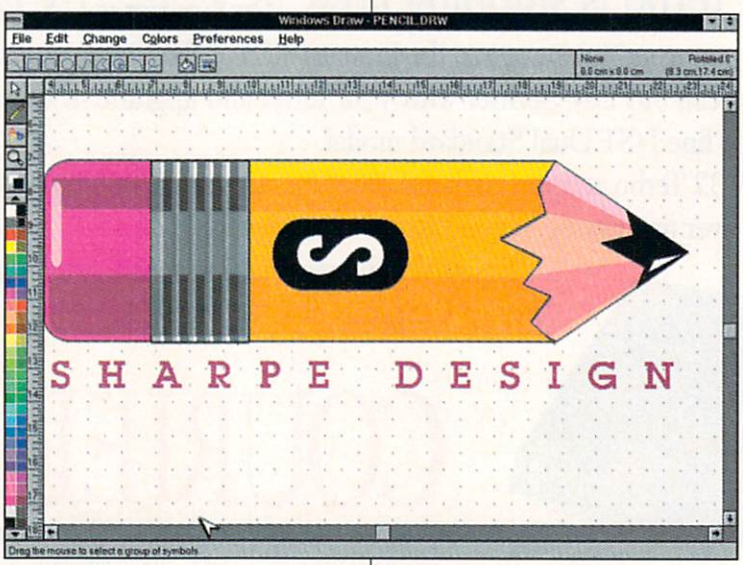
The other applications in Graphics Works include PhotoMagic, a bitmap photograph editor; WindowsOrgChart, for creating organization charts; WinChart, a charting and graphing program; and SlideShow, the standard slideshow module included with Micrografx's high-end draw and presentation packages, Designer and Charisma. There's also a clip art indexing and viewing utility for managing the 10,000 clip art images that come in the package, as well as a photo index and view utility for the 1000 photographs also included. However, to access the bulk of the clip art and photographs, you'll need a CD-ROM drive. (Both a CD-ROM and floppies are included in the box.)

The most impressive aspect of the Graphics Works package is its ease of use, which arises in part from the use of similar interfaces for its various programs. After you learn the basics in one, mastering the others is simple. And there's a Run command on the File menu in each application that lets you access the other Graphics Works applications with a mouse click.

I consider the 10,000 clip art images included on the CD-ROM some of the best available. (Actually, the clip art and the photographs are worth the product's purchase price. Just consider the graphics applications a bonus.) Micrografx has a strong reputation in the graphics industry for superb clip art. You will probably never have to look any further for a suitable image. The options are nearly limitless. There are well-drawn maps, complete with cities and other geographic information; terrific anatomy art; and a collection of business scenes and symbols to suit almost every imaginable situation. And when your documents or presentations call for photographs, surely one of the 1000 24-bit images of nature scenes, people, animals, and business situations will fill the need.

When you buy Graphics Works, you get Micrografx's great support program, which includes 24-hour service during the week and limited hours on weekends. The technicians are very well trained and courteous. This is a strong, easy-to-use draw program. The average small or home-based business can't miss with Graphics Works.

Circle Reader Service Number 377



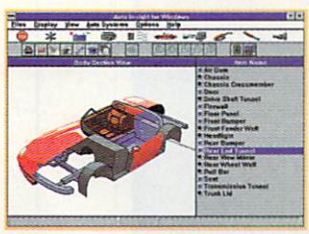
Car & Driver

EXPLORE THE AUTO FROM BUMPER-TO-BUMPER & THE BODY FROM HEAD-TO-TOE.

BOTH WINDOWS™ & DOS VERSIONS INCLUDED!

Use your PC to journey through the automobile and the human body with Auto Insight and Body Insight. With an interactive interface and colorful graphics, these two programs will guide you through the major systems of these miraculous machines.

Detailed high resolution animations show you how intricate parts work together—in action. Pan, Zoom and Search features allow you to closely examine any specific system or part with ease. Thorough descriptions are hyperlinked to colorful illustrations, clearly identifying parts, components and their individual importance.



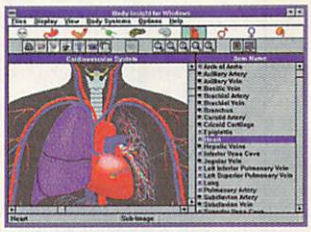
WITH AUTO INSIGHT SOME OF THE TOPICS INCLUDE: *Car Body and Frame, Electrical System, Engine, Steering/Suspension System, Transmission/Drive Train, Car Safety, Electric Cars, Emission Control, Maintaining Your Auto, The History of The Auto, and Effects on the Environment.*

FEATURES INCLUDE:

- *Intriguing animated displays*
- *Unique interactive interface*
- *Extensive database of interesting facts and trivia*
- *Innovative word searching feature*
- *Powerful Pan & Zoom capabilities*
- *Export illustrations to popular printers or to other programs*

SYSTEM REQUIREMENTS:

- *IBM PC or compatible*
- *3 1/2 HD Floppy disk drive, hard disk*
- *For Windows 3.1: 386 or greater, VGA or better*
- *For DOS 3.0 or above: 286 or greater, VGA*



WITH BODY INSIGHT SOME OF THE TOPICS INCLUDE: *Skeletal System, Muscular System, Cardiovascular System, Pregnancy/Birth, Early Development, First Aid Basics, Heart Pacer/By-Pass, Bone Fractures, and Facts on AIDS*
ALSO: COMPREHENSIVE BABY SECTION NOW INCLUDED IN BODY INSIGHT.

AUTO INSIGHT OR BODY INSIGHT ONLY $29.98/EACH. FROM THE DEVELOPERS OF BODYWORKS

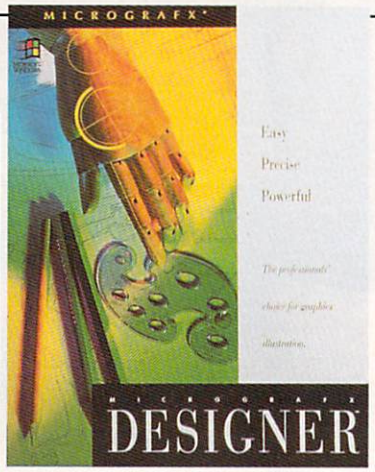
No other interactive reference program offers a more informative or graphically detailed understanding of the car or the body. To order, or for additional information about the Insight Reference Series™, call **1-800-258-0260**

Refer to Code #40183

The PC Zone™ Your Catalog SuperStore

INSIGHT REFERENCE SERIES™

©1993 Informative Graphics Corporation.
Developed and Published by Informative Graphics Corporation.



MICROGRAFX DESIGNER 4.0

Micrografx Designer 4.0
Minimum requirements: 386 PC, 4MB RAM (8MB recommended), VGA, mouse
Suggested retail price: $695

MICROGRAFX
1303 E. Arapaho Rd.
Richardson, TX 75081
(800) 676-3110
(214) 234-1769

Designer targets technical illustrators, graphics artists, and designers, who care more about precision and performance than about a pretty interface. However, Designer's recently reworked interface provides ease of use along with very powerful features.

New features abound. There are so many, in fact, that choosing a few to talk about is difficult. In terms of technical enhancements, the most significant addition is a color separation utility that lets you separate not only Designer files but also any EPS graphic. With this feature, you can trap objects and perform undercolor removal (UCR), dot-gain correction, ink correction, and a myriad of other functions—all of which are prepress options necessary for top-quality reproduction at the print shop. And as with the new version of CorelDRAW!, you can save color separation configurations for future use. If you currently have to repeat the steps required to set up separations each time you print to your service bureau's imagesetter, you'll appreciate this feature.

Speaking of color, no longer must you order optional color palettes from Micrografx. Palettes for PANTONE, FocalTone, and TruMatch systems are provided, and you can create your own. You can also print spot-color separations.

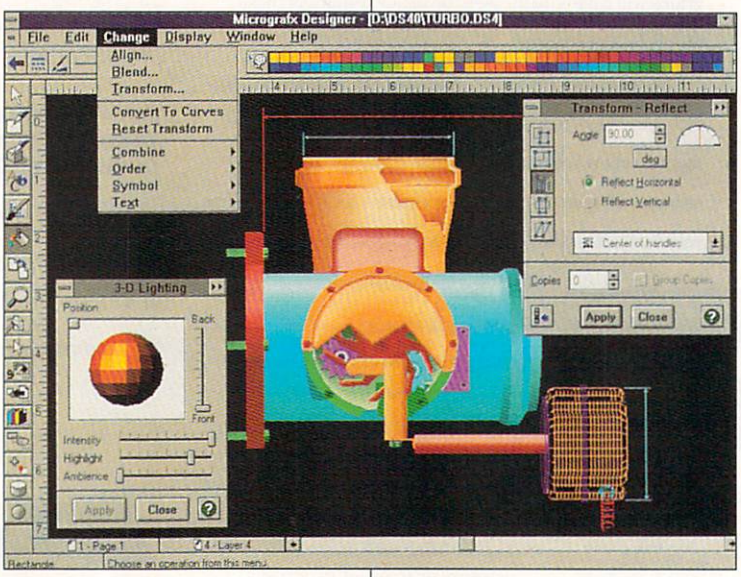
Designer has never had good automatic special-effects features—until this new version, that is. Before, to produce 3-D effects, such as extruded text or objects that look as though they fade off into the distance, you had to have the artistic knowledge and talent to create them. Even graphics artists find this a trial-and-error proposition. Now, creating 3-D objects is a snap with the features Extrude, Rotate, Scale, and Perspective. There's even a new control option that lets you adjust shading according to an imaginary light source. These options make Designer more accessible to the nonartist.

This year's draw programs have become amazingly adept at text handling, and Designer is no exception. You can pour text into frames of any shape, for some interesting effects, such as text that is contoured to fill a star shape and other forms. You can link text containers (or frames), a feature that's similar to jumping text from one page to another in a desktop publishing newsletter layout. (By the way, Designer now supports multiple pages.) The text-on-a-curve and wrap features are enhanced. There's a spelling checker, as well as automatic hyphenation, and no longer must you convert text to curves (an irreversible procedure that leaves text blocks uneditable) before applying gradients and other artistic effects (which means that the text remains editable).

You can perform these wonderful new options with one or all the 250 Type 1 or TrueType fonts shipped with the program.

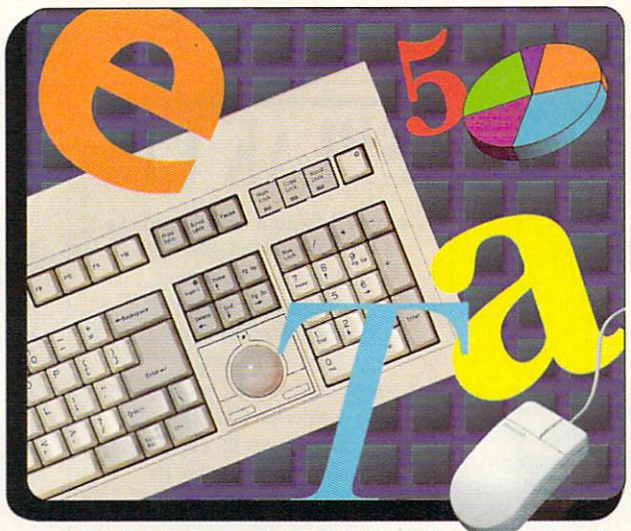
Another useful addition to the Designer package is PhotoMagic, Micrografx's low-end bitmap editor. PhotoMagic is not a full-featured photograph editor, as is the CorelPHOTO-PAINT! module bundled with CorelDRAW! 3.0 and 4.0, but it does allow you to scan directly into the program and perform most bitmap-editing functions.

Designer now supports multiple



Learn Computer Software Within 2 Hours! Just Press Play On Your VCR.

WORD PROCESSING • SPREADSHEET • PRESENTATION GRAPHICS • UTILITIES • DATABASE • OPERATING SYSTEMS • DESKTOP PUBLISHING • PROGRAMMING



Low Cost, Easy-To-Understand Computer Training Videos Make Learning of Complex Software Simple.

Now, Only **$49.95** each (Buy Several and Save Even More.)

Comp·U·Learn℠, the world leader in computer software video training provides you with skilled instructors to teach you and your staff how to effectively use software. Quickly and easily learn software fundamentals and advanced techniques with this proven method.

Now you can avoid the use of tedious reference books, eliminate attendance at costly seminars and learn at your own pace. You can review instruction as often as you like by simply rewinding the video. Do it where you work and perform best—in the comfort of your home or office.

Learn with higher retention, improve your effectiveness and that of your entire organization. Order now!

Learn from the experts and watch your knowledge soar!

RISK FREE 30 DAY PREVIEW OF VIDEOS!
Watch these videos at yor leisure for a full 30 days. Learn and profit from them. If you are not entirely satisfied, return them for a complete refund.

CALL TODAY!
1-800-653-7700

VISA MasterCard

More Than 80 Computer Instruction Videos Available To Meet All Of Your Training Needs!

WordPerfect 6.0

Learn all about the new improved version of WordPerfect. Quickly and easily understand how to use function keys, text edit, change type faces, benefit from the use of a mouse, file manager and much more.

- ❑ 101 WordPerfect 6.0, Introduction $49.95
- ❑ 102 WordPerfect 6.0, Advanced $49.95
- ❑ 103 WordPerfect 6.0, Update $49.95
- ❑ 104 WordPerfect 6.0, Secrets $49.95
- ❑ 105 WordPerfect 6.0, Desktop Publ $49.95

❑ Special Group Price **$199.95**
Numbers 101, 102, 103, 104 & 105

Excel 4.0

Now you can make this powerful spreadsheet software work for you. Tips on how to make a worksheet template, use Excel macros, learn how icons help save time and increase your productivity, plus much more.

- ❑ 201 Excel 4.0, Introduction $49.95
- ❑ 202 Excel 4.0, Advanced $49.95
- ❑ 203 Excel 4.0, Macros $49.95

❑ Special Group Price **$119.95**
Numbers 201, 202 & 203

Windows 3.1

Harness the power of this revolutionary software to quickly and intelligently navigate through large amounts of work. Learn how to use the program manager, arrange icons, create program groups, fast application switching and much more.

- ❑ 401 Windows 3.1, Introduction $49.95
- ❑ 402 Windows 3.1, Advanced $49.95
- ❑ 403 Windows NT $49.95

❑ Special Group Price **$119.95**
Numbers 401, 402 & 403

Other Popular Training Videos To Help You Learn Quickly and Improve Productivity.

Word Processing:
- ❑ 106 Word For WIN 2.0, Intro
- ❑ 107 Word For WIN 2.0, Adv
- ❑ 108 Word For WIN 2.0, Desktop Publ
- ❑ 109 WordPerfect 5.1, Intro
- ❑ 110 WordPerfect 5.1, Adv
- ❑ 111 WordPerfect 5.1, Secrets
- ❑ 112 Ami Pro 3.0

Spreadsheet:
- ❑ 204 Lotus 1-2-3, Intro (any vers.)
- ❑ 205 Lotus 1-2-3, Advanced
- ❑ 206 Lotus 1-2-3 Windows, Intro
- ❑ 207 Lotus 1-2-3 Windows, Adv
- ❑ 208 Improv, Introduction
- ❑ 209 Improv, Advanced
- ❑ 210 Quattro Pro 4.0, Introduction
- ❑ 211 Quattro Pro 4.0, Advanced
- ❑ 212 Quattro Pro WIN, Intro
- ❑ 213 Quattro Pro WIN, Advanced

Operating Systems:
- ❑ 404 DOS 6, Introduction
- ❑ 405 DOS 6, Advanced
- ❑ 406 Intro to PC Computers

Database:
- ❑ 301 Access, Introduction
- ❑ 302 Access, Advanced
- ❑ 303 Fox Pro 2.5, Intro
- ❑ 304 Fox Pro 2.5, Adv
- ❑ 305 FoxPro WIN 2.5, Intro
- ❑ 306 FoxPro WIN 2.5, Adv
- ❑ 307 Paradox 4.0, Intro
- ❑ 308 Paradox 4.0, Adv
- ❑ 309 Paradox Windows, Intro
- ❑ 310 Paradox Windows, Adv
- ❑ 311 dBase IV, Introduction
- ❑ 312 dBase IV, Advanced
- ❑ 313 ACTI For Windows

Desktop Publishing:
- ❑ 501 Pagemaker 5.0, Intro
- ❑ 502 Pagemaker 5.0, Adv
- ❑ 503 Pagemaker 5.0, Secrets
- ❑ 504 CorelDraw 4.0, Intro
- ❑ 505 CorelDraw 4.0, Adv
- ❑ 506 CorelDraw 4.0, Integration

Presentation Graphics:
- ❑ 601 Harvard Gr 3.0, Intro
- ❑ 602 Harvard Gr 3.0, Adv
- ❑ 603 Harvard Gr WIN, Intro
- ❑ 604 Harvard Gr WIN, Adv
- ❑ 605 Powerpoint 3.0, Intro
- ❑ 606 Powerpoint 3.0, Adv
- ❑ 607 Freelance WIN, Intro
- ❑ 608 Freelance WIN, Adv

General Utility:
- ❑ 701 PC Virus, Prevention

Programming:
- ❑ 801 Programming in C
- ❑ 802 Programming in C++
- ❑ 803 Prog. in Visual Basic

NetWare:
- ❑ 901 NetWare 3, Installation
- ❑ 902 NetWare 3, Setup
- ❑ 903 NetWare 3, Admin.
- ❑ 904 NetWare 3, Volume 1
- ❑ 905 NetWare 3, Volume 2
- ❑ 906 NetWare 3, Volume 3

The average running time of each video is 60 to 90 minutes. For running times and additional titles call toll-free.

Prices For All Videos:

Any One Video	U.S. $49.95 each	(S&H $5)
Any Three Videos	U.S. $43.95 each	(S&H $8)
Any Six Videos	U.S. $39.95 each	(S&H $11)
Any Ten Videos	U.S. $34.95 each	(S&H $15)

Call for prices on larger quantities.

ORDER TOLL-FREE

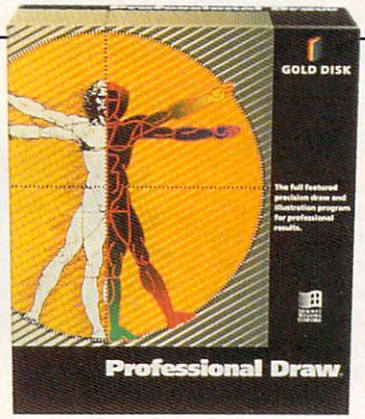
1-800-653-7700 VISA MasterCard

Or Send a Check or Money Order To—

Comp·U·Learn℠
THE LEADER IN COMPUTER VIDEO TRAINING
621 Southwest Alder Street, Suite 700
Dept. 702
Portland, OR 97205, U.S.A.

Circle Reader Service Number 146

©Copyright 1993, Comp·U·Learn℠ All Rights Reserved.



Professional Draw 1.0
Minimum requirements: 386 PC, 2MB RAM, VGA
Suggested retail price: $495

GOLD DISK
5155 Spectrum Way, Unit 5
Mississauga, ON
Canada L4W5A1
(800) 465-3375

levels of Undo and Redo. It's also an OLE (Object Linking and Embedding) client and server. You can create onscreen presentations and slides from drawings and use Designer to show your presentations, or you can use Designer as a stand-alone viewing utility that you can take on the road.

Designer is known for its precision, and version 4.0 lives up to that reputation. According to Micrografx, object placement is accurate to within one micron, and the program supports printer resolutions up to 24,600 dpi.

Not for the faint of heart, full-featured Designer is aimed squarely at the professional.

Circle Reader Service Number 378

PROFESSIONAL DRAW 1.0

At $495, Professional Draw costs less than many of the other programs reviewed here, and although it does not have all of the combined features of the applications in CorelDRAW!, overall it is at least as good as that program. Gold Disk is a strong company and makes great software. Professional Draw is no exception.

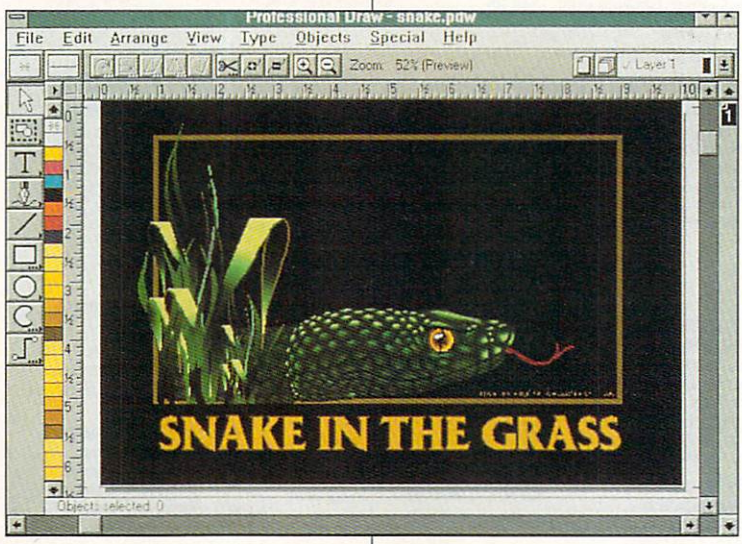
The program installs easily and lets you decide which files to load, including files for CorelDRAW! 2.*xx* WFN fonts, TrueType fonts, Professional Draw proprietary fonts, or the 150 Type 1 fonts that come with Professional Draw. In fact, Professional Draw is the only draw program here that can import CorelDRAW! 3.0's CDR format. It also sports many of CorelDRAW!'s automatic drawing features, such as Perspective, Extrude, and Envelope. It supports interactive mouse-manipulation and light-source adjustments, such as those found in CorelDRAW! and Designer. Radial graduated fills and light source can be adjusted with levers, rather than with obscure values in dialog boxes that make sense only to mathematicians.

A feature unique to Professional Draw is its extensive snap-to controls. You can place lines precisely—snapping to a corner, on a circle tangent, parallel to each other, perpendicular to each other, at center, and at midpoint.

But what really sets this program apart from CorelDRAW! 3.0 is its advanced printing options. From within the Print dialog box, you can set knockouts, traps, overprints, and many other options. Trap settings include choke and spread amounts for each color, whether spot or process. Halftone settings include control of dot shapes, ten of which are predefined or user-defined. You can set color brightness and contrast, color balance, gray-scale conversion, and posterization. Drawings can be converted to gray scale, spot colors, or process colors automatically, and you can invert them.

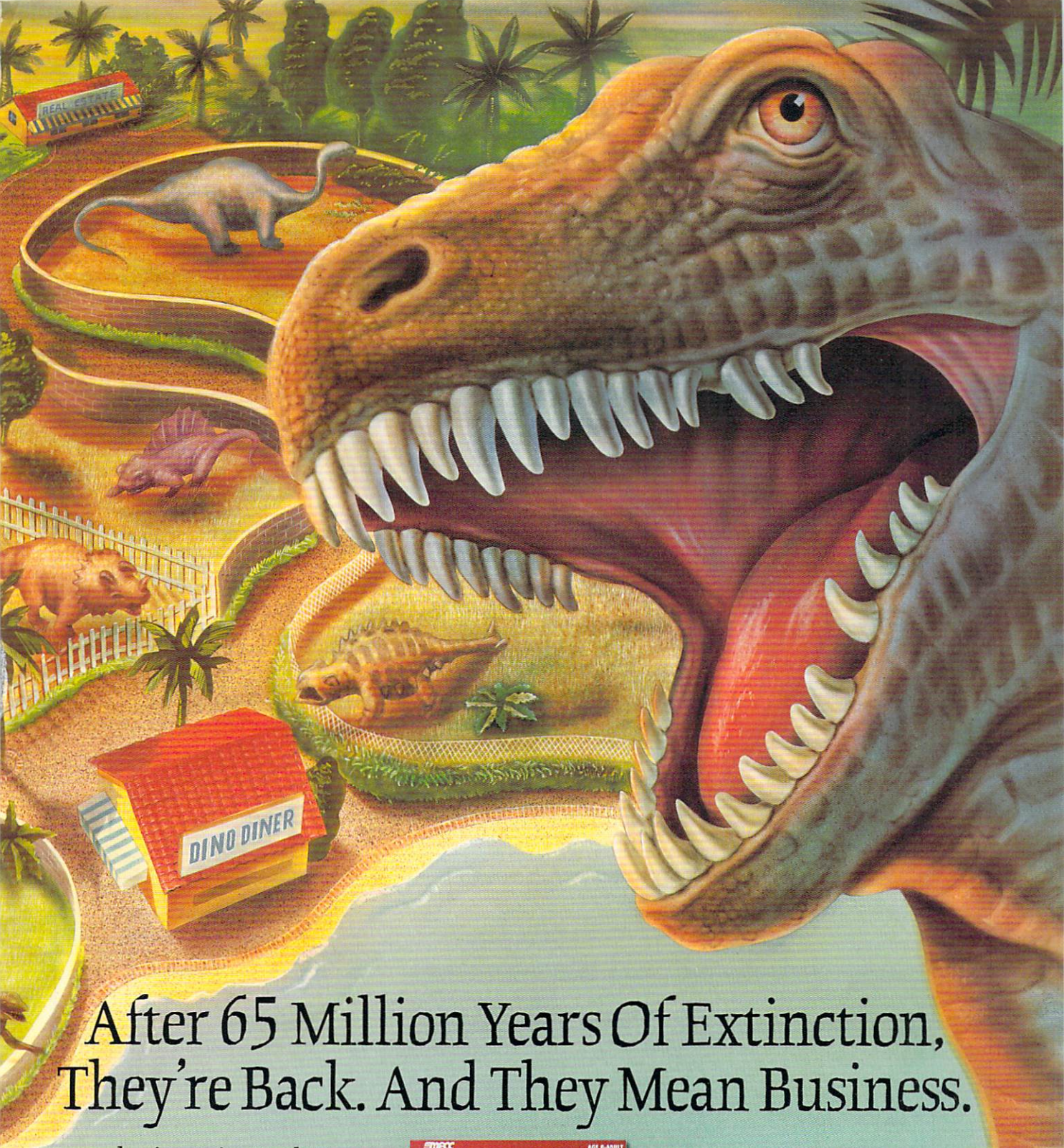
If all you need is a strong, easy-to-use, and moderately priced draw program, there is really no reason not to buy Professional Draw.

Circle Reader Service Number 379



SPEAK UP!

Is there a feature topic you'd like to see covered in COMPUTE? Let us know by calling **900-285-5239** (sponsored by Pure Entertainment, P.O. Box 186, Hollywood, California 90078). The call will cost 95 cents per minute, you must be 18 or older, and you must use a touch-tone phone.

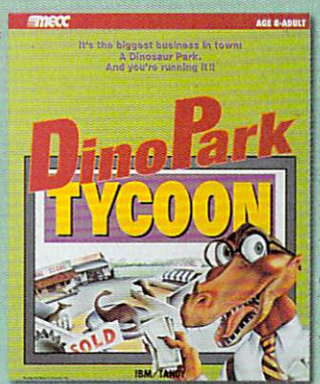


After 65 Million Years Of Extinction, They're Back. And They Mean Business.

Introducing DinoPark Tycoon™ Software Program For Kids.

What could be more exciting than a dinosaur amusement park? *Running it!*

With DinoPark Tycoon™ your child will discover more than the differences between a Tyrannosaurus Rex and an Allosaurus. Your little tycoon will need to decide what kind of land to buy, how to set ticket prices, even what dinosaurs attract the biggest crowds.



While building a DinoPark empire, kids sharpen math, science and problem solving skills without even noticing. It's no wonder DinoPark Tycoon comes from the number one educational software company for kids. New DinoPark Tycoon, from the makers of The Oregon Trail.®

mecc

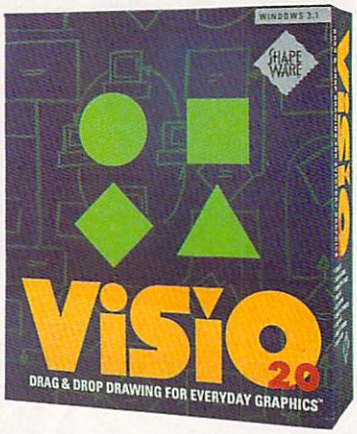
Circle Reader Service Number 113

© 1993 MECC

VISIO 2.0

Visio 2.0
Minimum requirements: 386 PC (20 MHz or faster), 4MB RAM, VGA
Suggested retail price: $129 through December 1993, then $299; $79 for upgrade from version 1.0

SHAPEWARE
1601 Fifth Ave., Ste. 800
Seattle, WA 98019
(800) 446-3335



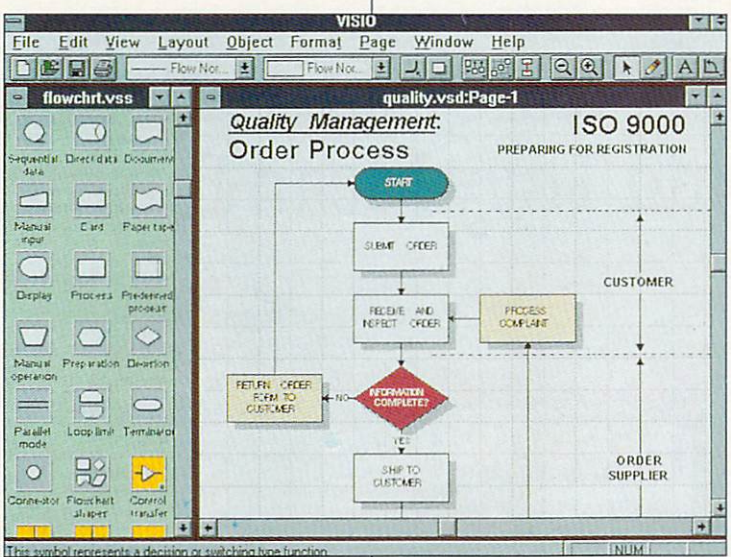
Visio's approach to drawing is entirely different from the approaches taken by other programs reviewed here. (IntelliDraw does, however, have many of Visio's drag-and-drop and smart-graphics features.) Instead of calling it a drawing program, the publisher (Shapeware Corporation) calls it shapeware. This product is designed for business users who don't know how to draw. The concept is that you create business drawings—floor plans, diagrams, flow charts, and so on—by combining predefined shapes. This approach, though somewhat limited, is very effective.

Shapeware calls Visio's approach drag-and-drop drawing. To create drawings, users drag predefined shapes from job-related stencils, or palettes of shapes, and drop them onto the drawing page. Simply by moving objects onto a page, you make your drawing come to life. I created a complicated organization chart in no time, without spending much time in the documentation.

Visio is OLE (Object Linking and Embedding) aware, which means that you can embed drawings in, and link them to, other applications, such as your PowerPoint presentations or PagePlus layouts. Text is integrated. All you do is select an object and start typing. The text is automatically centered in the object. You can create master shapes and copy them throughout your drawing; when you change the master, all copies are automatically updated (a feature known as cloning in some other programs).

Styles let you predefine frequently used formats, such as text attributes, line weights, fill patterns, and so on. Once a style is defined, all you do is change it to automatically update all other objects formatted with the same style. You can set your measurements system to inches and feet, metric units, or one of several other units.

The options Glue and AutoConnect allow you to draw a line between two shapes, then reposition them without breaking the connection. Connecting lines stretch, contract, and change angle perfectly when shapes are repositioned. The AutoConnect feature lets you connect objects automatically.



Visio performs its magic with shapes, or clip art, called SmartShapes. SmartShapes can assume different forms, colors, proportions, and other properties, depending on the context in which you use them. You can use them as Shapeware has defined them, or you can modify them to suit your needs. Each shape has its own spreadsheetlike form you can edit to modify its behavior.

Visio comes with several predefined shapes, and you can buy several themed collections from Shapeware. The collections include Marketing, Space Planning, Home Planning, and Landscape Planning, as well as several others. Or you can purchase a book that shows you how to develop your own Visio shapes.

Visio must be a popular product. I called technical support several times and had to wait for a long time on the line each time. However, when I did get through, my questions were answered clearly and courteously. I couldn't find a problem the technician couldn't solve.

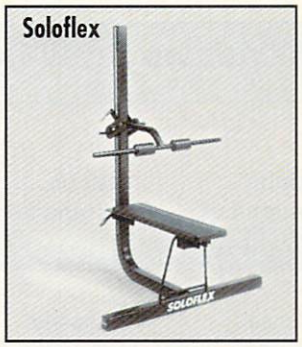
If you need a program designed to help you create diagrams and flow charts, this is a good one.

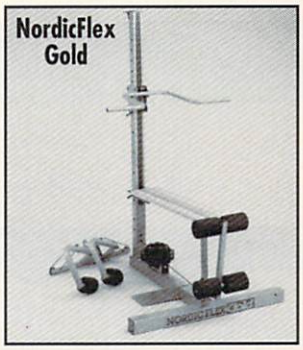
Circle Reader Service Number 380

HEALTHMAX™ BEATS SOLOFLEX® AND NORDICFLEX GOLD™! COSTS $600–$700 LESS!

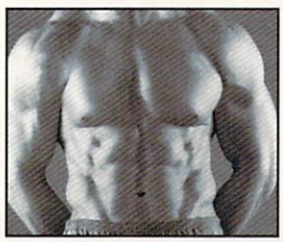
9 Powerful Reasons to Choose **HEALTHMAX** as Your Total-Body Fitness System.

Pay in 9 easy installments of $36.56!





THE REASONS	HEALTHMAX	SOLOFLEX	NORDICFLEX GOLD
1 Low price	☑ YES **$329** (plus $49 S/H)	☒ NO **$995** (plus $105 S/H)	☒ NO **$999** (plus $99 S/H)
2 Easy to use	☑ YES No assembly/ disassembly required between exercises.	☒ NO Requires assembly/disassembly between exercises.	☒ NO Requires assembly/disassembly between exercises.
3 Leg Extension Unit included	☑ YES Permits both leg extensions and lying leg curls.	☒ NO Costs $200 extra.	☑ YES, **BUT...** Leg unit included doesn't permit lying leg curls.
4 Butterfly Unit included	☑ YES No extra cost.	☒ NO Costs $200 extra.	☑ YES, **BUT...** You must assemble before each use, and disassemble to use bench press.
5 Strength conditioning for all five major muscle groups	☑ YES **HEALTHMAX** strengthens all five: arms, legs, abdominals, back and pectorals.	☑ YES, **BUT...** You must purchase $400 in extra accessories to do comparable exercises for legs and pecs.	☑ YES, **BUT...** Why would you pay $700 more than **HEALTHMAX**?
6 Comfortable bench	☑ YES Padded bench is a full 47" long, 12" wide, and a comfortable 20" high.	☒ NO Padded bench is only 40½" long, making some lying down exercises awkward.	☒ NO Padded 40" bench is short, narrow (only 9" wide), and too high (24") off the ground.
7 Hydraulic cylinder resistance system	☑ YES Adjusts to your personal resistance level with a simple twist of a dial.	☒ NO Uses rubber bands which must be changed to vary resistance level.	☒ NO Uses complicated cord/pulley/mechanical resistance system.
8 Full refund of return freight if unit returned	☑ YES If not satisfied, we will refund your cost, shipping/handling charges, and all return freight!	☒ NO You pay over $85 to return. It must go by truck to Oregon!	☒ NO You pay about $65 to return by UPS.
9 Payable in installments	☑ YES 9 easy installments of just $36.56! ($49.00 S/H added to first installment.)	☑ YES, **BUT...** You pay $39 per month for the next *2 YEARS!*	☑ YES, **BUT...** At 4 payments of $250, each installment is almost as much as the total cost of a **HEALTHMAX**!



When you compare, the choice is easy... it's HEALTHMAX!

Let's face it, when all is said and done, what you really want is a body like this. Until now, that meant spending $1,000 or more for a Soloflex or NordicFlex Gold. But now the secret is out... **HEALTHMAX** gives you as much —and more— for up to $700 less! So call today to get the hard body you want for just $329. And while you're at it, take the $600–$700 you'll save and buy yourself a reward.

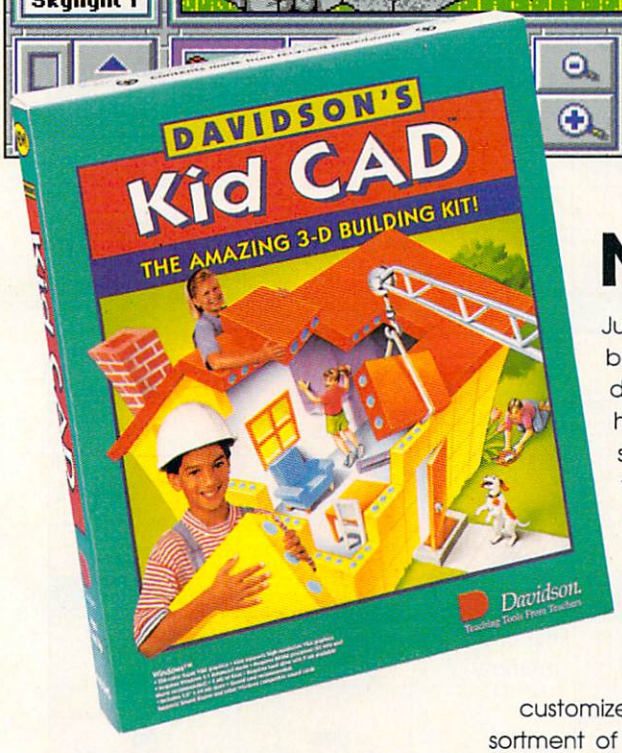
CALL TOLL-FREE FOR A 30-DAY NO-RISK HOME TRIAL: 1-800-458-4652 Ext. 638-1296

NordicFlex Gold is a trademark of NordicTrack, Inc.
Soloflex is a registered trademark of Soloflex, Inc.

HEALTHMAX™
47 Richards Avenue • Norwalk, CT 06857

Circle Reader Service Number 198
©1993 MBI

Windows Draw Program Features					
	Adobe Illustrator 4.01	**Aldus FreeHand 3.1**	**Aldus IntelliDraw**	**Arts & Letters Apprentice 1.2**	**Arts & Letters Graphics Editor 3.12**
LAYERING					
Number of layers supported	unlimited	unlimited	unlimited	unlimited	unlimited
Layer control and locking	no	yes	yes	no	yes
Layer notations	no	yes	yes	no	no
TYPESETTING OPTIONS					
Number of fonts included	40	13	0	25	81
Paragraph text	yes	yes	yes	no	yes
Creates fonts	no	no	no	no	no
AUTOMATIC DRAWING FEATURES					
Charts and graphs	yes	no	yes	yes	yes
Imported fills	no	no	no	no	no
Extrude (3-D)	no	no	no	no	no
Perspective	no	no	no	no	yes
Macros	no	no	no	no	no
Styles	yes	yes	no	yes	yes
Number of undos	1	99	99	1	9
PRINTING OPTIONS					
Batch printing	no	no	no	no	no
Enhanced PostScript printing	yes	yes	no	no	no
Enhanced process-color separations	yes	yes	no	no	no
Monitor calibration	yes	yes	no	no	no
MISCELLANEOUS OPTIONS					
Number of multiple drawings	20	limited by memory	unlimited	1	1
PANTONE Matching System (PMS)	yes	yes	no	no	no
Focoltone color matching	yes	no	no	no	no
Cataloging of clip art and drawings	yes	no	no	yes	yes
Number of clip art images included	375	500+	650*	3000	5000
*Clip art is dynamic; changes shape as needed.					



Ages 7 and Up

No hard hat required!

Just grab your mouse and start building! This amazing 3-D design studio lets you create houses, forts, gazebos, and all sorts of structures with electronic building blocks that click into place. And with **Kid CAD**, building is only the beginning. You can paint and decorate everything in sight, including the kitchen sink! Then fill your customized creation with a huge assortment of people and pets, furniture and ferns—or even a dinosaur.

Kid CAD's 3-D Virtual Environment lets you change your perspective. View your house from the backyard or peek through the front door. With the simple click of a button you can zoom in or out, switch from a bird's-eye view to eye level, or circle around to see your house from a different angle.

Plus, **Kid CAD** is loaded with sensational sound effects that make building as fun as it sounds!

Suggested Retail Price:
$49.95 Windows

MICROSOFT® WINDOWS™ COMPATIBLE

ORDER TOLL FREE
(800) 545-7677 or (310) 793-0600

Look for these other award-winning Davidson Kid Tools!

Davidson's Kid Works™ 2
The Creativity Kit That Writes, Paints, and Talks!

Davidson's Kid Keys™
The Magical Typing Tutor

Davidson.
Teaching Tools From Teachers

Circle Reader Service Number 106

Available at Babbage's, Best Buy, CompUSA, Egghead Software, Electronics Boutique, Software Etc., and other fine retailers. Windows™ is a trademark of the Microsoft Corporation.

Windows Draw Program Features					
	CorelDRAW! 3.0 and 4.0	Graphics Works	Micrografx Designer 4.0	Professional Draw	Visio 2.0
LAYERING					
Number of layers supported	unlimited	unlimited	32,767	unlimited	unlimited
Layer control and locking	yes	no	yes	yes	yes
Layer notations	version 4.0	no	yes	no	yes
TYPESETTING OPTIONS					
Number of fonts included	200 and 755	32	289	150	0
Paragraph text	yes	no	yes	yes	yes
Creates fonts	yes	no	no	yes	no
AUTOMATIC DRAWING FEATURES					
Charts and graphs	yes	yes	no	no	yes
Imported fills	yes	no	yes	yes	no
Extrude (3-D)	yes	no	yes	yes	no
Perspective	yes	no	yes	yes	no
Macros	no	no	no	no	no
Styles	yes	no	yes	yes	yes
Number of undos	1 and 99	1	99	1	0
PRINTING OPTIONS					
Batch printing	with CorelSHOW!	no	yes	yes	no
Enhanced PostScript printing	yes	yes	yes	yes	no
Enhanced process-color separations	yes	no	yes	yes	no
Monitor calibration	yes	no	yes	no	no
MISCELLANEOUS OPTIONS					
Number of multiple drawings	1	1	limited by memory	unlimited	unlimited
PANTONE Matching System (PMS)	yes	no	yes	yes	no
Focoltone color matching	yes	no	yes	yes	no
Cataloging of clip art and drawings	yes	yes	yes	yes	yes
Number of clip art images included	18,000	11,000	13,740	1000+	2300

Give Your Joystick a Thrill.

In the early 21st century, staged fighting has become a lucrative profession for female hardbodies, with dozens of legal arenas in the city. But for the leanest, meanest warriors, the real money comes from the illegal bouts held outside the city. It's the hottest day of the summer and you're baking inside a dilapidated warehouse. You — and your opponent — wear the latest in MECHA armor. The best fighting armor in the world.

METAL & LACE

THE BATTLE OF THE ROBO BABES

This won't be any picnic. With the intense heat and action, you'll both end up in less than full body dress.

It's dream babes in heavy armor battling for prize money — action packed, arcade style fun for your PC. But be warned — with its intense violence and voluptuous women, Metal & Lace: Battle Of The Robo Babes is for mature audiences only. And not for the faint hearted. Available now at your nearest dealer or call **1-800-258-MEGA.** Or write Megatech, P.O. Box 11333, Torrance, CA 90510. Visa, Mastercard, checks accepted.

System requirements: 286-20 or faster machine (386 recommended) with 640K RAM, hard disk, joystick recommended. Operating Sys.: MS DOS 3.3 or above, Windows 3.1. Graphics compatible with VGA. Sound support: Sound Blaster, Sound Blaster Pro, Thunder Board, Pro Audio Spectrum , Adlib Gold and Speed Master.

R This game is not for the faint-hearted. Contains violence and some material inappropriate for minors under 18.

For a free demo, call our 24hr. BBS at 310-539-7739. (8N1)

MEGATECH

Circle Reader Service Number 249

All companies and product names mentioned are trademarks or registered trademarks of the respective owners.

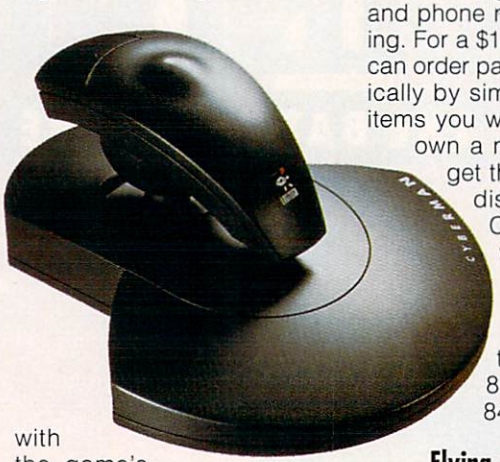
NEWS & NOTES

Jill Champion Booth

Feel It Happen!

From Logitech comes the ultimate in 3-D realism and sensory immersion: CyberMan, an interactive, hand-held controller that dramatically improves your computer game-playing experience. CyberMan's design gives you tactile game feedback with full-motion, multidirectional game-playing control not possible with either a joystick or a mouse. A motor built into the controller allows you to actually feel various gaming events, such as being struck or bumping into a wall, synchronized with the game's sound and action. CyberMan is 100-percent compatible with existing Logitech mice, but to take advantage of the 3-D control and tactile feedback, you must use a special driver. Look for Access, Electronic Arts, Interplay Productions, Knowledge Adventure, Origin, Sierra On-Line, and a slew of other software companies to incorporate CyberMan's 3-D compatibility into their products this year. The suggested retail price is $129. Contact Logitech, 6505 Kaiser Drive, Fremont, California 94555; (510) 795-8500, (510) 792-8901 (fax).

Removable mass storage, mouse control, the future of taxes, and tactile feedback devices



Fast Travel Info

Whatever your vacation interests, from the Colorado mountains to the French Riviera, some country, state, or city tour operator or private group has probably put out a free brochure about your dream destination.

To help you get your hands on all those useful pamphlets, a company called Travel Companions has set up an electronic bulletin board listing more than 9500 travel brochures, maps, and information kits. Except for your own telephone charges, you can search the database free. The computer listings describe each pamphlet and give an address and phone number for ordering. For a $12 annual fee, you can order pamphlets electronically by simply marking the items you want. If you don't own a modem, you can get the information on disk for only $19. Contact Worldwide Brochures, 1227 Kenneth Street, Detroit Lakes, Minnesota 56501; (800) 852-6752, (218) 847-7090 (fax).

Flying Toasters for DOS

"For too long," says Wes Boyd, Berkeley Systems' CEO, "Mac and Windows users have had After Dark all to themselves. One hundred million DOS users worldwide were being deprived. Something had to be done about it, and we were just the company to do it." And what his company did was to create a DOS version of its top-selling After Dark screen saver. Now airborne appliances, aquatic fauna, whirlpools, shooting stars, playful kittens, and more than 30 other surrealistic displays are available for DOS screens everywhere. The suggested retail price for After Dark for DOS is $49.95. Contact Berkeley Systems, 2095 Rose Street, Berkeley, California 94709; (510) 540-5535, (510) 540-5630 (fax).

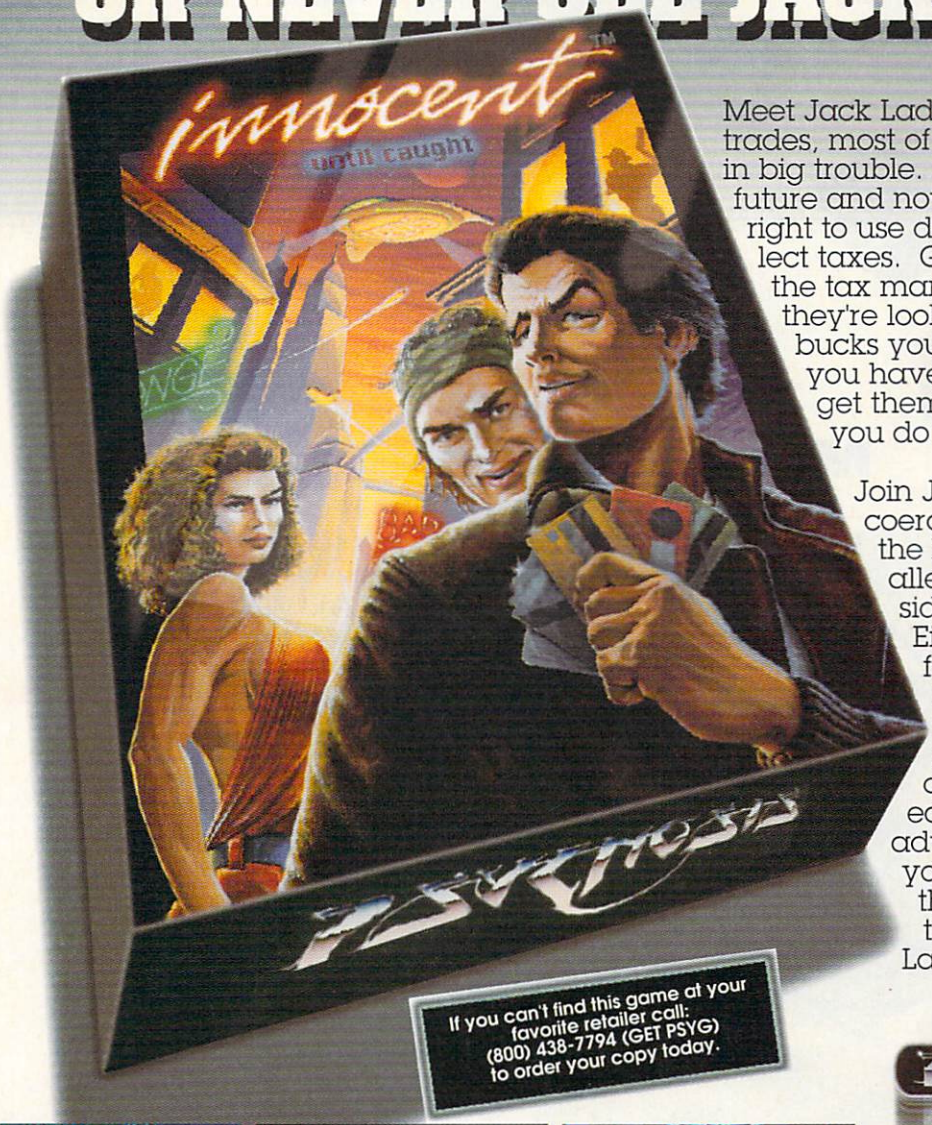
For Your Eyes Only

That Windows Solitaire screen is a dead giveaway that you're . . . uh . . . working "light" today. Or maybe you're the chief of personnel and you prefer not to broadcast confidential information while working in employees' personal files. So how do you protect your screen from all those prying eyes? ACCO's new SS Security Screen Filters are equipped with a film laminate that allows only a 15-degree viewing window. Onlookers see only a clouded view and are unable to read what's visible to you. In addition, the optical-quality glass used in the filters actually increases contrast more than 20 times and sharpens on-screen images—but for your eyes only. Suggested retail prices for the different models range from $149.95 to $189.95. Contact ACCO USA, 770 South ACCO Plaza, Wheeling, Illinois 60090-6070; (708) 541-9500, (708) 541-5821 (fax), (800) 247-1317 (toll-free fax, U.S. only).

Torture Yourself Early

Want to get a head start on knowing how much the new Clinton tax laws are going to sock it to you? TurboTax Tax Planner from ChipSoft will help you plan strategies to cope. The comprehensive forecasting and analysis program is designed to evaluate your tax liability across a broad variety of events like real-estate transactions, investments, and retirement. TurboTax Tax Planner analyzes different scenarios and presents results so you can easily understand their relative tax impact. In addition to incorporating any newly passed tax legislation, TurboTax Tax Planner features tax rates and brackets that ad-

SEE JACK RUN.
SEE JACK PLAY.
SEE JACK WHEEL.
SEE JACK DEAL.
SEE JACK STEAL.
SEE JACK PAY TAXES.
OR NEVER SEE JACK AGAIN.



Meet Jack Ladd, a jack of all trades, most of them illegal. Jack's in big trouble. You see this is the future and now the IRS has the right to use deadly force to collect taxes. Guess what Jack, the tax man commeth, and they're looking for the gazillion bucks you owe them. Now you have only 28 days to get them the money, how you do it is up to you.

Join Jack as he cons and coerces his way through the backstreets and alleys on the seedy side of the galaxy. Eight-way scrolling, full perspective scaling and Hypertext-style interaction give this game a colorful and realistic edge. This unusual adventure captures your imagination and thrusts you right into the heart of Jack Ladd's bizarre world.

If you can't find this game at your favorite retailer call: (800) 438-7794 (GET PSYG) to order your copy today.

Innocent is available on IBM compatible and Amiga formats.

PSYGNOSIS

Psygnosis
675 Massachusetts Ave.
Cambridge, MA 02139
(617) 497-7794

Circle Reader Service Number 243

Fly higher.

Higher. Faster. Farther.
CH Products is defining new standards of design and performance for computer pilots. We'll empower you to effortlessly relay commands with a feel of absolute control...to swoop, loop and soar like never before.

Move faster.

Get your hands on the top gun precision FLIGHTSTICK PRO™ or the red-hot FLIGHTSTICK™ series joysticks. Or our lightning-fast GAMECARD 3 AUTOMATIC.™ And VIRTUAL PILOT,™ a yoke that will defy your concept of reality. And there's more on the horizon.

Reach farther.

From drawing board to your fingertips, ours is a relentless pursuit of new and better products. CH Products began with a dream 25 years ago, and we've never looked back. Today, we give you the wings to fly.
Higher.
Faster.
Farther.

USA MADE

CH PRODUCTS

970 Park Center Drive Vista, CA 92083
Phone: 619.598.2518 Fax: 619.598.2524

TM 1993 CH Products, a Joystick Technologies Inc. Co.

Circle Reader Service Number 167

NEWS & NOTES

just up to (and even beyond) the new 39.6-percent marginal federal rate for the wealthiest taxpayers—providing accurate tax planning for 1993 taxes and planning flexibility through 1997. The suggested retail price is $29.95. Contact ChipSoft, 6330 Nancy Ridge Drive, Suite 103, San Diego, California 92121; (619) 453-4446, (619) 453-1367 (fax).

Curtis Surges Market

Curtis Manufacturing has a sleek new line of surge protectors that, according to the company, are technically superior to any others on the market. Each unit has been designed to deliver maximum performance with high joule ratings. The line starts with single-outlet protection at 140 joules and works up to eight-outlet maximum protection at 980 joules. In the company's independent tests, the model SP5000 at 196-V maximum suppression outperformed UL's best standard rating by 60 percent. The entire line is backed by a comprehensive warranty program: Curtis guarantees each surge protector and its performance by insuring the equipment that's plugged into it, and top-of-the-line models even cover damage to connected equipment caused by lightning strikes. Suggested retail prices range from $8.95 to $149.95. Contact Curtis Manufacturing, 30 Fitzgerald Drive, Jaffrey, New Hampshire 03452; (800) 955-5544 (U.S. only), (603) 532-4123.

Curtis supplies multioutlet power protection to 980 joules.

A True Font Library

Bitstream is offering its entire typeface library of nearly 1100 faces in TrueType format for Windows 3.1 operating environments. Larry Oppenberg, vice president of Type Operations, says he expects the Bitstream Typeface Library (BTL) in TrueType format for Windows 3.1 to appeal equally to a range of users, from individuals to businesses, such as desktop publishers, designers, graphic artists, and marketing communications departments. General target markets are small-office and home-office desktop publishing, business publishing, graphics companies, and graphic artists. Pricing per BTL format begins at $32.25. Contact Bitstream, 215 First Street, Cambridge, Massachusetts 02142-1270; (800) 522-3668, (617) 868-4732 (fax).

Mousetamer

Tired of mouse cable drag and snag? Now you can make that pesky rodent behave with a new device called the Mousetamer. Based on the same principle as the old ironing-board "whips," the Mousetamer prevents your cable from snagging and pulling, gives you

FEATURE PRESENTATIONS

FLIGHT

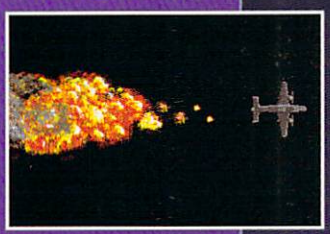
Personalize your Microsoft® Windows™ environment with incredible images & digitized sounds of your favorite aircraft.

Aircraft Wallpaper

Over 40 images of vintage and contemporary aircraft – use as Windows™ wallpaper or in an automated slide show.

Screen Savers

Animated crop dusters, bombers and skydivers all work to entertain you while preventing screen burn-in.



Aircraft Fly-Bys

This visual, easy-to-use aircraft encyclopedia contains vital statistics on each of the featured aircraft.

Air Events Calendar

Provides the locations and dates of airshows in your area.

Sample aircraft images:
- SR-71
- B-17 Flying Fortress
- F-14 Tomcat
- Fokker Dr 1 Triplane

COLORADO SPECTRUM

International: (303) 225-1687

(800) 238-5983

Ask your local retailer for Feature Presentations™: Flight, or call Colorado Spectrum to place your order.

Sample aircraft sounds for Windows™ events:
- P-51 Mustang
- F-15 Eagle
- B-25 Mitchell
- F4U Corsair

Circle Reader Service Number 248

EXPLORE the INTERNET!

DELPHI is the only major online service to offer you full access to the Internet. And now you can explore this incredible resource with no risk. You get 5 hours of evening/weekend access to try it out for free!

Use DELPHI's Internet mail gateway to exchange messages with over 10 million people at universities, companies, and other online services such as CompuServe and MCI Mail. Download programs and files using **FTP** or connect in real-time to other networks using **Telnet**. You can also meet people on the Internet. **Internet Relay Chat** lets you "talk" with people all over the world and **Usenet News** is the world's largest bulletin board with over 3500 topics!

To help you find the information you want, you'll have direct access to powerful search utilities such as "Gopher," "Hytelnet," "WAIS," and "the World-Wide Web." If you aren't familiar with these terms, don't worry; DELPHI has expert online assistants and a large collection of help files, books, programs, and other resources to help get you started.

Over 600 local access numbers are available across the country. Explore DELPHI and the Internet today. You'll be amazed by what you discover.

FREE TRIAL

Dial By Modem 1-800-365-4636, Press return once or twice.
At Username, enter JOINDELPHI. At Password, Enter CPT41

Complete details are provided during the toll-free registration

DELPHI

Questions? Call 1-800-695-4005. Send e-mail to INFO@delphi.com

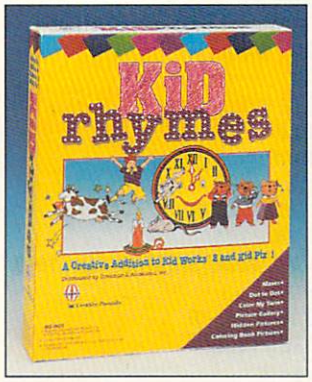
Attention Current Internet Users: *See what DELPHI can offer you! Stock quotes, Grolier's Encyclopedia, newswires, and hundreds of other services are just a few keystrokes away. Telnet to delphi.com and enter the username and password above for a free trial.*

greater control of the mouse, and makes it feel like a wireless mouse—without the drawbacks of radio-frequency interference, loss of signal, slow cursor response, and loss of resolution.

At a suggested retail price of $4.95, the Mousetamer is a bargain. For more information, contact American Business Concepts, 4400 Sunbelt Drive, Dallas, Texas 75248; (214) 380-4422, (214) 407-9096 (fax).

Kid Rhymes

Creative Pursuits, a Los Angeles–based company that focuses on educational soft-



Kid Rhymes makes for good times.

ware, recently released Kid Rhymes, a companion product to Davidson & Associates' Kid Works 2 and Brøderbund's Kid Pix. Kid Rhymes has six activities that can be accessed through the Kid Works 2 or Kid Pix File menu. In Dot-to-Dot, kids create images from popular nursery rhymes; Coloring Book lets them color pictures on the computer screen or print them on paper; in Mazes, kids use problem-solving skills to help characters find their way; Picture Gallery lets them personalize predrawn pictures with their own colors; Hidden Pictures lets kids search for hidden objects in familiar nursery-rhyme scenes; and in Color My Twin, kids copy and color the patterns of a favorite nursery-rhyme character to create a symmetrical twin. Available in both DOS and Mac formats, Kid Rhymes' suggested retail price is $29.95. Contact Davidson & Associates, 19840 Pioneer Avenue, Torrance, California 90503; (310) 793-0600, (310) 793-0601 (fax).

Removable Hard Drives

If you can't remember to make floppy backups or you don't want anyone to access your work, get a pocket-sized removable hard drive. A new line of drives from Logisys, called Intelligent Drives, allows you to remove or insert a hard drive cartridge without turning off your computer. Each Intelligent Drive system consists of an IDE controller card, a pocket-sized cartridge, and a bracket for 5¼- and 3½-inch drive bays. Logisys says the system uses the latest drive technology to ensure that the cartridge delivers the same performance as fixed IDE drives. Cartridges are available in capacities of 80MB, 135MB, 180MB, 260MB, and larger. The installation kit is $150; cartridges range from $399 to $599. Contact Logisys at 4749 East Wesley Drive, Anaheim, California 92806; (800) 333-5679, (714) 693-1188 (fax).

Freebies for Parents

Microsoft and the Computer Learning Foundation have developed a free booklet to help parents become familiar with multimedia personal computing. *The Power of Learning with Multimedia Personal Computing* introduces multimedia and explains how using a computer at home can sharpen key learning skills. Call (800) 426-9400 or write to Computer Learning Foundation, Attention: Multimedia Booklet, P.O. Box 60967, Palo Alto, California 94306.

Companies or public relations firms with items of interest for "News & Notes" should send information along with a color slide or color transparency to News & Notes, Attn: Jill Champion Booth, COMPUTE, 324 West Wendover Avenue, Suite 200, Greensboro, North Carolina 27408. ❐

NOTEBOOK GAMEPORT™

Finally, a Joystick Connection for Your Notebook!

Transform your high-performance portable into a serious simulation machine with the Notebook Gameport™. Connect any IBM-compatible joystick or yoke and rudder pedals. The Notebook Gameport™ not only maximizes the entertainment potential of your notebook computer, it's also the quickest, easiest joystick connection for your desktop!

Ask your local retailer for the Notebook Gameport™, or call Colorado Spectrum to place your order.

COLORADO SPECTRUM

748 Whalers Way, E-201, Fort Collins, CO 80525
International Telephone: (303)225-1687

(800) 238-5983

9-Pin Connector to Computer's Serial Port

Easily connects to all IBM compatible notebook and desktop computers.

Pass-through Serial Mouse Port

Mouse remains fully operational while gameport is in use.

Four-axis Gameport

Supports joystick & rudder pedals simultaneously. No calibration, jumpers or manual speed adjustments necessary.

Circle Reader Service Number 223

FEEDBACK

Abort, Delete, Retry

Because of a printing error, November's multimedia feature, titled "Open Windows to Sound," includes two incomplete paragraphs on page 80. The complete paragraphs are listed below.

"As if that weren't confusing enough, Windows throws another wrench into the works by combining MIDI with the FM synthesis associated in the DOS world with Ad Lib compatibility. If you don't actually have a MIDI device, Windows will let you map the General MIDI instruments to your sound card's FM chip. You can see this for yourself by calling up the MIDI Mapper utility through Windows' Control Device program. MIDI Mapper lets you specify which MIDI device will be associated with each of MIDI's 16 channels, which sound will be associated with each of Windows' 128 MIDI instruments, and which MIDI note will be associated with each MIDI drum sound.

"So what can you actually do with Windows audio? First, you can play back audio from the growing numbers of Windows programs that support sound. In addition to Windows games, such as Super Tetris, SimCity, Tesserae, and Cogito, you'll be able to use the many MPC programs on CD-ROM, including Brøderbund's Just Grandma and Me, Microsoft Encarta, Microsoft Cinemania, Compton's NewMedia's Jazz: A Multimedia History, The New Grolier Multimedia Encyclopedia, and hundreds of other Windows-based multimedia applications. You'll be able to capture and play back software-based video files using Video for Windows and QuickTime for Windows. And you'll be able to add audio to your presentations, with programs such as Action! and Compel."

Filling in the blanks, automating your PC's clock, and batching QBASIC from your AUTOEXEC.BAT

Saving Time

Why don't computer makers build into the ROM a program that sets the system clock when daylight saving time goes into effect and again when we return to regular time?

RAY METZGER
LEHIGH ACRES, FL

One of the dangers of the computer age is that we'll become dependent on our computers for everything. In order to forestall this, computer companies got together in secret to form a cabal that will ensure that we continue to maintain that frontier spirit—the spirit that helps us to survive in the face of adversity. This Star Chamber decided to make every computer user reset the system clock at least twice a year.

We've written a little program that you can run from your AUTOEXEC.BAT to set your system clock ahead in the spring and back in the fall. Is it simpler than changing the clock? No. You see, we're also members of the cabal.

Seriously, not everyone uses daylight saving time, so for millions of users such a utility would be more of a problem than a solution.

Here's the DST.BAS program.

```
currentdate$ = RIGHT$(DATE$, 4)
 + LEFT$(DATE$, 2) +
 MID$(DATE$, 4, 2)
ON ERROR GOTO errorchecker
OPEN "\timetemp.hhh" FOR
 INPUT AS #1
CLOSE
IF LEFT$(DATE$, 2) >= "04" AND
 LEFT$(DATE$, 2) < "10" THEN
i = VAL(RIGHT$(DATE$, 4)) - 1993
s = 4: j = i
DO WHILE j > 0
GOSUB back1
j = j - 1
LOOP
IF (i + 1) / 4 = INT((i + 1) / 4) THEN
 GOSUB back1
s$ = "0" + RIGHT$(STR$(s), 1)
springforward$ = RIGHT$(DATE$,
 4) + "04" + s$
IF (currentdate$ > springforward$)
 OR ((currentdate$ =
 springforward$) AND
 (LEFT$(TIME$, 2)
 >= "02")) THEN
OPEN "\timetemp.hhh" FOR
 INPUT AS #1
LINE INPUT #1, a$
CLOSE #1
IF a$ >= springforward$ THEN
GOTO ender
ELSE
GOTO changetime
END IF
END IF
ELSE
IF LEFT$(DATE$, 2) >= "10"
 THEN
i = VAL(RIGHT$(DATE$, 4)) - 1993
s = 31: j = i
DO WHILE j > 0
GOSUB back2
j = j - 1
LOOP
IF (i + 1) / 4 = INT((i + 1) / 4) THEN
 GOSUB back2
s$ = RIGHT$(STR$(s), 2)
fallback$ = RIGHT$(DATE$, 4) +
 "10" + s$
IF (currentdate$ > fallback$) OR
 ((currentdate$ = fallback$) AND
 (LEFT$(TIME$, 2) >= "02"))
 THEN
OPEN "\timetemp.hhh" FOR
 INPUT AS #1
LINE INPUT #1, a$
CLOSE #1
IF a$ >= fallback$ THEN
GOTO ender
ELSE
GOTO changetime
END IF
END IF
END IF
END IF
GOTO ender
changetime:
a$ = TIME$
a = VAL(LEFT$(a$, 2)): b$ =
 RIGHT$(a$,
 6)
a = a + (MID$(currentdate$, 5, 2)
 >= "10") - ((MID$(currentdate$,
 5, 2) >= "04") AND
 (MID$(currentdate$, 5, 2) <
 "10"))
```

The World's First Photorealistic Interactive CD Sci-Fi Adventure

THE JOURNEYMAN PROJECT

6 June 2318, 0651Z.

Attention Temporal Protectorate:

A rip has been detected in the fabric of time. Only moments remain until all that mankind has accomplished is laid waste. Your objective-journey through time...from prehistoric lands to the distant future, to prevent any compromise in the established continuum. But before the game is over, you must discover who...or what...is the source of this mayhem, and bring it to a halt.

- **Photorealistic 3D modeled worlds to explore**
- **Integrated arcade action and puzzles to challenge any player**
- **Intuitive interface featuring easy-to-use inventory and movement controls**
- **Original soundtrack**
- **Over 30 minutes of full motion video**
- **No set order in which the goals must be accomplished**
- **More than one solution to each problem you encounter**
- ***Also available on Macintosh CD***

Take a ride through time on the CD Adventure that will alter history.

Available at retailers throughout the continuum or by contacting:
Quadra Interactive, Inc., P.O. Box 188033, Carlsbad, CA 92009-9793

Winner!
INVISION 1993 Multimedia Awards
Award of Excellence
plus
•**Gold**-Best Animation/Graphics
•**Bronze** -Best Production Design
•**Bronze** -Adult Games

"...the world of interactive gaming is never going to be the same."
Mark Rhodes, Multimedia Editor,
Micropublishing News

Travel through time

Intense arcade action

Multi-level challenges

©Copyright 1992, 1993 Presto Studios, Inc.;
MPC version by Quadra Interactive, Inc.

PRESTO STUDIOS

QUADRA INTERACTIVE

Come on down to Jack Daniel's someday and watch us make our smooth sippin' whiskey.

A JACK DANIEL'S RICKER KNOWS the difference between whiskeywood and firewood.

For the charcoal that mellows our Tennessee Whiskey, we'll only burn hard maple taken from high ground. Anything else is too soft and would just go to ash. (Jack Bateman here is weeding out a stack of creek maple.) A new man in our rickyard must learn many skills before we bring him on. But first is knowing what wood makes the whiskey. And what wood makes the fire you sip the whiskey by.

SMOOTH SIPPIN' TENNESSEE WHISKEY

Tennessee Whiskey • 40-43% alcohol by volume (80-86 proof) • Distilled and Bottled by Jack Daniel Distillery, Lem Motlow, Proprietor, Route 1, Lynchburg (Pop 361), Tennessee 37352
Placed in the National Register of Historic Places by the United States Government.

Circle Reader Service Number 186

FEEDBACK

```
a = -(a + (-24 * (a = -1))) * (a
  <>24)
TIME$ = RIGHT$(STR$(a),
  LEN(STR$(a)) - 1) + b$
GOSUB maketimetemp
PRINT "System clock changed."
ender:
PRINT DATE$, TIME$
SYSTEM
errorchecker:
GOSUB maketimetemp
RESUME NEXT
back1:
s = s - 1
IF s < 1 THEN s = 7
RETURN
back2:
s = s - 1
IF s < 25 THEN s = 31
RETURN
maketimetemp:
OPEN "\timetemp.hhh" FOR
  OUTPUT AS #1
PRINT #1, currentdate$
CLOSE 1
RETURN
```

Auto Execute

Is there a way to get a QBASIC program to run from my AUTOEXEC.BAT?

ROBERT TOMLINSON
MESQUITE, TX

Yes. First, place the command SYSTEM at the end of the QBASIC program so that you'll exit from it when it's completed. Otherwise, when the program is finished, you'll be left sitting in QBASIC. Make sure the directory containing QBASIC is in your path. Then place the command to run the program within your AUTOEXEC.BAT. Say your program was called DST.BAS. To run it, place this line in your AUTOEXEC.BAT.

```
QBASIC /RUN DST
```

Do you have a question about hardware or software? Or have you discovered something that could help other PC users? If so, we want to hear from you. Call our special "Feedback" line: (900) 884-8681, extension 7010201 (sponsored by Pure Entertainment, P.O. Box 186, Hollywood, California 90078). The call will cost 95 cents per minute, you must be 18 or older, and you must use a touch-tone phone. Or you can write to "Feedback" in care of this magazine. Readers whose calls or letters appear in "Feedback" will receive a free COMPUTE baseball cap while supplies last. We regret that we cannot provide personal replies to technical questions. ❐

ENTERTAINMENT SOFTWARE

THE BEST IN ARCADE GAME SOFTWARE

Historically, arcade games have never been the PC's long suit. Lacking the custom graphic coprocessors of its competitors—from the humble C64 to the more advanced Amiga and Atari ST—the PC simply couldn't cut it. So while others enjoyed a deluge of cutting-edge action games, the stodgy old PC held firm to its standing as an artless business computer.

Things certainly have changed. The once-dull PC now bursts with power—dynamic sound, graphics, and precision input devices. Consequently, for the first time, arcade games are hot on the PC. As if making up for lost time, designers and players are attacking the genre with a passion. Although the overall selection remains small compared to other systems, the floodgates are now open.

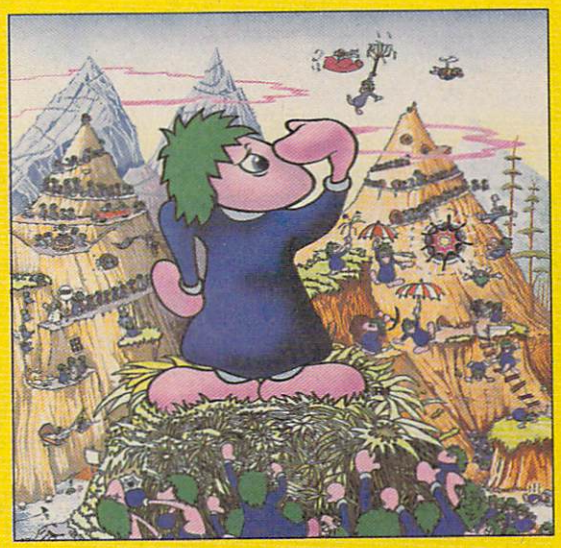
Hint: Traditional analog joysticks may be great for flight simulations, but they make lousy arcade controllers. Serious action players should invest in the four-button Gravis PC GamePad (Advanced Gravis, 604-431-5020, $29.95), a marvelous short-throw, console-style controller made especially for arcade games.

Arcade games generally fall into the following categories: Platform (run and jump), Shoot-em-Ups, Maze, Puzzle, and Classic (traditional games, such as pinball, adapted for the computer). Many designers, however, find ingenious ways to meld one or more categories—combining, for example, platforms with puzzles.

A perfect example of this melding of one category with another is Wolfenstein 3-D (Apogee, 800-426-3123, $50), which combines first-person maze running with nonstop shoot-em-up action. Players assume the role of a Schwarzenegger-style World War II prisoner attempting to escape a heavily guarded Nazi castle. Self-rated PC, for Profound Carnage, the game skyrocketed to cult status on the strength of its lightning speed, outrageous sound effects, and heart-pounding action. The full game features six individual episodes, each containing nine or more convoluted castle levels. The designers, Id Software, have followed this success with Doom, a game that features more involved play mechanics and dazzling graphic effects.

In the mood for some intense arcade aerobics? Prepare for a fast-paced workout with The Lost Vikings (Interplay, 800-969-4263, $39.95). Take control of three well-meaning, but slightly dense, Viking warriors on a mad romp through time and space. The game's unique challenge involves alternating control between the three lead characters, each of whom possesses a special ability. You'll need a thoughtful, well-timed group effort to survive the game's 37 large, puzzle-filled levels. The graphics are bright, colorful, and detailed.

Few titles have put a more lively spring in the step of platform games than Jordan Mechner's Prince of Persia (Brøderbund, 800-521-6263, $29.95). Loosely based on the Arabian Nights adventure, your goal is to rescue the Princess, held captive 12 levels above you in the Sultan's castle. Widely considered a milestone in



CONTENTS

THE BEST IN ARCADE GAME SOFTWARE 1
Top 10 Arcade Games 2

THE BEST IN SIMULATION GAME SOFTWARE 3
Top 10 Simulation Games 4

THE BEST IN SPORTS GAME SOFTWARE 4
Top 10 Sports Games 6

THE BEST IN STRATEGY GAME SOFTWARE 6
Top 10 Strategy Games 8

THE BEST IN ADVENTURE GAME SOFTWARE 8
Top 10 Adventure Games 9

THE BEST IN ROLE-PLAYING GAMES 10
Top 10 Role-Playing Games 11

THE BEST IN WAR GAME SOFTWARE 11
Top 10 War Games 12

THE BEST IN CD-ROM GAMES 13
Top 10 CD-ROM Games 15

HOW PC GAMES PLAY IN EUROPE 15
Top 5 European Games 16

ENTERTAINMENT SOFTWARE

the genre, this game provides a stunning showcase of rotoscoped animation, featuring incredibly fluid and lifelike character animation. Acrophobics beware: Much of the platform action in this remarkably physical game takes place at perilous heights, guaranteed to induce sweaty palms and queasy stomachs.

Brøderbund recently released Mechner's long-awaited sequel, Prince of Persia 2: The Shadow and the Flame ($49.95). The new title features 15 extra-large levels with a wider variety of settings and obstacles, vastly improved graphics, and an almost merciless array of opponents. Both games should be considered standard equipment for serious arcade players.

No doubt inspired by Mechner's work, French developer Delphine Software uses rotoscoped animation with even greater success in its phenomenal arcade adventure, Flashback (Strategic Simulations, 800-245-4525, $49.95). This futuristic thriller combines intense arcade athleticism with explosive firepower and mind-bending puzzles, spread out among six huge, diversely entertaining levels. Both background and foreground graphics are excellent—highlighted by film-quality animation— and expertly blended with atmospheric sound effects and cinematic transitions. Fans of this game also should check out Delphine's previous ground breaker, Out of This World (Interplay, $29.95).

Other exceptional platform games with a strong puzzle flair include the wildly popular Lemmings and Lemmings 2: The Tribe (Psygnosis, 800-438-7794, $29.99 and $59.99, respectively). The object of both games is to guide tiny green-haired, half-witted creatures across dangerous terrain to the exit door. What sounds simple in theory, however, proves absolutely maddening in practice, requiring steady nerves, quick reactions, and surprisingly sophisticated real-time strategy. The original game boasts 80 one-player and 40 two-player levels, arranged in difficulty from Easy to Mayhem. Lemmings 2 expands this premise dramatically, dividing its 120 levels among 12 unique Lemming tribes. The little guys also are given much more to do—with 55 different skills ranging from archers to surfers—as well as a wild assortment of precarious, often surreal obstacles. The sequel offers improved sound and graphics, although the original remains eminently playable.

Those looking for more edge-of-your-seat, gut-level gratification should try their trigger fingers on the growing number of high-octane shoot-em-ups. Firmly entrenched at the top of the list is Wing Commander Deluxe Edition (Origin, 800-245-4525, $79.95), Chris Robert's legendary space combat game. Structured around a branching, cinematic storyline, your pilot skills are put to the test in a series of increasingly dangerous deep space missions. The key to the game's success is the ferocious action scenes, featuring in-your-face 3-D dogfights, exploding with fiery bit-mapped graphics and script digitized sound.

The game's outstanding sales have prompted several add-on mission disks, as well as the newly released Wing Commander Academy ($49.95). This latest stand-alone game forgoes the original's fancy theatrics to offer nothing but pure adrenaline-pumping action.

Another popular blending of styles combines shooting action and puzzle solving in an overhead maze setting. One of the most entertaining in this category is D/Generation (The Software Toolworks, 415-883-3000, $24.95), a riveting race through 10 levels of a mutant-infested office building. Nothing is as it seems—don't even trust the furniture—in this brilliant 1991 release. On a more abstract, pure arcade level, S.C.OUT (Inline Design, 203-435-4995, $59.95) captures the imagination with its finger-numbing action and intricate puzzles. The game boasts 101 huge 4-way scrolling levels, with a built-in—yet curiously undocumented—game editor, which allows players to create up to 999 diabolical levels. Graphics, sound effects, and player controls are all superb.

When you feel the need for speed, strap yourself into Stunts (Brøderbund, $19.95), perhaps the best arcade-style racing simulation ever made. From gut-wrenching loops to elevated jumps, this one's a full-tilt screamer on even marginally equipped systems, with amazingly responsive joystick control. The game's easy-to-use track construction kit—with user-created tracks available on most major online services—assures almost limitless high-octane fun.

If you enjoy vibrant, challenging entertainment, but lack the twitchy wrist required by most action-oriented fare, check out Russia's gift to the gaming world, Tetris (Spectrum Holobyte, 800-695-4263, $19.95). Sure it's simple,

TOP 10 ARCADE GAMES

Lemmings 2. A wild and wacky 120-level puzzler, featuring sound and graphics enhanced from the best-selling original.

The Lost Vikings. True arcade-quality graphics highlight this fast and funny multilevel contest.

Flashback. A mind-bending adventure sparked by brilliant rotoscoped animation, this one points the PC in a bold new direction.

Prince of Persia 2: The Shadow and the Flame. Improved graphics and tougher opponents mark this long-awaited sequel.

Wolfenstein 3-D. A runaway hit noted for its blazing speed and ultra-violent action, often imitated, but rarely equaled.

D/Generation. Unassuming and often overlooked, this one's a nail-biter.

Wing Commander. Dynamic space combat wrapped around a cinematic storyline, this one started the current 3-D action craze.

S.C.OUT. Another low-profile action puzzler with an incredible built-in construction kit.

Stunts. Auto racing with a wild and wicked twist, featuring a terrific built-in track editor.

Super Tetris. The best rendition yet of the world-famous computer classic.

ENTERTAINMENT SOFTWARE

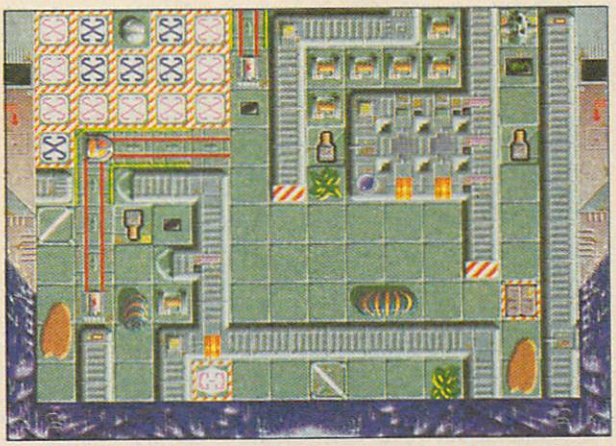
but try saying *no* to just one more game. Creating its own cottage industry, there are even several varieties to choose from: the VGA-enhanced Tetris Classic ($44.95); Tetris Trio ($49.95), combining Tetris, Welltris, and Faces; and the best of the lot, Super Tetris ($49.95), featuring greatly improved sound, graphics, and gameplay options. Other excellent visual puzzle games include Tinies (Inline Design, $59.95), Pipe Dream (LucasArts, 800-STARWARS, $19.95), and Ishido (Accolade, 800-245-7744, $24.95).

—Scott A. May

THE BEST IN SIMULATION GAME SOFTWARE

At their best, computer simulations should not only entertain, they should enlighten as well. As an interactive reflection of real-world activities, they allow ordinary people to experience extraordinary things. Let's face it, few of us will have the opportunity to pilot a real jet fighter, race the Indianapolis 500, or fly in a space shuttle. With a little imagination and a powerful PC, simulations allow anyone to do almost anything.

The overwhelming majority of titles in this genre are combat flight simulators—most directly based on real-life military aircraft, both modern and historical. It's not only one of the most prolific categories of entertainment software, but a proving ground for some of the industry's hottest design innovations. Just as early test pilots pushed the envelope of man and machine, flight sims continually test the boundaries of today's powerful PCs.



Inline Design's S.C.OUT

The field is so crowded with high-quality products, it's nearly impossible to narrow the selection. We'll begin with some of the established classics, particularly those best suited for rookie pilots. Almost four years old, but still flying high, Damon Slye's Red Baron (Dynamix, 800-326-6654, $49.90) remains one of the genre's top picks. Test your skills in the skies of World War I Europe—on both the British and German sides—flying such vintage fighters as the Sopwith Camel, Fokker Eindecker, and Nieuport 17. If you're looking for realistic dogfight action, you can't get much better than this, squaring off against some of history's best, including Max Immelmann, Eddie Rickenbacker, Oswald Boelcke, and the Red Baron himself, Manfred von Richthofen. Also featured are dozens of single missions, historical scenarios, and full campaigns, augmented with one of the genre's most versatile flight recorders. The game now comes packaged with the Red Baron Mission Builder, which adds untold enjoyment to this award-winning classic.

For dogfights of the modern era, you can't get much better than Chuck Yeager's Air Combat (Electronic Arts, 800-245-4525, $59.95). Like Red Baron, this one's a comparative old-timer, but one that still holds its own against the more flashy newcomers. A fighter pilot's dream, the game simulates a wide variety of aircraft from three combat eras: World War II, Korea, and Vietnam. Players assemble scenarios as you might order a meal from a Chinese menu—choosing an aircraft, starting altitude, and tactical position, as well as the opponent type, number, and skill. Select from more than 15 available aircraft, ranging from the P-47 Thunderbolt and B-29 Superfortress to the F-4 Phantom and MiG-21 Fishbed. The action explodes in a white-knuckle test of piloting prowess, weapons superiority, and split-second tactical skills. The program also features dozens of historic missions, a flight recorder, and wonderfully stable joystick controls.

An excellent choice for both beginning and intermediate dogfighters is Secret Weapons of the Luftwaffe (LucasArts, 415-721-3300, $49.95), the premiere World War II-era air combat sim. Take off as either an Allied or Axis pilot, commanding such classics as the P-47 Thunderbolt, P-51 Mustang, B-17 Flying Fortress, Messerschmitt Komet, Focke-Wulf 190, and experimental Gotha 229 fighter-bomber. A series of official supplement disks, as well as dozens of user-created hexed planes—available through various online services—adds even greater firepower. The game offers a wide scope of training flights, single missions, and full campaigns. One of its distinguishing marks is the use of bitmapped aircraft, instead of the usual polygon renderings, resulting in even greater detail, particularly images of planes trailing smoke and fire during close-range combat. Other highlights include terrific sound effects, from the vibrato engine hum and teeth-chattering explosions to the realistic Doppler drone of passing aircraft.

Yet another bona fide classic of the World War II era is Aces of the Pacific (Dynamix, $59.95), an award-winning combat sim from the creators of Red Baron. The sunny skies and blue water of the South Pacific provide stark contrast for this sensational aerial ballet of black smoke, bullets, and bombs. Hit the air in dozens of vintage U.S. and Japanese aircraft, including the Yokosuka D4YA Judy, Mitsubishi Zero, P-38 Lightning, P-39 Airacobra, and F4U Corsair. Structured similarly to Red Baron, the game features extensive training, single and historic missions, and numerous campaign options. Graphics and sound effects are state-of-the-art, with intensity levels heightened by the splendid flight recorder.

ENTERTAINMENT SOFTWARE

Dynamix has followed this successful product with the equally impressive Aces Over Europe ($59.95).

Other air combat simulations, most suitable for intermediate pilots, include F-117A Nighthawk (MicroProse, 800-879-PLAY, $49.95), Knights of the Sky (MicroProse, $19.95), Comanche: Maximum Overkill (NovaLogic, 800-245-4525, $69.95), and Strike Commander (Origin, 800-245-4525, $79.95).

Those who feel they've earned their wings can try their luck in the upper echelon with Falcon 3.0 (Spectrum Holobyte, 800-695-GAME, $79.95), widely considered to be the best in the business. Packing the most realistic avionics of any PC combat sim, this is the closest most will come to piloting an F-16 without joining the Air Force. Some of the game's most outstanding features include full squadron-level command of up to eight fighter jets through a variety of single and campaign missions. Action erupts hot and heavy in such theaters of conflict as the Middle East and Central America, with more than 90,000 square miles of ground detail rendered in stunning 3-D contoured polygons. In addition to the computer opponent's remarkable artificial intelligence, you also can go head-to-head against a friend—flying the MiG-29—via null or remote modem link. Add-on mission disks include Operation Fighting Tiger (39.95) and MiG-29 ($59.95).

Even the most jaded fighter jocks will experience future shock in X-Wing (LucasArts, $69.95), the first full-fledged space combat simulator. Why putter with biplanes or jet fighters when you can warp out in X-, Y-, and A-Wing starfighters, armed to the teeth with laser canons and proton torpedoes? Engage in an increasingly difficult series of missions against the evil Empire, ranging from simple deep space recons to multiphase attacks on battle cruisers and star destroyers. It's a rip-roaring good time, but not for the easily frustrated. Both graphics and sound effects set new standards for the genre. A supplement disk, Imperial Pursuit ($29.95), is available.

Other advanced combat flight sims worth considering are Megafortress (Three-Sixty Pacific, 800-245-4525, $59.95), Gunship 2000 (MicroProse, $39.95), Tornado (Spectrum Holobyte, $79.95), and F-15 Strike Eagle III (MicroProse, $69.95).

Of course, there's more to flight simulation than blasting things to smithereens. The top straight flight simulator is without doubt Flight Simulator 5 (Microsoft, 800-426-9400, $64.95), the latest incarnation of an industry pioneer. Cosmetically, the game features a complete Super-VGA makeover, including digitized cockpit displays, texture-mapped terrain, dithering horizons, and eye-popping 3-D landmarks. The simulation also features new satellite navigation tools, more realistic weather, improved flight models, sampled sound effects, and a more useful flight recorder.

Stunt Island (Walt Disney Computer Software, 800-688-1520, $59.95) skillfully blends flight simulation and cinematography into one of the genre's most fascinating, utterly original creations. Designed for advanced, ambitious players, you'll don many hats in this one—stunt pilot, director, prop master, set designer, and film editor—as you assemble daredevil stunts on the world's largest fantasy backlot. Scout locations on the island's disparate terrain, from mountains and skyscrapers to farmland and urban sprawl. Choose from an amazing assortment of 45 aircraft, from World War I to modern-day, including such oddities as hang gliders and shuttles, all rendered in fast, beautifully shaded VGA polygons. Despite its diversity, each aspect of the game is integrated to offer a long-lasting, educational experience.

Coming back down to earth, the genre's few non-flight simulations deal with business-oriented resource management, although most are better classified as strategy games. Likewise, most driving games—such as the top pick here, MicroProse's World Circuit—are true simulations, but usually are categorized as sports.

—Scott A. May

TOP 10 SIMULATION GAMES

Stunt Island. A stunning combination of flight simulation and full-featured cinematography.

Red Baron. Though set in World War I, Damon Slye's masterpiece is the model for most modern air combat sims.

Chuck Yeager's Air Combat. Dogfight through three combat eras .

Falcon 3.0. The current champ among high-end combat flight simulations, with few challengers on the horizon.

Aces Over the Pacific. Easy to learn, but tough to put down, this one offers the widest appeal of any combat sim.

Secret Weapons of the Luftwaffe. Another historical powerhouse, filled with fast action and an explosive presentation.

X-Wing. Rooted in the Star Wars saga, this is the only space game good enough to qualify as a top-rated flight simulation.

Flight Simulator 5. The pioneer of civilian flight simulation gets a long-awaited facelift in this feature-packed update.

Megafortress. This high-tech, high-stress bomber simulation captures the multitasking intensity of modern warfare.

World Circuit. Is it a sports game or a true simulation? It earns a spot on both lists

THE BEST IN SPORTS GAME SOFTWARE

Sports simulations offer game designers a unique challenge: accurately representing real-world competition on the computer. While other game genres allow the imagination to dictate direction, sports titles demand unerring compliance to rigid rules and regulations. Sorting statistics is the easy part—after all, computers are born number crunchers. Simulating the true nature of any sport—an almost metaphysical balance of individual and team effort—is a whole other ball game. When all elements come together, however, the re-

ENTERTAINMENT SOFTWARE

sults are often the most enduring entertainment of any software genre.

Few sports are as fiercely contested among designers and players as professional baseball. Debates over which title best simulates the action, statistics, or managerial options probably will rage as long as fans argue over their favorite teams. Hardball III (Accolade, 800-245-7744, $59.95) currently reigns as league leader in the action-oriented category. This one has a lot going for it: beautiful 256-color graphics, VCR-style instant replay (with option to save), accurately rendered stadiums, TV-style close-ups, multiple view angles, and best of all, digitized play-by-play from veteran sportscaster Al Michaels. Play options include exhibition games or user-defined full season play, with mid-season all-star games and limited statistical printouts. Add-ons, such as the MLBPA Players Disk ($24.95) and Big League Ballpark Disk ($24.95), extend the game's instant appeal.

Heating up the bullpen is Accolade's closest rival, Tony LaRussa Baseball II (Strategic Simulations, 408-737-800, $59.95). This power hitter actually boasts the league's best graphics and most realistic animation, but it falls short of the fence in terms of accurate and responsive player controls. Announcer Ron Barr is on board for digitized play-by-play—smoother, but not as expressive, as Michaels in Hardball III. As you'd expect from the title, the game shines on the managerial side, featuring a roster of 2,000 veteran players and 54 historical teams, with stats updated and printed in

Links 386 Pro from Access

134 categories. Optional add-on disks include the MLBPA Players ($19.95), AL/NL Stadiums ($29.95), and Fantasy Draft ($19.95).

For those who see baseball as merely a numbers game, the field abounds with several excellent all-stat games. Many of the league's oldest and most respected titles recently have resurfaced with much-needed graphical facelifts. Beneath their hi-res, mouse-driven facade, however, still beats the heart of a spreadsheet. Among the best new titles are MicroLeague Baseball 4 (MicroLeague Sports Association, 302-368-9990, $49.95), APBA Baseball for Windows (Miller Associates, 800-654-5472, $69.95), and Strat-O-Matic Computer Baseball 4.0 (Strat-O-Matic, 800-645-3455, $60).

Although baseball probably will always be known as the national pastime, football has long been America's favorite sport. The computer gridiron is also currently the scene of the game industry's hottest innovations. Leading the charge, with few competitors even close, is Front Page Sports: Football Pro (Dynamix, 800-326-6654, $69.95). The game's most obvious virtues are the dazzling on-field graphics, which use much of the same 3-Space technology pioneered in the company's best-selling flight simulators, Red Baron and Aces of the Pacific. More than 8,000 frames of rotoscoped animation make up the incredibly fluid, lifelike player movements, with nine fixed camera positions capturing the bone-crunching action. Gameplay itself is fast, smooth, and responsive, with support for dual joystick controls and truly remarkable computer artificial intelligence. But wait, we've only skimmed the surface! Beneath this slick veneer are the real goodies: 2,500 plays, real NFL teams and players, more than 300 printable stat categories, team owner and general manager duties, and the best coach's playbook designer on the market. No doubt about it, FPS: Football Pro is a work of art.

Of course, true football fans can never get enough pigskin action. The best of the second string titles offer credible performances in their own right. Tom Landry Strategy Football Deluxe Edition (Merit Software, 800-238-4277, $49.95) tops the list as the most entertaining coaching simulation. Highlights include a team and league editor, full season play, expanded stat tracking, null or remote modem play, and the most user-friendly interface in the genre. Other top draft choices for both action and strategy football include Unnecessary Roughness (Accolade, $69.95), NFL Football (Gametek, 800-928-GAME, $49.95), and NFL Coaches Club Football (MicroProse, 800-879-PLAY, $49.95). Pure strategy fans should check out MicroLeague Football 2 MicroLeague Sports, ($54.95) and 3-in-1 Football (Lance Haffner Games, $39.95).

Few sports are as well adapted to computer simulation as golf, with its understated strategies and graceful motion. The undisputed king of the fairways is Links 386 Pro (Access, 800-800-4880, $39.95), best known for its digitized full-motion video and scanned Super-VGA graphics. Most people don't believe their eyes upon first seeing the silky swings of the onscreen golfers. One of the game's most fascinating features is the ability to play a round and give the results (on disk) to a friend, who can then compete against your saved game. Other highlights include a user-defined windowed interface, multiple camera views, printable stats, and crisp digitized sounds. Like most other established golf games, this one boasts a batch of scenic course disks ($29.95 each). A Windows version is sold under the title Microsoft Golf (Microsoft, 800-426-9400,

ENTERTAINMENT SOFTWARE

$64.95).

The runners up for best golf game are equally good, in their own way. Accolade has enjoyed tremendous success with Jack Nicklaus' Golf and Course Design: Signature Edition ($69.95), noted for its outstanding 256-color VGA course designer. Beyond the wide assortment of supplement course disks offered through the company, dozens of user-created courses can be downloaded off services such as CompuServe, GEnie, and America Online. Other worthy golf titles include PGA Tour Golf for Windows (Electronic Arts, 800-245-4525, $59.95) and David Leadbetter's Greens (MicroProse, 800-879-PLAY, $59.95), the latter noted for its unusual multiplayer modem option.

The mechanics of computer auto racing force most games in this category to straddle the line between sport and simulation. The best in a new breed of high performance models is World Circuit (MicroProse, $59.95). The game features exquisite reproductions of 16 world class Grand Prix circuits, from Monaco's twisting urban sprawl to the gut-wrenching figure eight of Japan's Suzuka raceway. Fabulous first-person perspective, rendered with a speedy combination of bit-mapped and textured polygon graphics, puts you right on the tarmac. The game also feels right, whether you're tearing down the straight-aways or slipping into a tight curve. A unique alternating play mode allows two drivers to compete on a single computer. Or you can play two simultaneously via null or remote modem link. Other worthy contenders for the checkered flag are IndyCar Racing (Papyrus Software, 617-868-5440, $74.99), Car and Driver (Electronic Arts, $59.95), and Mario Andretti's Racing Challenge (Electronic Arts, $24.95).

The best of the so-called minor sports include 4-D Boxing (Electronic Arts, $24.95), an amazing new approach that borders on virtual reality. Boxers are rendered with large polygon shapes, affecting an odd, abstract look, but facilitating remarkably fluid, lifelike motion. Multiple camera angles, including a wild first-person view, puts you right in the ring. Hockey fans will be delighted with Electronic Arts' excellent NHL Hockey ($69.95), a potent combination of fast action and in-depth coaching skills. Converted to the PC from the best-selling Sega Genesis original, the game features full rosters of real NHLPA teams and players, with your choice of exhibition or full 84-game season play, including the Stanley Cup finals. Other highlights include Ron Barr's digitized voice, skate or coach play options, detail stat reports, and two-play competitive mode.

Other outstanding sports titles, in a variety of categories, include Summer Challenge (Accolade, $54.95), Test Drive III: The Passion (Accolade, $59.95), Wayne Gretzky Hockey 3 (Bethesda Softworks, 301-926-8300, $59.95), and Cactus League College and Professional Basketball (Cactus Development, 800-336-9444, $49.95).

—Scott A. May

TOP 10 SPORTS GAMES

Front Page Sports: Football Pro. Unbeatable combination of 3-D graphics, managerial decisions, and playbook design.

World Circuit. Great looks and smooth play combine for full-throttle action.

Hardball III. Well-balanced design of action, graphics, and strategy, with play-by-play by sensational Al Michaels.

Links 386 Pro. Soars to top of golfing leader board with digitized Super-VGA graphics.

4-D Boxing. Polygon graphics deliver ultra-smooth, lifelike animation.

APBA Baseball for Windows. Polished Windows interface brings new life to this venerable stat classic.

Jack Nicklaus Golf, Signature Edition. Lush graphics and built-in course designer highlight this all-time favorite.

Summer Challenge. Up to 10 players compete in 8 expertly designed Olympic-style events.

Tom Landry Strategy Football Deluxe Edition. Solid coaching sim with excellent stats, play calling, modem option, and the best mouse interface in its league.

NHL Hockey. Excellent conversion of the best-selling console classic.

THE BEST IN STRATEGY GAME SOFTWARE

In many ways, the strategy category serves as a catch-all for games that don't fit neatly within other, more specific, genres. When you think about it, every computer game requires the player to exert some degree of strategic skill. Arcade contests, for example, may seem like mindless action fare, but they actually demand a great deal of real-time plotting and scheming. Many of the titles you'll find here contain elements of arcade, simulation, adventure, or war games, yet offer enough strategic prowess to earn separate distinction.

The most clearly defined examples of the genre are titles based on traditional board, tabletop, and parlor games. Chess wizards looking for the ultimate opponent will find nirvana in The Chessmaster 3000 (The Software Toolworks, 415-883-3000, $49.95), available for both DOS and Windows. Advanced features include a library of 150 classic matches, blindfold chess, tournament and championship play, and finely tuned computer play and response settings. For the beginner, there's an online mentor and built-in tutorial. All players will enjoy the intuitive mouse-driven interface and wide selection of high-resolution chess pieces and board designs. For those in the mood for a strong game, with a slightly irreverent feel, check out the animated Battle Chess series from Interplay (714-553-6678), available in versions for DOS ($29.95), Windows ($49.95), and Super-VGA (this one is called Battle Chess 4000 and costs $59.95). All are strong opponents with exceptional graphic flair and the added attraction of remote modem play. Finally, there's National Lampoon's Chess Maniac 5 Billion and 1 (Spectrum Holobyte, 800-695-GAME, $69.95), a game

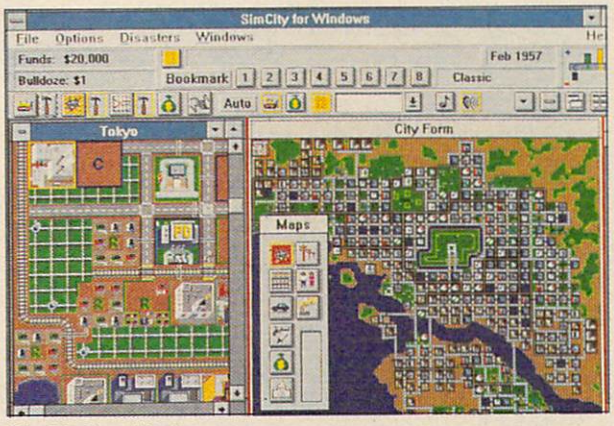
ENTERTAINMENT SOFTWARE

whose self-described "rude" sounds and animated graphics almost make up for its rather weak chess engine.

Solitaire addicts will be easily hooked on Solitaire's Journey (QQP, 908-788-2799, $59.95), a whirlwind tour of 105 different solitaire card games. Other titles in a similar vein include the Hoyle Book of Games series from Sierra (800-326-6654): Classic ($42.45), Vol. 2 ($29.70), and Vol. 3 ($42.95). For the more socially minded, there's Grand Slam Bridge II (Electronic Arts, 800-245-4525, $49.95), a 256-color VGA update of the best-selling original with new mouse and sound card support, customized bidding, and dealing options for up to four human players.

Perhaps the most famous—certainly the most copied—solitaire game designed especially for the computer is Shanghai II: Dragon's Eye (Activision, 800-477-3650, $29.95). A brilliant enhancement of Brodie Lockard's original work, the program is loosely based on the Chinese tile game, Mah-jongg. The latest version features 8 tile sets, 13 board designs, a two-player tournament mode, and a built-in board designer.

If gambling's your game, ante up to Amarillo Slim Dealer's Choice (Villa Crespo Software, 708-433-0500, $29.95), which features 28 poker varieties, online tutor, and user-defined house rules. What it lacks in presentation—marginal 16-color EGA—it makes up with fast, fun game play. Those on a budget will also enjoy Villa Crespo's Coffee Break gambling series, including Casino Craps, Dr. Wong's Jacks & Video Poker, and Dr. Thorp's Mini-Blackjack ($12.95 each). High rollers can wrestle the one-armed bandit without going to the cleaners in Strategic Video Poker (LWS Software, 800-828-2259, $49.95) and Masque Video Poker (Masque Publishing, 800-765-4223, $49.95). With detailed statistical analysis, numerous payoff configurations, and optional online strategy, both products offer fast-paced simulations of the most popular Las Vegas and Atlantic City machines. For an all-in-one guided tour of casino games, check out Beat the House (Gametek, 800-927-GAME, $59.95), which features detailed tutorials for slots, blackjack, roulette, video poker, and craps.



SimCity from Maxis

Computer incarnations of famous multiplayer board games include an entire series by Virgin Games (800-874-4607): Risk ($29.99), Monopoly Deluxe ($49.95), and Scrabble Deluxe ($49.95), available in high-res DOS and Windows versions. For classics that exist only on the computer screen, you can't get much more famous than Tetris (Spectrum Holobyte, $19.95), a simplistic, yet undeniably addictive, strategy game of falling blocks. The game's huge success sparked a wildfire of inferior knockoffs, culminating with the final—and best—version, Super Tetris ($49.95), available for both DOS and Windows. Another computer original bound for classic status is The Incredible Machine (Sierra, $34.95), an arcade-style puzzle feast inspired by Rube Goldberg's wacky homemade contraptions. The original contains 85 increasingly difficult levels, to which 80 more are added in the enhanced sequel, The Even More Incredible Machine ($42.45).

Game designers often look to real life for inspiration. Currently the hottest trend in strategy gaming is resource management, applied to everything from big business to complex social and political systems. One of the first to open this strategic can of worms was Will Wright's phenomenally popular SimCity (Maxis; 800-336-2947; $49.95 for DOS, $59.95 for Windows), a model of urban planning highly regarded for its realism. From this tiny seed, Maxis sprouted an entire line of fun, microcosm software, including SimEarth ($49.95), SimLife ($69.95), SimAnt ($49.95), and finally, SimFarm ($49.95). Bringing real-world resource management down to a more earthy level, this last title looks to be most tangible in the series.

Players with a nose for economic planning and elaborate corporate infrastructures can find rewarding careers in such games as Railroad Tycoon Deluxe (MicroProse, 800-879-PLAY, $69.95), Rags to Riches (Interplay, $59.95), A-Train Construction Set (Maxis, $69.95), Buzz Aldrin's Race Into Space (Interplay, $69.95), and Air Bucks (Impressions, 203-676-9002, $59.95).

Why manage a business when you can control the universe—or at least a small corner of it—in Populous (Electronic Arts, $24.95) and Civilization (MicroProse, $59.95). Populous is set in an abstract fantasy world, where two gods vie for supreme deity, via modem if so equipped. Civilization is Sid Meier's masterpiece of human survival, splendidly drawn from the pages of world history. Both games gave rise to a flood of excellent so-called *god sims,* including Populous II (Electronic Arts, $59.95), PowerMonger (Electronic Arts, $49.95), Utopia (Gametek, 800-927-GAME, $19.99), Global Effect (Millennium, 800-245-4525, $14.95), Caesar (Impressions, $59.95), and Mega lo Mania (UBI Soft, 415-332-8749, $49.95).

Looking for heavy strategy, but with a lively arcade bite? Take a walk on the dark side in Syndicate (Electronic Arts, $59.95), a grim look at the future of law and disorder. Command an elite squad of heavily armed cyborg hitmen in this one-

ENTERTAINMENT SOFTWARE

player power struggle, noted for its stunning sound and graphic violence. Slightly less cynical, and more abstractly violent in nature, is RoboSport (Maxis, $39.95), a 1-2 player Windows game loosely based on the old Capture the Flag premise.

Strategy games and TV quiz shows have a lot in common—a connection best exploited by LexiCross (Interplay, $39.95), a flashy, futuristic word puzzle game played with quick wits and tongue firmly in cheek. With several levels of difficulty, modem option, and superb multiplayer tournament mode, this classic offers true long-lasting challenge. Another excellent offering in the TV game show format is CrossWire (SilverSun, 800-874-5837, $39.95). Test your knowledge in more than 16 categories, including pop culture, history, science, art, sports, music, and geography in this fast-paced Windows game.

—Scott A. May

TOP 10 STRATEGY GAMES

Civilization. Grow your own society, loosely based on human history, both good and bad. Like an interactive civics lesson, but more fun.

The Even More Incredible Machine. Beneath the silly arcade front lurks a seriously fun, mind-bending strategy game.

Populous. First of the so-called *god sims* remains the genre's most polished.

SimCity. The microcosm that started a revolution. If only real cities were this much fun to build.

Railroad Tycoon Deluxe. If you build it, they will run—railroads, that is. A classic of hands-on entrepreneurial strategy.

LexiCross. Take a TV game show, zap it into an offbeat future, and you've got a classic multiplayer word puzzle game.

Buzz Aldrin's Race Into Space. Find out if you've got the right stuff to beat the Russians to the new frontier. Complex, historical, and thoroughly rewarding.

Chessmaster 3000 (Windows version). This one has beauty and brains, an unbeatable move for serious chess fans.

RoboSport. Employ unusual think-ahead strategies to program robots for real-time combat. A two-player classic, with modem option.

Syndicate. Populous meets Blade Runner in this dark, violent, and marvelously original action-strategy game.

THE BEST IN ADVENTURE GAME SOFTWARE

Adventure games are currently the most popular form of computer entertainment. If you can look at pictures, read a few words, and click with the mouse, that's all the skill needed to play one. A distant relative of the industry's early all-text adventures, today's adventures are more akin to huge, interactive versions of what the comic-book industry now calls graphic novels. It's a blistering hot field, thanks to continuing advances in cinematic techniques, digitized sound, effortless interfaces, and quality scripts.

Like its close cousins in the role-playing genre, adventure games are heavily influenced by mystic lands of magic, lost treasure, poor souls held captive, and brave heroes to the rescue. There are also extremely strong puzzle elements, in the form of clever word play or visual riddles, which often must be solved before turning the page.

The grand old master of the genre is, without a doubt, Sierra's King Quest series, created by Roberta Williams. Now in its sixth installment, each stand-alone adventure delves deeper into the lives of its cast of recurring characters, the royal family of Daventry. To ardent followers of the series, Williams' elegant prose evokes imagery as rich and rewarding as any in traditional literature. Combining beautiful scanned artwork, ambient sound effects, an open-ended storyline, and a comfortable mouse interface, King's Quest VI: Heir Today, Gone Tomorrow (800-326-6654, $67.95) is by far the best. Although technically less dazzling, King's Quest V ($59.45) remains a solid choice, and in many respects, offers a more intriguing plot.

Another top fantasy adventure is The Legend of Kyrandia (Virgin Games, 800-874-4607, $39.99), designed by Westwood Studios, creators of the original Eye of the Beholder role-playing games. In this quest, you must defeat the evil court jester Malcolm, who has slain the king (your father), stolen the magic gemstone, and cast the entire land of Kyrandia into turmoil. Beneath this simple story lies an adventure filled with uncommonly rich characters—and surprising humor—enhanced by excellent graphics, sound, and animation.

Graphic adventures with a more modern twist include Indiana Jones and the Fate of Atlantis (LucasArts, 415-721-3300, $34.95), loosely based on Steven Spielberg's popular movie series. Join the offbeat archaeologist, master of the bullwhip and double-entendre, as he battles Nazi spies on—and below—several continents. It's the best Indy movie that was never made.

Those who prefer to leave graphics to the imagination will enjoy a game from Activision (800-477-3650) called Lost Treasures of Infocom, a fantastic collection of all-text adventures from a true pioneer in the genre. Volume One ($69.95) features 20 individual titles, including the entire Zork series, as well as such classics as Deadline, Witness, Lurking Horror, Infidel, Planetfall, and Hitchhiker's Guide to the Galaxy. Volume Two ($49.95) offers an additional 11 titles, including Border Zone, Bureaucracy, Cutthroat, and Wishbringer. Beyond sheer entertainment value, both libraries contain bona fide collector's items, chronicling the history of early computer games. Despite their age, few of the adventures have lost their appeal. Fittingly, the groundbreaking Zork series has reemerged with state-of-the-art, digitized graphics in Activision's recently released Return to Zork ($79.95).

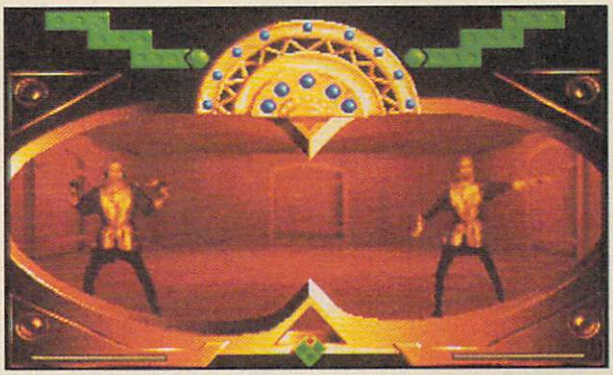
Science fiction adventures are staging a strong comeback, boldly led by such titles as Martian Memorandum (Access, 800-800-4880, $39.95), Star Trek: 25th Anniversary

ENTERTAINMENT SOFTWARE

(Interplay, 714-553-6678, $49.95), and Space Quest V (Sierra, $59.45). One of the most original works in recent years is Inca (Sierra, $50.95), designed by Paris-based Cotel Vision. Sparked by myriad puzzles and arcade sequences, it's a surreal blend of fact and fiction, topped with gorgeous graphics and full-motion video. Another French developer on the cutting edge is Delphine Software, best known for Out of This World (Interplay, $59.95), a fascinating blend of rotoscoped action and cinematic-styled adventure. Those who desire more traditional excursions into science fiction will thoroughly enjoy Frederik Pohl's Gateway (Legend, 800-245-7744, $59.95) and Gateway II: Homeworld (Legend, $59.95). Both titles feature Bob Bates' intuitive and efficient windowed text interface.

Hardboiled detective fans have a lot of graphic adventures to choose from. Police Quest 3 (Sierra, $59.45) and Blue Force (Tsunami, 209-683-9283, $69.95) take players into the heart of darkness. These tough urban crime dramas unfold at a brisk clip, packed with intense action and mystery. For more old-fashioned detective fare, crack open The Lost Files of Sherlock Holmes (Electronic Arts, 800-245-4525, $69.95), a large-scale murder mystery that's anything but elementary. This one's notable for its intuitive icon interface, context-sensitive musical score, and handsomely drawn artwork.

Of course, many of the best adventures aren't confined by traditional story-lines; they incorporate elements of arcade, role-playing, and real-time strategy. You'll find both action and suspense on the high seas with Pirates! Gold (MicroProse, 800-879-PLAY, $54.95), a full-blooded enhancement of Sid Meier's best-selling original. Set sail under an English, French, Dutch, or Spanish flag in one of six rich historical eras, ranging from 1560 to 1680. As a dashing buccaneer, you'll live a fascinating life, full of exploration and confrontations, from political posturing and trade negotiations, to exciting ship-to-ship combat and deadly fencing duels.



Inca from Sierra OnLine

Horror buffs have plenty to howl about, beginning with Alone in the Dark (Interplay, $59.95), a bloodcurdling adventure inspired by H. P. Lovecraft. Explore every creaking inch of a creepy old mansion, fending off ghosts, ghouls, and insidious traps. Rendered with fluid, 3-D texture polygons, the designers succeed in creating a kind of virtual reality nightmare. Unsettling mood music and crisp digitized sound effects will keep you up all night, chilled to the bone. Other harrowing horror titles include The Legacy: Realm of Terror (MicroProse, $59.95), Dark Seed (Cyberdreams, 800-238,4277, $69.95), Return of the Phantom (MicroProse, $59.95), Uninvited for Windows (Viacom New Media, 708-520-4440, $59.95), and Elvira II: Jaws of Cerberus (Accolade, $69.95). Players with itchy trigger fingers can even lead a space-age bug hunt in Space Hulk (Electronic Arts, $59.95), an utterly visceral adventure with strong arcade and strategy elements.

On the lighter side, nothing is sacred on Monkey Island 2: LeChuck's Revenge (LucasArts, $34.95), Ron Gilbert's agonizingly funny sendup of the pirate adventure genre. Role-playing games get an equally painful kick in the pants with Eric the Unready (Legend, $59.95), a text and graphic adventure with more inside jokes than you could shake a talisman at. You'll never look at a detective story with a straight face after playing Sam and Max Hit the Road (LucasArts, $69.95), a slapstick misadventure starring everyone's favorite freelance police. Yet another hot LucasArts comedy is Day of the Tentacle ($69.95), a marvelously drawn B-movie parody. Finally, there's Freddie Pharkas, Frontier Pharmacist (Sierra, $59.45), a terrific wild west spoof from Al

TOP 10 ADVENTURE GAMES

King's Quest VI. Latest edition of Roberta Williams' trend-setting adventure series is bigger and better than ever.

Monkey Island 2: LeChuck's Revenge. Side-splitting pirate parody doubles as challenging adventure yarn.

Inca. Uncommonly original and perfectly executed blend of disparate gaming styles, held together with stunning graphics and sound.

Indiana Jones and the Fate of Atlantis. Filled with action and humor, this rousing adventure features a plot even Hollywood can't match.

Alone in the Dark. Turn out the lights, turn up the sound, and enter a spine-tingling world of horrifying entertainment.

Day of the Tentacle. Vintage B-movie spoof for kids and parents alike, accented with colorful, stylish cartoon graphics.

Eric the Unready. Fantasy role-playing may never be the same after running this gauntlet of in-jokes and pratfalls.

Out of This World. Strikingly original combination of rotoscoped animation, cinematic action, and problem-solving adventure.

Pirates! Gold. The perennial swashbuckling favorite returns with enhanced gameplay and knockout Super-VGA graphics.

The Lost Treasures of Infocom. Two-volume set offers glimpse of gaming history through 31 classic all-text adventures.

ENTERTAINMENT SOFTWARE

Lowe, king of sophomoric satire and creative father to Leisure Suit Larry, world famous lounge lizard. For those who can't resist sexist gags and toilet humor, check out Leisure Suit Larry 5 (Sierra, $33.95), but don't say we didn't warn you.

—Scott A. May

THE BEST IN ROLE-PLAYING GAMES

Role-playing games, by nature, are unquestionably the most personal of all entertainment genres. After all, the basic premise of any role-playing game is to delve as deeply as possible into the psyche of its main characters. Most games let you carefully craft a party of characters, then pamper, polish, and protect them through outrageous adventures. Some fictional characters are programmed to develop such distinctive personalities that if they fall to harm's way, their human caretakers often react with intense emotions.

Computer role-playing games (CRPG) are natural extensions of their traditional pen-and-paper games or table-top miniatures. Instead of simply imagining monsters and moss-covered labyrinths, computer games burst with ethereal life, thanks to ever-evolving graphics and sound effects. Hard-liners may complain that the real magic has been lost; for the rest of us, however, CRPGs are the realization of our dreams—or more often, our nightmares. Almost without exception, role-playing games are dark, otherworldly affairs. Most CRPGs take place in the distant past or in strange fantasy realms populated by wizards, dragons, and elves and topped with an overabundance of evil.

The fantasy realm is stocked with so many quality efforts, it would be impossible—and downright confusing—to mention them all. An excellent place to hone your skills is the third installment of Jon Van Caneghem's popular series, Might and Magic III: Isles of Terra (New World Computing, 800-325-8898, $39.95). Unlike many single-minded adventures, this game consists of a series of mini-quests, each taking you a step closer to your final confrontation. Foremost among the game's many innovations is its icon-driven player interface and its use of large scale, brightly colored graphics. The game also introduces new techniques for unrestricted wilderness travel; this allows players to explore virtually every nook and cranny of this massive gaming universe. Van Caneghem has followed this landmark game with two equally impressive Might and Magic titles: Clouds of Xeen ($39.95) and Darkside of Xeen ($49.95).

One of the genre's most successful pairings has been Strategic Simulations' computer recreations of TSR's legendary Advanced Dungeons & Dragons series. The result has been a steady stream of high-quality products, known to fans as the Gold and Black Box games. The cream of this prolific crop is without doubt the Eye of the Beholder series, volumes 1-3 (408-737-6800; $19,95, $59.95, and $69.95, respectively). Trademark features of the games include superb character generation and combat controls, intelligent nonplayer characters, cinematic-style story transitions, and chilling real-time action in the 3-D graphics window.

The final installment, Assault on Myth Drannor, is particularly challenging and recommended for experienced players only. Those who have mastered every castle and dungeon in the series can now create their own with Strategic Simulation's Unlimited Adventures ($59.95), a full-featured AD&D fantasy construction set.

Another long-running favorite in the genre is the Ultima series by Origin's Richard Garriott, a.k.a. Lord British. Like many of its contemporaries, the series recently replaced its flat graphics and stilted interface with exquisite 256-color VGA, mouse-driven controls, and digitized speech. The latest editions of the award-winning saga are Ultima VII: The Black Gate (800-245-4525, $79.95) and its add-on disk, Forge of Virtue ($24.95). This game continues the series' familiar three-quarter, top-down view of the action but fills the full screen with improved graphic detail and peripheral animation. The storyline is huge and delightfully complex—not surprisingly, it takes nearly 20 megabytes of hard drive space. Garriott also jumps on the first-person bandwagon with Ultima Underworld: The Stygian Abyss ($79.95). Unlike similar efforts, where characters must walk a path with limited view angles, this game allows unrestricted 360-degree movement. Combined with beautifully drawn 3-D modeled terrain and a remarkable illusion of depth, the experience is extraordinary. Origin recently followed with Ultima Underworld II: Labyrinth of Worlds ($79.95), which features a slightly revamped interface and the return of some old enemies.

The oldest of the genre's esteemed originals, by many accounts, is perhaps the best of the bunch: Wizardry VII: Crusaders of the Dark Savant (Sir-Tech, 800-447-1230, $69.95). D.W. Bradley's epic series was the first CRPG to feature phased combat and 3-D perspective—in 1981's Proving Ground of the Mad Overlord. Although Sir-Tech subsequently fell behind in the audio/visual department, the company makes a bold comeback with this dazzling work. Atop the game's traditionally styled role-playing engine—widely considered the strongest in the genre—Bradley integrates a marvelous mouse-driven graphic interface. Of special note is the spine-tingling sensation of creatures rustling just beyond your field of vision, accompanied by distant growls, growing louder as you approach. Other new features include wilderness travel, automapping, day/night cycles, and vastly improved magic and combat. For players continuing on from the previous bestseller, Bane of the Cosmic Forge ($59.95), the game boasts multiple starting points.

Among the best in a new breed of role-playing games is Betrayal at Krondor (Dynamix, 800-326-6654, $59.45), based on the best-selling Riftwar Saga by Raymond E. Feist. In this totally unique blend of CRPG and graphic adventure, the story's characters aren't created by the player; instead, you function as a kind of interactive narrator, guiding the otherwise fiercely independent char-

ENTERTAINMENT SOFTWARE

TOP 10 ROLE-PLAYING GAMES

Might and Magic: Clouds of Xeen. Big and colorful, this one's an excellent choice for rookie role-players.

Betrayal at Krondor. With a unique open-ended style, this is the vanguard of a new breed in role-playing adventure.

Wizardry 7: Crusaders of the Dark Savant. The grand elder of the genre, graphically updated and wicked as ever.

Ultima Underworld. Lord British goes underground with this stylish, 3-D virtual fantasy environment.

Eye of the Beholder III. The final installment of this trend-setting series offers tough challenges for advanced players.

Unlimited Adventures. Design your own diabolical quests with this full-featured role-playing construction kit.

Starflight 2. The first true science fiction role-playing classic makes up in gameplay what it lacks in graphics.

Star Control II. Interstellar epic combines exceptional graphics with role-playing, adventure, and arcade-style space combat.

Ultima VII. Latest in long-running Lord British series features vastly improved control scheme, sound effects, and character intelligence.

Lands of Lore: Throne of Chaos. A graphic knockout, with a storyline to match, enriched by an intuitive, streamlined interface.

acters through a series of adventures. Likewise, the game's structure can be tight or loose, closely following the main plot line, or branching off to explore a 3-D virtual fantasy world—224 million square feet of trails, rivers, mountains, lakes, islands, towns, twisting sewers, and abandoned mines. Because characters learn behavior based on decisions made at a particular time or place, no two games are exactly alike. Also worth noting is the extensive use of scanned artwork and digitized actors, as well as the 3-D tactical combat system.

Other worthy titles in the fantasy realm include Lands of Lore: Throne of Chaos (Virgin Games, 800-874-4607, $49.95) from Westwood Studios, creators of the original Eye of the Beholder; Magic Candle III (Mindcraft, 800-525-4933, $59.95); Challenge of the Five Realms (MicroProse, 800-879-PLAY, $49.95); Realms of Arkania (Sir-Tech, $59.95); Elvira (Accolade, 800-245-7744, $24.95); and Darklands (MicroProse, $59.95).

Tired of trolls and arcane magic? Blast off to the future with science fiction role-playing games. Although the selection isn't nearly as large, this category recently has sparked renewed interest among game designers. Two of the oldest, yet still highly regarded, are Starflight and Starflight 2 (Electronic Arts, 800-245-4525, $24.95 each). Although the graphics and sound are primitive by today's standards, these intergalactic quests are unparalleled for their deep space atmosphere and player involvement. Much of this spirit also can be found in Star Control II (Accolade, $59.95), an epic-flavored star quest boasting excellent sound and graphics, involved alien interaction, and the best arcade-style space combat in the genre. Other titles of this caliber include Planet's Edge (New World Computing, $29.95), Hard Nova (Electronic Arts, $24.95), and Tegel's Mercenaries (Mindcraft, $59.95).

Another title of exceptional quality is Rules of Engagement 2 (Impressions, 203-676-9002, $69.95), Omnitrend's mammoth space saga that combines starship role-playing with strategy and real-time tactical combat. The game's most remarkable feature, however, is called the Interlocking Game System, which offers internal links to Impressions' classic Breach 2 ($14.95) and upcoming Breach 3.

—Scott A. May

THE BEST IN WAR GAME SOFTWARE

Historical conflict games or war games, as they usually are known, have been around for many years. Originally available as board games from such giants as Avalon Hill, SPI, and GDW, the war game was the standard start up fare of a number of companies, most notably Strategic Simulations (SSI). Although much maligned as an adjunct of "war toys" by the politically correct, historical conflict games are, in fact, the preference of those who combine a love of history and/or find chess too abstract as a strategic challenge. For the purposes of this article, games that include warfare as an intrinsic part of the game also have been included. Many of the newcomers to computer war games have come from the board game market. A half way point in that journey is HPS's Aide De Camp ($79.95). Aide De Camp is a gamer aid, which allows the conversion of board games into computer representations that can be used for e-mail gaming.

Three companies dominate the war game field today. SSI has been joined by Three Sixty and the Australian firm SSG. While it's impossible to issue a blanket recommendation for each company, it's fair to say that most of their products are impressive.

In 1992, Three Sixty Pacific (800-653-1360) changed the face of computer war gaming with the introduction of V for Victory: Utah Beach ($69.95). Here was a game designed for the computer but set up in board game style. Immediately, a large segment of the potential audience was completely at ease. Moreover, the June 44 Normandy Invasion was a perfect backdrop for an entertaining challenge. Subsequent releases in the V for Victory series have included, Velikiye Luki ($69.95), one of the more obscure Eastern Front Battles; Market Garden ($69.95); and the recent release of Gold : Juno : Sword: ($59.95). Three Sixty will be packaging the first three V for Victory games into a special Victory Pack ($69.95), which may qualify as one of the better Christmas bargains. The developers of the V for Victory series, Atomic Games, have now moved over to Avalon Hill and will be working on a conversion of the venerable Squad Leader board game.

ENTERTAINMENT SOFTWARE

Strange how cyclic this business can be. Three Sixty's other World War II European Theater depiction, High Command ($69.95), is in many ways more of a game than a simulation. Until Avalon Hill redoes Third Reich properly, High Command remains locked in battle with Clash of Steel (SSI, 408-737-6800, $69.95) for the attention of strategic gamers.

Clash of Steel is the latest in a long line of great war games from SSI. Simpler than High Command, Clash of Steel still allows the opportunity to explore different historical what ifs and various areas of research. For most war gamers, both strategic simulations will be of interest. SSI's war games are too many to list, but one that should be noted is Battles of Napoleon ($49.95), one of the more accurate games on the market. It includes four battles and a scenario construction set. Of the many Civil War titles produced by SSI, Gettysburg: The Turning Point ($59.95) remains the best of the lot even after seven years. Pacific War ($79.95), Western Front ($59.95), the somewhat strangely named East Front Game, Second Front ($59.95), the out-of-print USAAF, and Carrier Strike ($59.95)—all have one thing in common: Gary Grigsby. A prolific designer of good and occasionally great games during the 1980s, Grigsby has been putting out hit after hit recently. If you come across a game produced in the 1990s and designed by Grigsby, get it. Grigsby also supports his own games on the GEnie online service.

The only design team to challenge Grigsby in quality and quantity is the Australian team of Roger Keating and Ian Trout. Their company, SSG (904-494-9373) has been putting out consistent product since the release of Battlefront ($39.95) in 1987. While a good corp-level World War II game in its own right, Battlefront has become the framework for a string of quality historical recreations. Most notable is the civil war trilogy, Decisive Battles of the Civil War I, II, and III ($40 each). Each game contains 5-6 significant (though not necessarily decisive) battles of the Civil War. SSG's Carriers at War ($50), the company's first release nearly 10 years ago, continues to age well. The update, Carriers at War 2 ($70) is even better, and the recent Carriers at War Construction kit ($60) contains nine new scenarios and the ability to design your own.

Australia also has provided the biggest diamond in the rough. Panther Games, ably led by Dave O'Conner, produced Fire Brigade. While hard to find, this game of late 1943 Eastern Front battles was a forerunner of the V for Victory series. Strong artificial intelligence also was featured in this product.

Few games in our time have had the reputation of Empire. Mark Baldwin's game, published by Interstel, is no longer available, but New World Computing (800-325-8898) introduced Empire Deluxe ($59.95) in 1993. Deluxe adds most of the requests made by Empire fans. Castles II (Interplay, 714-553-6678, $59.95) was a pleasant surprise. A sequel that was better than its original, as Vince De Nardo and crew added more gameplay elements. Bruce Zaccagnino and QQP (908-788-2799) released Mark Baldwin's Perfect General ($59.95), a game designed more for playability than accuracy. Zaccagnino's own Lost Admiral ($59.95) owes more than a passing compliment to Baldwin's Empire and, therefore, was well received. Lawrence Schick at MicroProse (800-879-PLAY) was behind Task Force 1942 ($69.95), a game that might qualify for the simulation list.

Probably the biggest surprise this past year, and a pleasant one at that, was Dune II (Virgin Games, 800-874-4607, $59.95). Developed by Westwood, which is better known for its adventure games, Dune II provided some of the best tactical challenges in years. Impressions (203-676-

TOP 10 WAR GAMES

Civilization. Quite simply the best game on the market. Not specifically a war game but more a combination of the best elements of Sid Meier's previous Railroad Tycoon, Maxis' Sim City, and a multitude of strategy and war games.

Master Of Orion. While not quite Civilization in Space, Master of Orion comes close. Featuring multiple races with different strengths, plus an artificial intelligence that doesn't cheat while playing the *impossible* level.

V for Victory series. For board game players making the transition to computer games, nothing could be better than the V for Victory series.

Empire Deluxe. While no longer a top seller, Empire remains one of the better games. Empire Deluxe adds the best wish list requests to make the ultimate game for many.

High Command. Returning once more to World War II, High Command follows the Three-Sixty Pacific tradition of producing computer war games that resemble board games.

Battlefront Series. Rather than pick one of this series, it's better to recognize the entire group of Battlefront games from SSG.

Caesar. An impressive move into the U.S. market from the British firm, Impressions. Sim City does Rome best describes this sleeper hit.

Clash of Steel. A strategic treatment of the War in Europe 1939-1945. In many ways, Clash of Steel is a poor man's High Command. The program's artificial intelligence is its best selling point—it performs well on both offense and defense.

Dune II. A game overlooked by many war game players. Set within the classic Dune world, Dune II is a game of economic and military struggle. It contains classic board game strategies with Sim City-like construction.

Fire Brigade. Truly ahead of its time, this game of Kiev eastern-front battles by Dave O'Conner and Panther Games contained many of the elements that made V for Victory so successful. Hard to find—perhaps someone will acquire the rights and update this classic.

ENTERTAINMENT SOFTWARE

9002) is a new kid on the block. Its When Two Worlds War ($59.95) is simplistic as a one-player game, but as a two-player modem game, it really shines. Caesar (Impressions, $59.95), the company's Sim City meets Rome game, remains a favorite. Impressions is also the home for Rules of Engagement 2 ($69.95). A space conflict game stunning in its scope, Rules of Engagement 2 has one of the most detailed built-in scenario editors ever published.

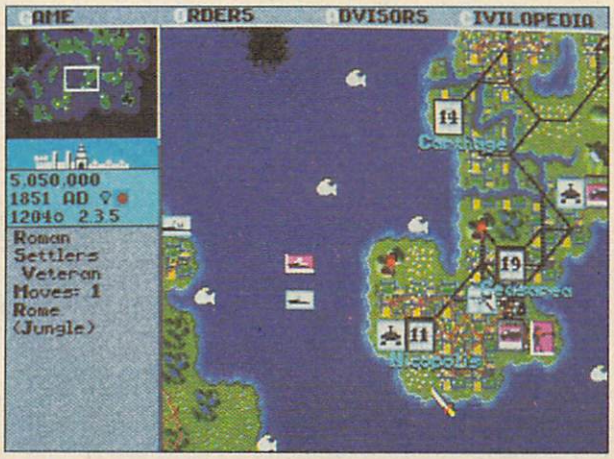
Space conflict games as a whole are an interesting breed. Our Australian friends at SSG have put out a classic in Reach for the Stars, one of the few games worth buying an obsolete machine just to play. The release of Master of Orion ($49.95) from MicroProse ups the ante in the space warfare genre. Which leaves us with the best game on the market today, Civilization (MicroProse, $69.95). Because it's a game that doesn't fit neatly into any particular classic pigeon hole, we can only proclaim it the best in whatever category you might choose to place it.

The future holds much promise, as Jim Dunnigan's Victory at Sea (360), Sid Meier's Civil War Game (MicroProse) and Atomic's Squad Leader (Avalon Hill) are all potential inductees into next year's war game top ten.

—Wallace Poulter

THE BEST IN CD-ROM GAMES

CD-ROM games have come a long way in the last few years. We've gone from CD-ROMs that contain only disk-based versions of games to CD-ROMs with games created especially for the new medium—and everything in between.



Civilization from MicroProse

For the sake of simplicity, let's break these CD-ROM games into three categories: ports, hybrids, and pure breeds.

Ports

When CD-ROM drives started to sell well in 1989, game developers began to port the disk-based versions of their most popular games to the new medium. It was the easiest and quickest way to test the waters. Access released a CD-ROM with many of its previous hits, Origin combined its popular Wing Commander with two mission disks onto one CD-ROM and Ultima Underworld I & II onto another, and LucasArts produced a CD-ROM with Secret Weapons of the Luftwaffe and threw in some add-on disks. The extra value came from buying several games for the price of one and not having to install the games on your hard drive.

Even today, you can find vendors offering CD-ROMs in value-pack ports. By the time your read this, Psygnosis will be selling a CD-ROM that contains both Lemmings and Oh No! More Lemmings for the price of a single game (Psygnosis, 617-497-7794, $59.99).

Hybrids

Most of today's CD-ROM games are actually hybrids—disk-based games that are given extra features when converted to CD-ROM. The immense space provided by the CD-ROM (as much as 680MB) lets a company take a popular DOS-based game and add voices to the characters, a digitized music track, and even additional graphics and puzzles.

The most dramatic example of these added features is the adventure game, King's Quest VI CD (Sierra On-Line, 800-326-6654, $79.95), which is an enhanced version of the disk-based King's Quest VI: Heir Today, Gone Tomorrow. The CD-ROM version replaces the characters' on-screen words with actors' voices (for a total of four hours of dialog and narration) and adds higher-resolution graphics throughout the game (under Windows, the icon interface, inventory items, and talking characters are shown in 640 x 480 with 256 colors). The CD-ROM also includes a 50-megabyte animated sequence that runs for 7 minutes, as well as a 4'-minute Video for Windows movie that shows how the game was made.

Most hybrid CD-ROM adventure games add spoken dialog and narration. These include Sierra's other CD-ROM games, King's Quest V ($69.95), the previous adventure in this popular series; Space Quest IV ($69.95), a rollicking spoof of space adventures, featuring the voice of Garry Owens ("Laugh-In"); Laura Bow: The Dagger of Amon Ra ($69.95), a mystery adventure in the tradition of Nancy Drew; and The Adventures of Willy Beamish (on the Dynamix label, $69.95), a light-hearted look at the action-packed life of a pre-teen.

LucasArts offers similarly enhanced CD-ROM versions of its popular adventure games, including Loom (415-721-3300, $59.95), a magical tale that successfully integrates a musical theme into the story; Monkey Island (415-721-3300, $59.95), a satisfying spoof of pirate adventures; Indiana Jones and the Fate of Atlantis (800-STARWARS, $69.95), an original story based on the popular movie character; and Day of the Tentacle (800-STARWARS, $69.95), a droll parody of 1950s science-fiction movies.

Other hybrid titles include Dune (Virgin Games, 800-874-4607, $99.99), which integrates actual footage from David Lynch's classic movie, *Dune;* Battle Chess CD-ROM Enhanced (Interplay, 714-553-6678, $79.95), which sports a new

ENTERTAINMENT SOFTWARE

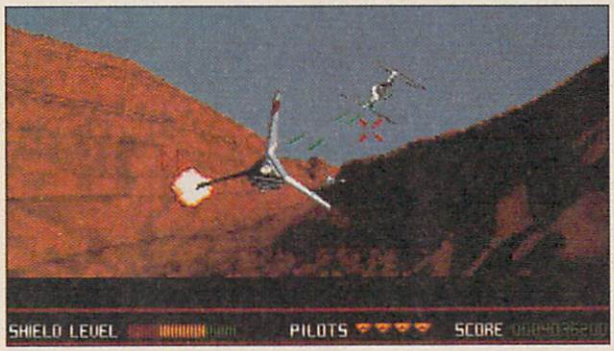
music track, additional sound effects, and higher-resolution graphics; The Chessmaster 3000 (The Software Toolworks, 415-883-3000, $79.95), a first-rate chess game that adds full voice instruction; Microsoft Multimedia Golf (Microsoft, 800-426-9400, $64.95), which adds spectacular flybys of each hole and video golf pro tips to the disk-based Microsoft Golf for Windows; and Inca (Sierra On-Line, 800-326-6654, $69.95), a marvelous mix of ancient cultures and high-technology with animation and sound added to the CD-ROM version.

Pure Breeds

The future belongs to games that are designed especially for CD-ROM. You only have to compare the quality of most of the new made-for-CD-ROM titles to the typical port and hybrid games to see the incredible potential of the new medium.

Many of the companies that have dominated the hybrid market, such as Sierra and LucasArts, are designing games that will be available only on CD-ROM. In 1994, many of the top games from the well-known game companies will be designed especially for CD-ROM and then scaled-down for the disk version. By 1995, many of these same companies will either be producing games only for CD-ROM or releasing each game in separate versions for both CD-ROM and disk. With as much as 680MB available for a CD-ROM game versus 20-30MB for a disk-based game, it shouldn't be surprising that the leading edge games are moving to CD-ROM.

The year 1993 has brought us the first group of games created especially for CD-ROM. While not all of them are as playable as the best disk-based or hybrid-CD-ROM games, their advanced graphics and sound have dramatically raised our expectations for computer-based games. The most famous of these would have to be The 7th Guest (Virgin Games, 800-874-4607, $99.99). Too large to fit on a single CD-ROM, this double CD-ROM game features a terrific musical score (especially when used with a General MIDI music device), full-motion video characters, and eye-popping 3-D rendered backgrounds.



Rebel Assault from LucasArts

Sherlock Holmes: Consulting Detective Volumes II & III (Viacom New Media, 708-520-4440, $69.95 each) are the follow ups to Sherlock Holmes: Consulting Detective Volume I ($69.95), which was one of the first games to integrate video clips into the game's action. Viacom's latest title, Dracula Unleashed ($69.95), includes over 150 video scenes (for a total of 90 minutes of video) that you navigate using a VCR-like interface. Who Killed Sam Rupert? (Creative Multimedia, 503-241-4351; $39.99) also successfully integrates video clips into a mystery setting. A sequel to Sam Rupert should be available by the time you read this.

Model car fans will enjoy two innovative CD-ROMs from Revell-Monogram (708-966-3500): European Racers ($69.95) and Backroad Racers ($69.95). Both feature an actual model car kit, step-by-step instructions on how to construct the model (rendered onscreen in high-resolution 3-D polygon animation), and a racing game where you can square off against similar vehicles (here you'll interact with video footage of various characters, such as a policeman and a pit crew member). Each CD-ROM includes the simulation software for three additional models, which you can buy separately at toy stores or hobby shops.

Quite a few pure breed CD-ROM games will be shipping just before Christmas. They all feature graphics, sound effects, and music that are state-of-the-art.

Hell Cab (Time Warner Interactive, 800-593-6334, $99.99) includes photo-realistic characters and a plot that involves a New York City cab driver (he's really a trainee devil), prehistoric jungles, Nero's Rome, and the trenches of World War I. Your goal is to make it back to the airport with your soul intact.

If you liked X-Wing, you'll love Rebel Assault (LucasArts, 800-STARWARS, $69.95). This thing looks and sounds so much like a Star Wars movie, you'll do a double-take. The ships and planets are rendered with high-resolution graphics to match the ones in the Star Wars films; John Williams' score is there, often note for note; and even the dialogue and position of the characters recall specific scenes from the movies.

The Journeyman Project (Quadra Interactive, 619-931-4755, $79.95) has some of the most innovative graphics I've ever seen in a game. The year is 2318. Your mission is to repair a rip in time caused by careless time traveling. The game features both arcade action and mental puzzles. The pre-release version I played ran slow, but Quadra Interactive was working on speeding it up.

Iron Helix (Spectrum Holobyte, 510-522-3584, $99.95) is an action adventure game set in the future. A biological weapon threatens to start a galactic holocaust—unless you can pilot a small robotic probe through an enormous starship.

Other titles scheduled for imminent release include The Labyrinth of Time (Electronic Arts, 800-245-4525, price not available), a Super-VGA maze with logical puzzles and historical themes (you travel from a subway car to various historical eras); Myst (Brøderbund, 800-521-6263; $59.95), a stunningly photo-realistic adventure from Rand and Robyn Miller (developers of the Manhole and Cosmic Osmo), ship-

ENTERTAINMENT SOFTWARE

ping in early 1994; The XIth Hour: 7th Guest Part II (Virgin Games), the eagerly awaited sequel to The 7th Guest (planned for late 1993 or early 1994); Microcosm (Psygnosis, 617-497-7794, $59.95), yet another great-looking sci-fi game; and Conspiracy (Virgin Games), a Soviet thriller starring Donald Sutherland.

If you think Conspiracy sounds more like a movie than a CD-ROM game, prepare to be amazed by the CD-ROM games that will be released in 1994. Access (800-800-4880) is set to release its double CD-ROM game, Under a Killing Moon, by early spring, starring Margot Kidder, Brian Keith, and Russell Means. If you have the new $449 Reel-Magic board from Sigma Designs (510-770-0100), you'll be able to view its virtual reality sequences as full-screen, full-motion video with CD-quality sound. Other CD-ROM games that will be available in Reel-Magic's MPEG-compression format include Activision's Return to Zork, Interplay's Lord of the Rings, Readysoft's Dragon's Lair, Sierra's Outpost and Police Quest 4: Open Season, and Virgin's The XIth Hour: 7th Guest Part II.

Expect 1994 to be the year that interactive movies truly come of age.

—David English

TOP 10 CD-ROM GAMES

The Journeyman Project. The pre-release runs slow, but the graphics are the best I've seen. Looks to be the best conceived of the bumper crop of science-fiction CD-ROM games.

King's Quest VI. One of Sierra's best games, enhanced for CD-ROM with dialog, a high-resolution interface, and a 50MB opening animation.

The 7th Guest. Most celebrated and innovative CD-ROM game of the first half of 1993. Great musical score and eye-popping interiors paved the way for the current wave of stunning titles.

Day of the Tentacle. Wacky graphics and humorous storyline makes this spoof of 1950s sci-fi movies a joy from start to finish. Cast includes Richard Sanders of "WKRP in Cincinnati."

Rebel Assault. Combine the excitement of X-Wing with high resolution graphics and a movie-like score, and you have the first high-powered arcade game for CD-ROM.

The Chessmaster 3000. Simply the best way to learn chess on your own. The spoken instructions make the CD-ROM version extremely easy to use.

Space Quest IV. Roger Wilco is back, and this time in full voice. Garry Owen, of "Laugh-In" fame, provides the commentary. Even more fun than the disk version.

Hell Cab. Great graphics and a cunning sense of humor make this the game to show your neighbors.

Microsoft Multimedia Golf. Though it doesn't have the high-resolution backgrounds of Links 386 Pro, this CD-ROM version of Microsoft Golf for Windows includes spectacular flybys of each hole and video golf pro tips. Compatible with Access' Links golf courses.

Under a Killing Moon. Given the strength of early previews, this looks to be one of the top CD-ROM games of 1994. It's the first CD-ROM game to use several well-known actors and include virtual reality technology.

HOW PC GAMES PLAY IN EUROPE

The PC game scene is quite different in England and Europe from that in the U.S. For a start, the PC isn't the only machine in the picture. Another factor is that England and Europe tend to lag behind the U.S. in many technical respects.

The Competition

The European hardware purchasing public is less affluent than that in the United States and yet is faced with relatively more expensive equipment.

The low end of the market is made up of kids who would buy Sega or Nintendos in the U.S. Many European youngsters shell out around £100-200 for a console, though there's a significant overlap with a second group of youngsters who persist with the classical home computer. Commodore sells hundreds of thousands of A1200s and A600s, as well as, until fairly recently, millions of C64s.

PCs and Games in the UK

Rarely are PCs purchased simply for game playing. The main reason is cost. A basic 386 PC system in the UK will set you back around £800-1000, depending on the amount of hard drive and RAM resources you get. This is without the obligatory sound card, speakers, and joystick gizmos, which will add an additional £100 to the total, giving you a layout of around $1600, before you've even fired a shot in anger at any alien scumbags. Is it any wonder why the English, hassled into poverty by the recession, would prefer to spend their hard earned cash on a $500 Amiga?

I think it's fair to say that there's a cultural difference between the two sides of the Atlantic in terms of PC usage and general computer literacy; U.K. users lag behind a couple of years. This is reflected in the number of personal computers required at home to keep us up to date with the office work, and since this group makes up the bulk of game purchasers, it's been a slow start for PC gamers over the years, a situation which is finally changing. Software sales are roughly 50-50 with those for Amiga computers for any given product.

It's only recently that the U.K. has seen widespread availability of 386 clones (about a third of PCs sold by games retailers are Amstrads, a third are badged Eastern imports, and the rest are IBMs). These PCs now are able to keep up with the fast graphics and wild sound that U.K. gamers demand.

Prior to 1993, few of the popular action games would even run on the older 286 EGA computers. Games on the PC were seen as mind-numbingly boring strategy affairs, with long drawn out scenarios that required a Ph.D. in warfare and twelve years to play. They took ages to get into and ages to lose, and the graphics were depressingly uninteresting to say the least. Flight simu-

ENTERTAINMENT SOFTWARE

lators, which took advantage of the PC's superior number crunching, were easily matched by the other computers' graphics chips, and programmers often used tricks to noticeably speed things up. The dolphinesque clicks that emanated from the minuscule internal speaker were laughable to those used to 8-bit stereo sampled sound, thundering out of your stereo system as the last alien exploded into a flaming fireball of cycling color. So what if your game ran off three floppies, required 26 disk swaps to get past the title animation, and the copy protection meant one in three loads aborted—you could live with that, couldn't you?

What's changed? The PC still has mind-numbing strategy games with the graphic prowess of a house brick, but nowadays companies such as Gremlin Graphics, Team 17, and Psygnosis have woken up to the fact that you can do animation on a PC—it does have more that 16 colors to play with; and 16-bit sound cards aren't as rare as rocking horse manure. There's a new wave of computer games about to hit the PC, and they owe their origins to the fast action multicolored worlds of the other systems mentioned. Spectacular still graphics is easy enough with 640 x 480 x 256 colors, but moving it around at 30-50 frames per second isn't as straightforward.

Conversion Problems

A game developer who has to code for widely different platforms such as the PC and Amiga faces a number of tricky problems. Since a given game usually will appear simultaneously on all platforms, it tends to be developed concurrently, rather than converted. Consoles are easier to code for because they have lower resolutions than the PC. European game developers, who are accustomed to writing games for minimal systems where there's precious little RAM to play with and disk access must be kept to a minimum as the luxury of a hard drive can't be counted on, are among the best. Their talents for squeezing the most out of very little are being applied to the PC and its unique problems. Brute force and processor power seemingly can overcome the lack of dedicated video graphics chips with scrolling hardware, sprites, and fast rendering engines.

These days, most games require at least VGA, and while many will run on a 640K machine, most of the decent ones will tax 2MB of RAM and take a 3-5MB chunk of hard drive out of your way.

TOP 5 EUROPEAN GAMES

Lemmings: This Psygnosis original releases as many as 100 of these stupid creatures, which duly walk over the nearest cliff, through the closest drowning pool, and into the most convenient trap. Only you can save them. The graphics are wonderful (imagine 100 sprites all doing their own thing at once). Just perfect.

Populous: Marketed by Electronic Arts and recently released at a budget price. For anyone who wants to be God—for just a while.

Zool: In this platform game from Gremlin Graphics, a cute Ninja-type character bounces around avoiding the bad guys, collecting the goodies, and killing the end-of-level guardian.

Alice in Wonderland: A great adventure in the type-in-and-go traditional sense. Graphics are extremely detailed, but the charm of the game is in its superb parser.

Lotus, The Ultimate Challenge: Flying around various circuits in an Esprit is OK, but the game really accelerates away from the rest if you play with another person. It's great fun, and the graphics whizz by so quickly the slightly rough scrolling is forgivable.

Price and Piracy

Games in the U.K. are, on average, more costly than in the U.S. Usually you find a direct swap of the pound sign for the dollar sign, and it doesn't take Lotus 1-2-3 to see the exchange isn't favorable. However, things are changing with many of the best older titles being re-released at *budget* prices, usually £10-20, and these really represent good value for money.

It has to be said, and I'm ashamed to say it, but we have the best pirates in the business manning all kinds of bulletin boards. It's not unusual for a fully cracked game (that is, all copy protection vanquished and, somewhat cheekily, a whole host of cheats built into the code) to be up on a BBS before the game is launched officially. Clearly this is detrimental and is one reason why many companies are moving to the PC, where the problem is less acute. (Amiga versions of a top quality game may only ship 30,000 units in a potential market of 1.5 million machines.)

The PC world definitely is changing its face in the U.K. More of the top companies are porting their stuff to the platform, and several are developing exclusive titles for it.

U.K programmers are quit adept at squeezing the last ounce of animation power out of their computers, and to this end, you'll be seeing many more excellent action games. Platform games, football (or rather, soccer) games, blast-'em-to-bits-and-beat-the-living-daylights-out-of-the-Ninja-Nasty type of programs also will become commonplace.

—Mike Nelson

NEXT MONTH:

COMPUTE'S GETTING STARTED WITH™ Buying A New PC

COMPUTE'S GETTING STARTED WITH™
Entertainment Software
IS PRINTED ON RECYCLED PAPER.

Is there a topic you'd like to see covered in COMPUTE's Getting Started With™ Booklet? Let us know by calling 1-900-884-8681, ext. 7010301. The call will cost 95 cents per minute, you must be 18 or older, and you must have a touch tone phone. Sponsored by Pure Entertainment, PO Box 186, Hollywood, California 90078.

EDITORIAL

Editor	Clifton Karnes
Art Director	Robin Case-Mykytyn
Managing Editor	David English
Features Editor	Robert Bixby
Reviews Editor	Mike Hudnall
Gazette Editor	Tom Netsel
Entertainment Editor	Denny Atkin
Senior Copy Editor	Karen Huffman
Copy Editor	Margaret Ramsey
Editorial Assistant	Polly Cillpam
Contributing Editors	Sylvia Graham, Eddie Huffman, Tony Roberts, Karen Siepak
Interns	Chuck Hall, Robert Stone

ART

Assistant Art Director	Kenneth A. Hardy
Designer	Katie Murdock
Copy Production Manager	Terry Cash

PRODUCTION

Production Manager	De Potter
Traffic Manager	Barbara A. Williams

PROGRAMMING & ONLINE SERVICES

Manager	Troy Tucker
Programmers	Bruce M. Bowden Steve Draper Bradley M. Small

ADMINISTRATION

President, COO	Kathy Keeton
Executive Vice President, Operations	William Tynan
Editorial Director	Keith Ferrell
Operations Manager	David Hensley Jr.
Office Manager	Sybil Agee
Sr. Administrative Assistant	Julia Fleming
Administrative Assistant	Lisa G. Casinger
Receptionist	LeWanda Fox

ADVERTISING

Vice President, Associate Publisher	Peter T. Johnsmeyer (212) 496-6100

ADVERTISING SALES OFFICES

East Coast: Full-Page and Standard Display Ads—Peter T. Johnsmeyer, Chris Coelho; COMPUTE Publications International Ltd., 1965 Broadway, New York, NY 10023; (212) 496-6100. Southeast—Harriet Rogers, 503 A St., SE, Washington, D.C. 20003; (202) 546-5926. Florida—J. M. Remer Associates, 7040 N. Palmetto Park Rd., Suite 308, Boca Raton, FL 33433; (305) 933-1467, (305) 933-8302 (FAX). Midwest—Full-Page and Standard Display Ads—Starr Lane, National Accounts Manager; 7 Maywood Dr., Danville, IL 61832; (217) 443-4042, (217) 443-4043 (FAX). Detroit—Jim Chauvin, 200 East Big Beaver Rd., Troy, MI 48083; (313) 680-4610; (313) 524-2866 (Fax). Northwest—Jerry Thompson, Jules E. Thompson Co., 1290 Howard Ave., Suite 303, Burlingame, CA 94010; (415) 348-8222. Lucille Dennis, (707) 451-8209. Southwest—Howard Berman. 6728 Eton Ave., Canoga Park, CA 91303; (818) 992-4777. Product Mart Ads—Lucille Dennis, Jules E. Thompson Co., 1290 Howard Ave., Suite 303, Burlingame, CA 94010; (707) 451-8209. U.K & Europe—Beverly Wardale, Flat 2, 10 Stafford Terrace, London W87 BH, England; 011-4711-937-1517. Japan—Intergroup Communications, Ltd.; Jiro Semba, President; 3F Tiger Bldg. 5-22 Shiba-koen, 3-Chome, Minato ku, Tokyo 105, Japan; 03-434-2607. Classified Ads—Maria Manaseri, 1 Woods Ct., Huntington, NY 11743; (TEL/FAX) (516) 757-9562.

THE CORPORATION

Bob Guccione (chairman and CEO)
Kathy Keeton (vice-chairman)
David J. Myerson (president and CEO)
William F. Marlieb (president, marketing, sales and circulation)
Patrick J. Gavin (senior vice president and CFO)
Richard Cohen (executive vice president and treasurer)
Frank DeVino (executive vice president, graphics director)
Jim Martise (executive vice president, circulation)
Jeri Winston (executive vice president, corporate services)
Hal Halpner (vice president, director of manufacturing)
William Tynan (vice president, technology and information services)

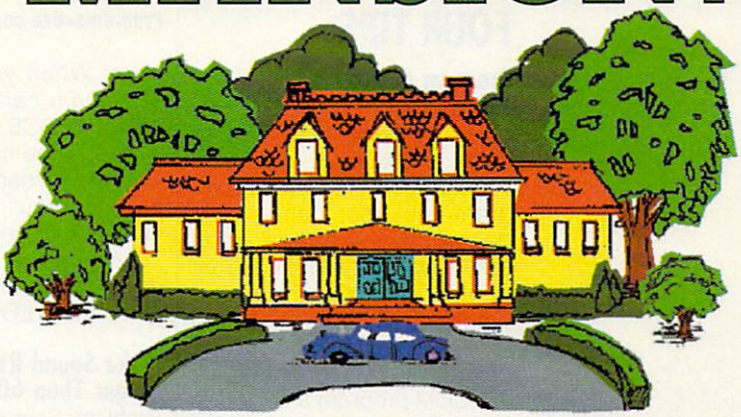
ADVERTISING AND MARKETING

Sr. VP/Corp. Dir., New Business Development: Beverly Wardale; VP/Dir., Group Advertising Sales: Nancy Kestenbaum; Sr. VP/Southern and Midwest Advertising Dir.: Peter Goldsmith. Offices: New York: 1965 Broadway, New York, NY 10023-5965, Tel. (212) 496-6100, Telex 237128. Midwest: 111 East Wacker Dr., Suite 508, Chicago, IL 60601; (312) 819-0900. (312) 819-0813 (FAX). South: 1725 K St. NW, Suite 903, Washington, DC 20006, Tel. (202) 728-0320. West Coast: 6728 Eton Ave., Canoga Park, CA 91303, Tel. (818) 992-4777. UK and Europe: Flat 2, 10 Stafford Terrace, London W87 BH, England; Tel. 011-4711-937-1517. Japan: Intergroup Jiro Semba, Telex J25469IGLTYO, Fax 434-5970. Korea: Kaya Advtsng., Inc., Rm. 402 Kunshin Annex B/D 251-1, Dohwa Dong, Mapo-Ku, Seoul, Korea (121), Tel. 719-6906, Telex K32144Kayaad.

ADMINISTRATION

Sr. VP, CFO: Patrick J. Gavin; EVP/Corporate Services: Jeri Winston; VP Director Sales Promotions: Beverly Greiper; Dir. Newsstand Circulation: Maureen Sharkey; Dir., Newsstand Operations: Joe Gallo; Dir. Subscription Circulation: Beatrice J. Hanks; VP Director of Research: Robert Rattner; Advertising Production Director: Charlene Smith; Traffic Dir.: William Harbutt; Dir., Budget and Finance: Tom Maley; Production Mgr.: Tom Stinson; Asst. Production Mgr.: Nancy Rice; Mgr., International Div.: George Rojas; National Marketing Director: Anne M. Zink; Exec. Asst. to Bob Guccione: Diane O'Connell; Special Asst. to Bob Guccione: Jane Homlish.

WIN A MANSION!



OR $500,000.00 CASH!

One of these or 98 other cash prizes could be yours in the next six months. All you have to do is play and win in **COMPUQUEST'S WIN A MANSION CONTEST.**

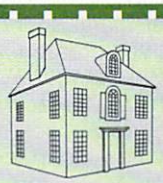
What's it take to play? Three simple items you probably already have: (1) a computer with a modem, or access to one; (2) a knowledge of either Sports, Entertainment or General Information trivia; and (3) an entry fee of $100.00.

And look how easy it is to win! Using your computer on-line with the contest (we'll even provide an 800 number), answer the trivia questions in the category of your choice. A series of elimination rounds based on accuracy and speed result in the Grand Prize Winner being given the choice of the luxurious mansion (valued at $1,000,000.00) or $500,000.00 in cash. And 98 other finalists win cash prizes ranging from $500 to $50,000 for a total of **$122,500.00 in secondary prizes.**

So how can we do this? Well, after we get 22,000 entries the game begins and if we don't have enough entries we'll return your money. **Guaranteed.** All the entry fees will be held in escrow by a major bank until the game starts.

But the most entries we'll accept is 60,000 so your odds of winning something are about 1 in 600 – pretty good odds in our book. Only $7.00 starts you on the road to possible fame and fortune. For that $7.00 we'll send you a computer disk with a demonstration of the game with sample questions, complete set of rules, entry application and the communication program for the type of computer (DOS or MAC) that you will use on-line. No magazines to buy. No swampland to visit. No essays or jingles to write. And if you don't like the demo you're under no obligation to enter.

Simply fill out the necessary information below and return it to us with $7.00 today. (Photo copies will be accepted.)



Win A Mansion,™ Inc.

604 Corporate Drive West • Langhorne, PA 19047 U.S.A.

Name_____

Address_____

City_____ State_____ Zip_____

Phone ( ) _____ Entrants must be 18 years of age or older.

DOS ☐ 3.5 ☐ 5.25 MAC ☐ 3.5 Check ☐ Money Order ☐ 1C

Circle Reader Service Number 122

WINDOWS WORKSHOP

Clifton Karnes

FOUR TIPS

Program Order

Problem: When you run a program by specifying its filename without an extension and there is more than one program with that name, Windows uses the extensions to decide which program to run. In other words, with the two programs MYPROG.EXE and MYPROG.COM, Windows, by default, will search for and run the COM program first. This is inefficient, however, if you use mostly Windows programs, which are EXE files.

By creating a blank sound file, you can break Sound Recorder's 60-second barrier.

Solution: Change the order Windows uses to search for programs.

Background: Both MS-DOS and Windows look for programs in a certain order. DOS first checks to see if the command issued is an internal DOS command; next it looks in the current directory and on the path for files in this order: COM, EXE, and BAT. Windows doesn't check to see if the command is internal, but it runs programs in the same order: COM, EXE, and BAT, followed by PIF.

The big difference between Windows and DOS is that Windows lets you change the order in which it runs programs. If most of the programs you run are Windows programs, which always end in EXE, then having the system search for COM files before EXE files is unnecessary overhead.

Step by step:

1. Run SysEdit and make WIN.INI active.
2. Find the Programs= entry in the [Windows] section. It will probably look like this.

```
Programs=com exe bat pif
```

3. Edit the line so it reads as follows.

```
Programs=exe com bat pif
```

Note: When you run a program, you can eliminate the search in DOS or Windows by including the extension along with the filename. For example, if you specify NOTEPAD.EXE instead of NOTEPAD, neither DOS nor Windows will search for other files named NOTEPAD.

Make Sound Recordings Longer Than 60 Seconds

Problem: Sound Recorder has a maximum default recording length of 60 seconds.

Solution: Create a blank sound file to insert in another file.

Step by step:

1. Run Sound Recorder and record for 60 seconds with your microphone turned off.
2. Save this file as BLANK60.WAV (don't forget the WAV extension).
3. Whenever you want to extend the recording time of a file, open BLANK60.WAV; choose Edit, Insert File; and insert another copy of BLANK60.WAV in the file.

Note: BLANK60.WAV is 2.5MB in size. You'll have to have a substantial amount of RAM and disk space to make sound files longer than the default 60 seconds. One solution is to make a second, shorter blank sound file to insert. I've created a file called BLANK15.WAV, which is a blank 15-second sound file. I simply insert this as many times as necessary to increase the length of BLANK60.WAV.

A Solid, Nonblinking Cursor

Problem: Windows' blinking cursor can be irritating.

Solution: Change the blinking cursor to a solid one.

Step by step:

1. Run SysEdit and activate WIN.INI.
2. In the [Windows] section, find the CursorBlinkRate= entry.
3. Change the value to CursorBlinkRate=-1.
4. You can test your cursor by running Control Panel, Desktop and clicking on OK.

Note: The default blink rate is 530, with a range of 0–1200. These numbers determine how long, in milliseconds, the cursor will be displayed, so larger numbers mean a slower cursor. The value -1 turns the cursor on. You can change the cursor blink rate in Control Panel, but you can't turn blinking off, as we have done by editing the WIN.INI file and adding a -1 to CursorBlinkRate.

Save File Manager Settings

Problem: When you set up File Manager just the way you want it, the normal way to save your settings is to select Save Settings on Exit, close File Manager, run it again, and turn off Save Settings on Exit.

Solution: Shift–double-click on File Manager's Control-menu box.

Step by step:

To save your settings at any time, simply hold down the Shift key and double-click on File Manager's Control-menu box.

Note: There is a similar (and better-known) way to save settings in Program Manager by clicking on its Control-menu box, but most people don't know you can do the same with File Manager.

These four tips are taken from my new book, Essential Windows Tools *(published by COMPUTE books). All are drawn from the chapter "52 Essential Power Tips."* ❐

BUY THE BEST OF '93*

And get the best of '91 & '92 *FREE*

***As Chosen by Computer Gaming World & PC Games**

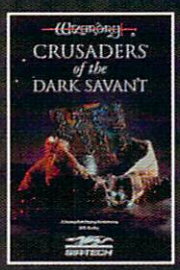
OVER 4.6 MILLION SOLD

Wizardry® TRILOGY 2

WIZARDRY V, VI & VII

Winner of over 15 International Awards

WIZARDRY, the game that pioneered first-person perspective & defined computer role-playing for more than a decade. Now, the award-winning WIZARDRY V, VI & VII are available in 1 complete package, at 1 incredible price. Three best selling games, with over 500 hours of engaging,replayable adventure, come to you with a savings of 25% off individual suggested retail prices.



CRUSADERS OF THE DARK SAVANT

REDEFINING ROLE-PLAYING FOR AN ENTIRE INDUSTRY

1993 ROLE-PLAYING GAME OF THE YEAR *COMPUTER GAMING WORLD*

1992 Fantasy Role-Playing Game of the Year *PC Games*

1992 Role-Playing Game of the Year *Strategy Plus Magazine*

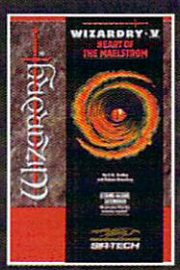
BANE OF THE COSMIC FORGE

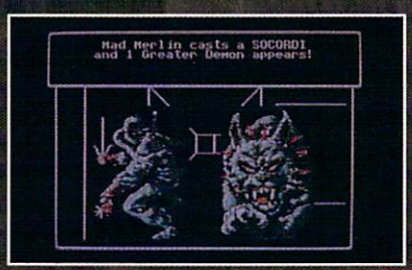
PAVING THE WAY FOR THE SYSTEMS OF THE FUTURE

1991 Best Game of the Year *Strategy Plus Magazine*

1991 Best Role-Playing Game of the Year *Strategy Plus Magazine*

1991 Top Role-Playing Game, April 1991 *Computer Gaming World*





THE LEGACY OF HEART OF THE MAELSTROM

BREAKING AWAY FROM THE WIZARDRY SYSTEM OF THE PAST

THE WIZARDRY TRILOGY
Scenarios I, II & III

The original classics that set the trend in fantasy role-playing are now available at a new low price!

SIR-TECH

Ogdensburg Business Center, P.O. Box 245
Ogdensburg, NY 13669 (315) 393-6633
FAX# (315) 393-1525

Circle Reader Service Number 171

Available at a software retailer near you, or call:

(800) 447-1230

INTRODOS

Tony Roberts

DATA COMPRESSION: PACKING IT IN

Compression is an inexpensive way to double the space on your disk.

It's axiomatic: Data expands to fill all available storage space on your disk.

When you run out of room, you can either delete files, purchase additional storage, or find some way of making more data fit into less space. For more and more computer users, the last option, data compression, is the best way to go. Let's see how compression works and look at the ways it can be achieved.

Compression software uses a variety of algorithms to compact files. These programs usually start by looking for repeated characters in a file. For example, many people routinely press the space bar five times every time they indent a paragraph. The compression software identifies these repeated strings, and instead of storing five spaces in the disk file, it stores a code that means five spaces.

The compressed file, therefore, is a series of special codes that describe the original file. When file decompression is requested, the codes are expanded, and the file is returned to its original form and size.

Graphics, word-processing, database, and spreadsheet files usually compress well because of the high incidence of repetitive data that occurs in them. Program files, however, normally do not compress as much.

For years, telecommunicators have been big fans of file compression. Smaller, compressed files transfer much faster than uncompressed files, and that means lower connect-time charges, which in turn means lower long-distance bills. But even if you're not a telecommunicator, you may want to begin compressing some of your files to free up some disk space and to simplify file management.

Single files or groups of files can be compressed with utilities such as PKZIP and LHArc. PKZIP has become a widely recognized standard. LHArc, another well-known compression program, is freely distributed. Be aware that the compression algorithms used by these programs differ, however, so a file compressed with PKZIP can't be decompressed with LHArc.

In addition to saving space, compression utilities can take several files and combine them into one file called an archive. For example, you can gather up all the files you used to prepare last year's tax returns—spreadsheet files, word-processing files, tax-preparation software files, and so on—and bundle them into an archive called TAXES92. Copy this archive file to a floppy disk and store it with your income tax materials. When you're ready to work on your 1993 tax return, you'll have all of your 1992 documents to use as a handy reference right at your fingertips.

Or, for another example, look at your correspondence subdirectory. Does it include dozens or hundreds of memos that you keep on hand because you may want to refer to them sometime? Why not take all of your letters from 1993 and compress them into one archive called LTRS93? In addition to freeing up hard disk space, archiving your letters reduces the clutter in your correspondence subdirectory. If you ever need one of the letters in the archive, you can give a command to decompress only the one you need.

In the past few months, another type of compression—whole disk compression—has received considerable attention, thanks to the inclusion of DoubleSpace as an integral part of DOS 6. Under this system, everything that's stored on disk is compressed as it's being saved and decompressed as it's being read. And it all happens without any intervention from the user.

Disk compression may slow system performance a tad, but the payoff is that you can store nearly twice as much data on any given disk. On a fast computer, the slowdown is barely perceptible. DoubleSpace and similar utilities, such as Stacker from Stac Electronics, can provide a low-cost way to expand your system without your having to open the box and install new hardware.

However, the inclusion of DoubleSpace with DOS 6 has fueled a continuing debate about the safety of disk compression. While the majority of users have installed DoubleSpace successfully, a few have reported problems and have experienced data loss. Most of these problems appear to be installation issues, and Microsoft's answer—a DOS 6.2 maintenance release—may be available by the time you read this.

It's clear, though, from Stacker's track record and from the experience of those who've achieved successful installation of DoubleSpace, that whole disk compression is a viable alternative to installing a new hard drive. Still, the standard computing caveat—always keep backup copies of your data—bears repeating.

If you use whole disk compression, note that you won't double the benefit by trying to combine the effects of Stacker or DoubleSpace with PKZIP or LHArc. Once a file is compressed, the whole disk compression program won't be able to do much more. ❐

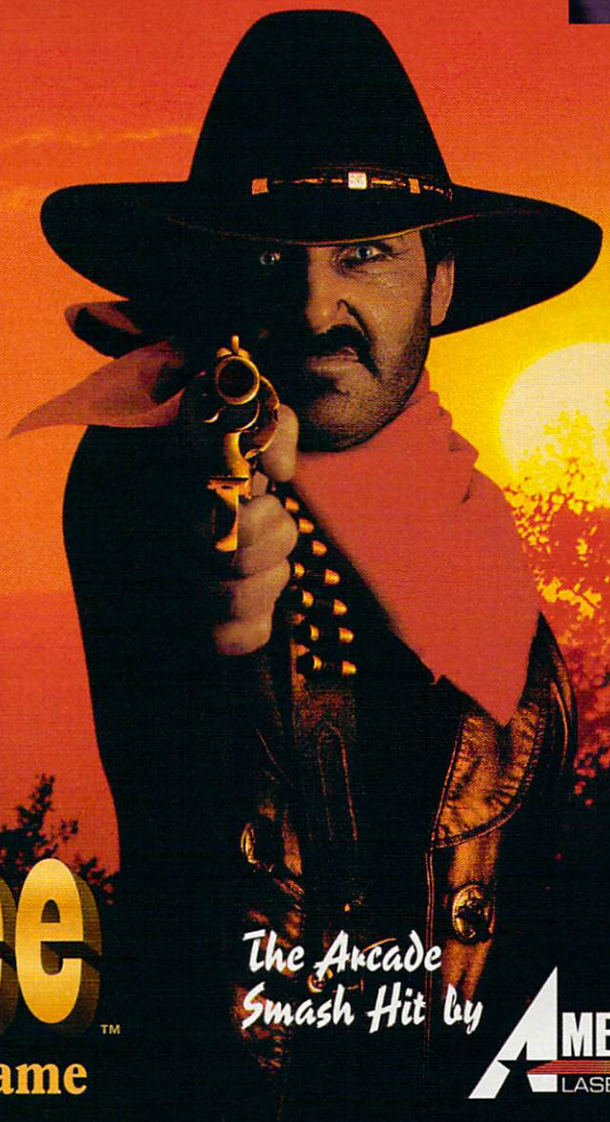
HE'S HERE, ON CD-ROM

If you don't find him, he'll find you!

FUN STATION

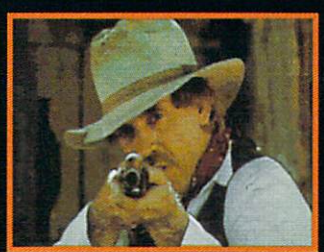
Mad Dog McCree™

Shooting Game



The Arcade Smash Hit by AMERICAN™ LASER GAMES, INC.

LIVE MOTION PICTURE ACTION™



Mad Dog McCree is known worldwide as one of the highest rated arcade games and is the first interactive shooting game with real live motion picture action. Mad Dog and his men have kidnapped the town's mayor and his daughter. To save the town, you will be challenged by a saloon full of outlaws, a hair-raising bank robbery, gunfighters, a slew of Old West ambushes, and Mad Dog himself.

Call 1-800-758-HOME or visit your local retailer

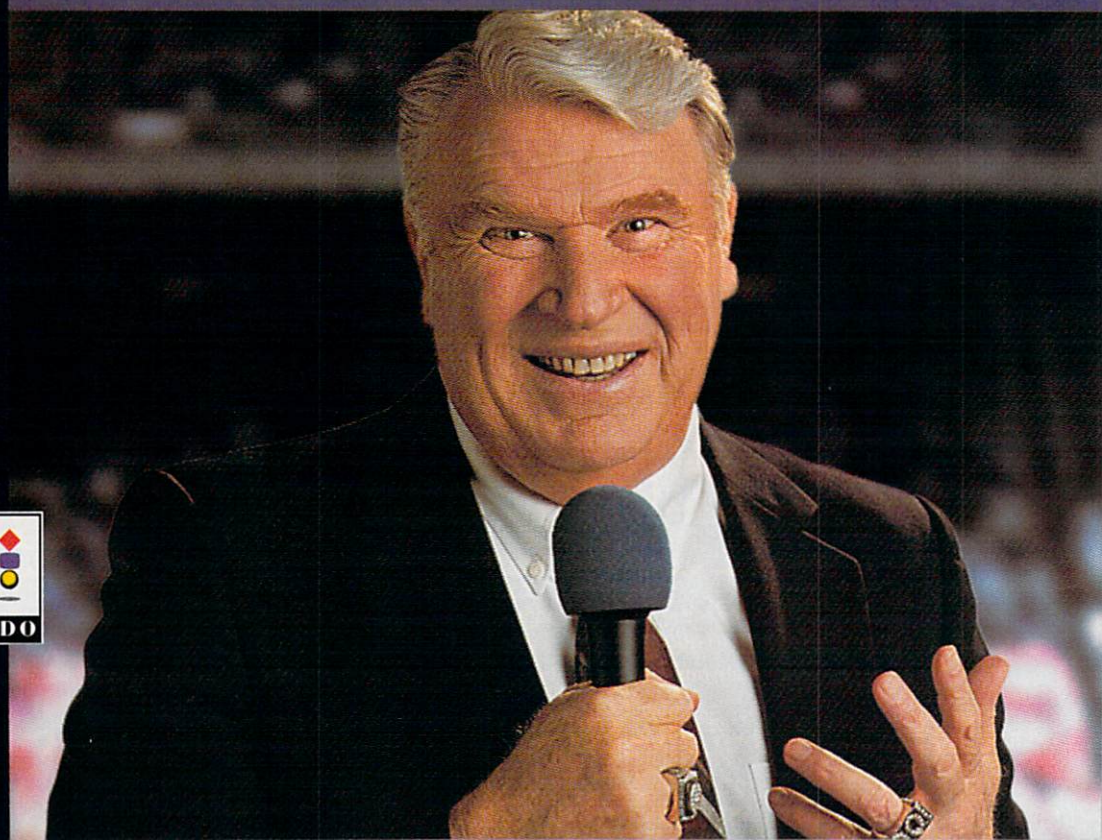
A licensed product from American Laser Games published by International Business Machines Corporation. © Copyright American Laser Games 1990, 1993. © Copyright International Business Machines Corporation, 1993. All rights reserved. Mad Dog McCree is a trademark of American Laser Games. Funsation is a trademark of International Business Machines Corporation.

A 3DO EXPERIENCE

Electronic Arts software for the 3DO system is about to revolutionize the way you play games. The new 3DO system delivers photo realistic graphics, CD-quality sound and gameplay so real it's hard to tell where your living room ends and the software begins.

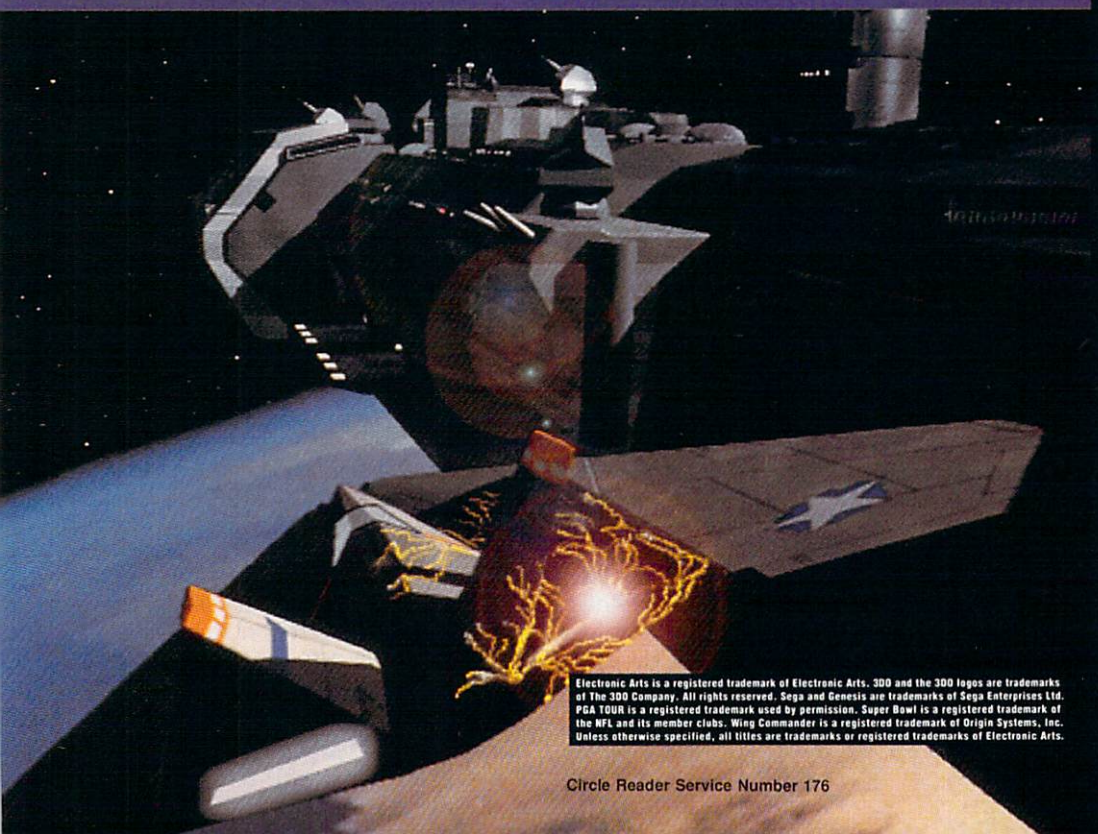
Electronic Arts has been at the forefront of innovative technology throughout our ten year history. We have supported all of the major successful hardware platforms, and led the pack onto the Sega™ Genesis.™ Now we've recognized the technological leap 3DO has to offer and we're planning to introduce twenty new titles for 3DO over the next twelve months.

THE FACE OF



3DO

THE FUTURE



We are developing titles with Hollywood-style special effects, full-color video and intense game-play. This new software ranges from Super Wing Commander® to PGA TOUR® Golf to Peter Pan. Grab the controls of your fighter jet and stop the alien invasion in Shock Wave.™ Fight your way to the Super Bowl® in John Madden Football,™ your cleats biting into the turf. Rip through the squalid city streets, the cold, hard bite of a steel chain assaulting your face in Road Rash.™ It's software as you've never seen it be-fore. Face the future with Electronic Arts and 3DO.

Electronic Arts is a registered trademark of Electronic Arts. 3DO and the 3DO logos are trademarks of The 3DO Company. All rights reserved. Sega and Genesis are trademarks of Sega Enterprises Ltd. PGA TOUR is a registered trademark used by permission. Super Bowl is a registered trademark of the NFL and its member clubs. Wing Commander is a registered trademark of Origin Systems, Inc. Unless otherwise specified, all titles are trademarks or registered trademarks of Electronic Arts.

ELECTRONIC ARTS

Circle Reader Service Number 176

PROGRAMMING POWER

Tom Campbell

PROGRAMMING WINDOWS HELP FILES

To create a WinHelp HLP file, you need at least two source files. The first is a project file, with the default extension HPJ. The project file contains, at a minimum, a list of all the help source files (called topic files) in the project. The other file or files are the actual help source files, which use a default extension of RTF.

Project files are in sections and look somewhat like the INI files so common to Windows applications and the Windows system itself. At a minimum, you need a [Files] section and a list of the topic files. For example, the minimum HPJ file for a product called SuperNote might be named SUPRNOTE.HPJ and contain just one topic file in its [Files] section. It would look like this.

RTF is a minilanguage in which the keywords start with a backslash.

```
[Files]
SUPRNOTE.RTF
```

Most help files also have an [Options] section with such items as compression level, copyright, title, and so on; but you can get by just fine without it to start.

Topic files are much more complicated, even at a minimum, and that's what brought this column about. I have to create large help files frequently. They need good indexes, generous keyword lists, and lots of hyperlinks. They don't need the many impressive bells and whistles that come with the help engine, such as user-defined buttons, custom DLLs, or CD-ROM file systems. All that stuff is great, and I strongly encourage you to read the help compiler documentation. It won't take you long to realize that the Windows help system is an unsung hero in the development world. But that doesn't solve the simple problem of creating a minimal help system. The help docs just don't tell you what to leave out. So, here goes.

RTF is a minilanguage in which the keywords start with a backslash, and compound statements employ the curly braces and semicolons so familiar to C programmers. All the rest is ASCII text.

1. The file must begin with a left brace and end with a right brace.

```
{ }
```

2. The first keyword is \rtf.

```
{\rtf}
```

3. The second is the \ansi statement.

```
{\rtf\ansi}
```

4. Next, you should include a \fonttbl statement enclosed in braces. The syntax is

```
{\fonttbl{\f<number><tag><multiword font name>;} . . . }
```

where <number> is replaced by a number such as 0, 1, or 15, <tag> is the one-word font name, <multiword font name> is the typeface family name, and the three dots mean 0 or more more occurrences of the \f statement. It's much easier to see the following example.

```
{\rtf\ansi
{\fonttbl
{\f0\froman Times New Roman;}
{\f1\fdecor Courier New;}
{\f2\fswiss Arial;}}
}
```

5. Specify the default font using the \def statement. The syntax is

```
\deff<font number>
```

where <font number> is a number, such as 0.

Here's an example.

```
{\rtf\ansi
{\fonttbl
{\f0\froman Times New Roman;}
{\f1\fdecor Courier New;}
{\f2\fswiss Arial;}}
\deff0
}
```

In this case, the default is f0, for Times New Roman.

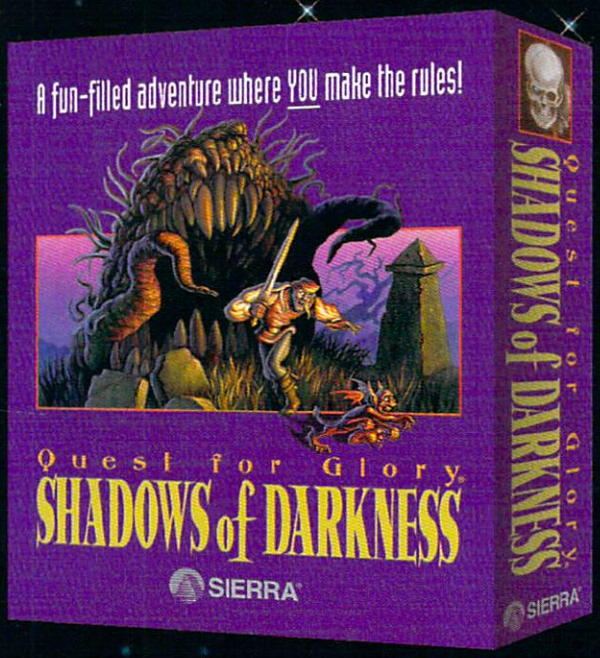
RTF is interesting in that, like most "real" programming languages, white space is irrelevant. That is, between the backslash keywords and the curly brace statements, you can use any number of spaces, tabs, or newlines—or none. The dreary part is that a simple blank line needs its own \par keyword and a tab uses the \tab keyword, instead of an ASCII 9. (This is actually good. DOS uses a different ASCII convention for blank lines than UNIX and the Mac, and IBM mainframes use something different from all of them. Consequently, RTF files offer an accurate, though bulky, means of assuring correct formatting on all computer systems.)

6. Create the topics with

```
#{\footnote <UniqueContext>}
${\footnote <Optional Topic Title>}<Topic text>
\page
```

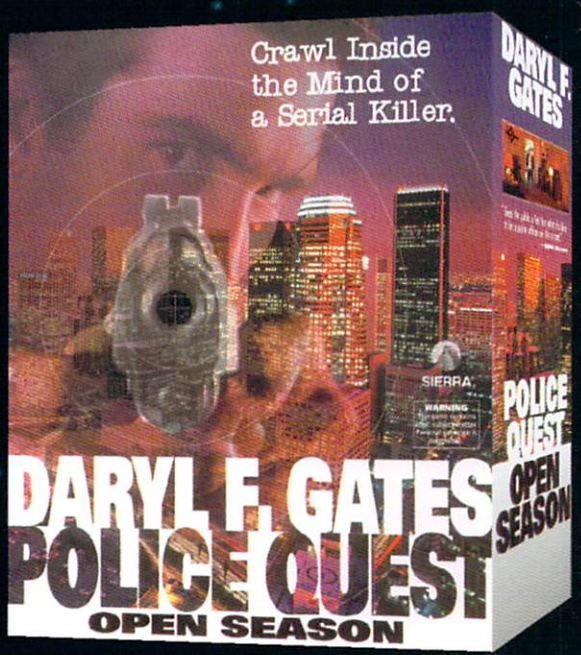
where <UniqueContext> is replaced by a unique context name. The name may consist of letters, digits, and the underscore character.

<Topic text> is just that—what you want to talk about in the help file. Note that newlines are ignored. To start a new paragraph, use the \par statement.



FANTASY

REALITY



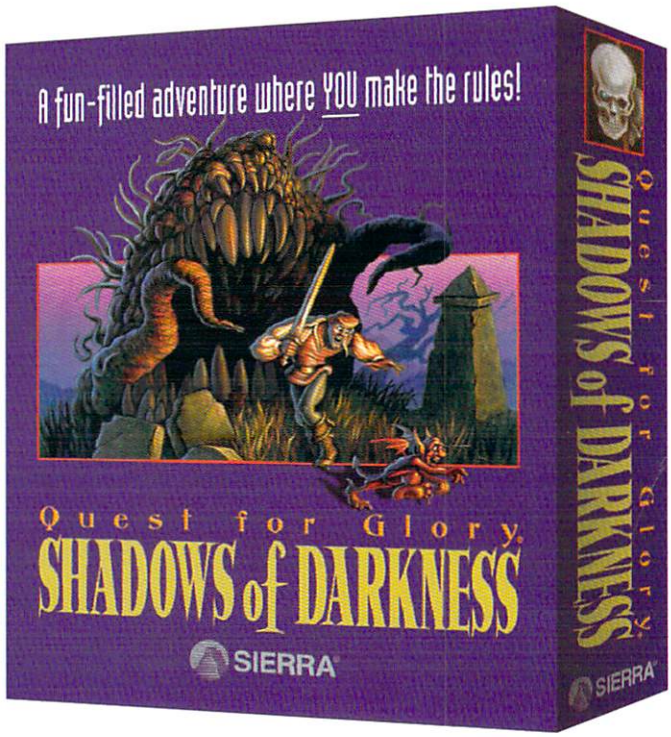
LOOK INSIDE

To find out why SIERRA is
your *Key to Adventure*

FANTASY

QUEST FOR GLORY®

Shadows of Darkness



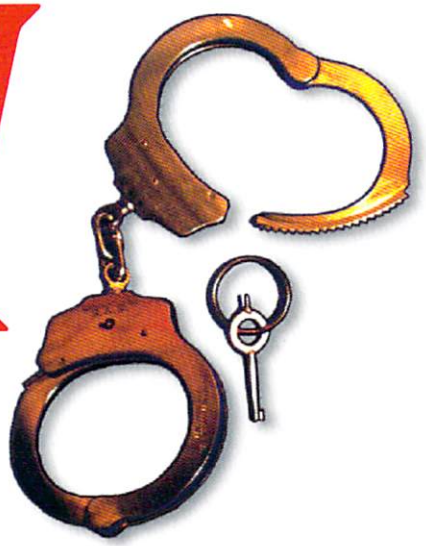
Save Mordavia, AND enjoy phantomful fun! This latest offering in the award-winning series was created especially for adventurers tired of playing by other people's rules! It features an advanced icon system and a combat mode that you customize to your own style.

LORI & COREY COLE

Lori and Corey Cole draw upon their expertise in computer, art, theatre, and role-playing games to create a truly interactive adventure. Their celebrated games have won a myriad of awards, including *Computer Gaming World*'s Adventure Game of the Year.

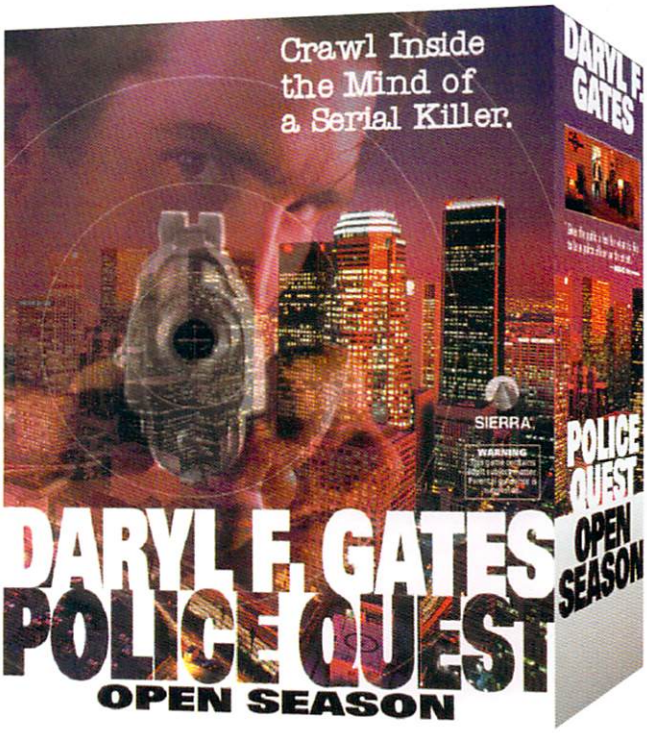
SIERRA®

REALITY



Chief Daryl F. Gates'
POLICE QUEST®
OPEN SEASON

Someone's on a killing spree, and it's up to you to solve a string of seemingly random murders. But play it by the book, or you could be the next victim. State-of-the-art digital photography and stark realism give an accurate view of what it's like to be a cop on the streets.

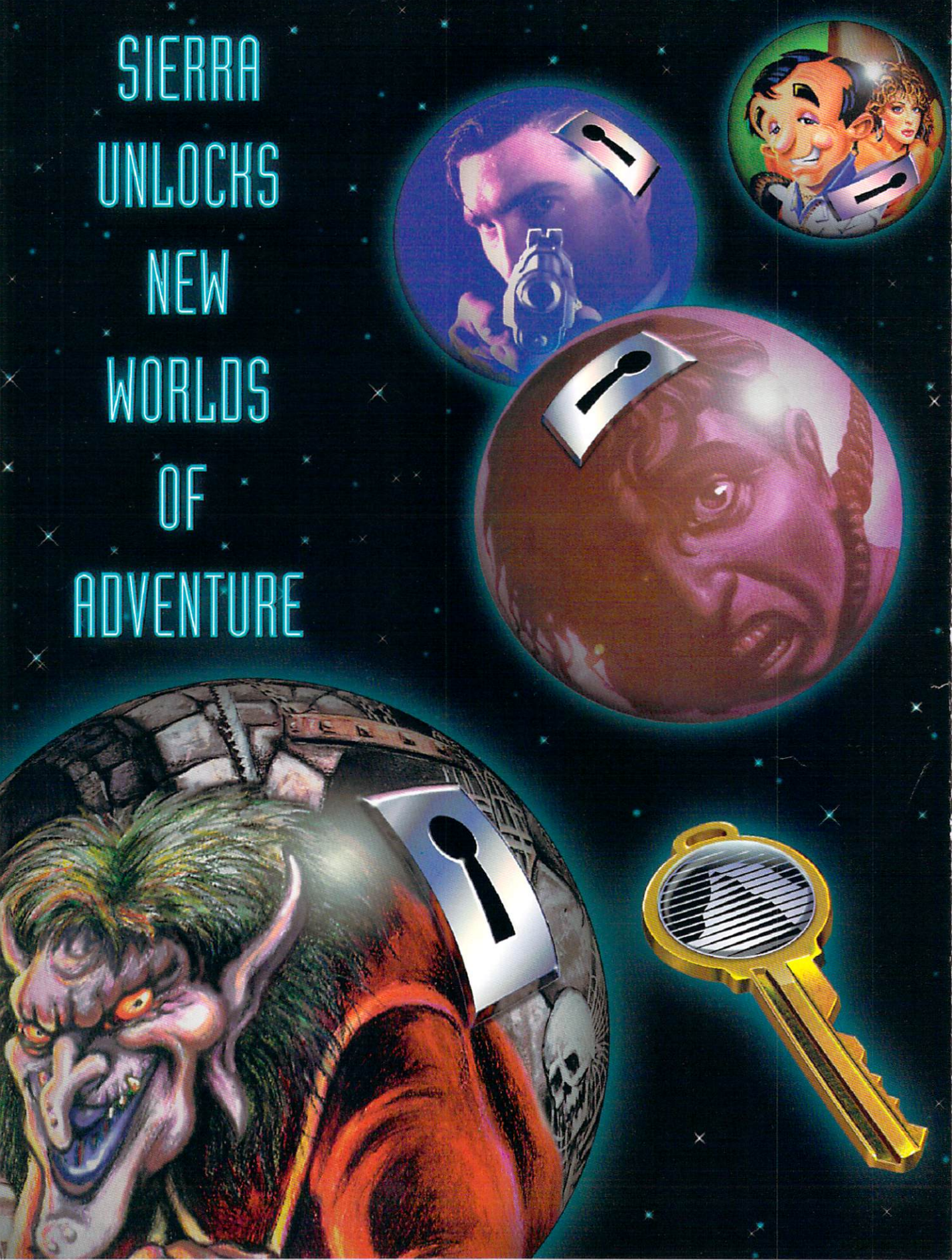


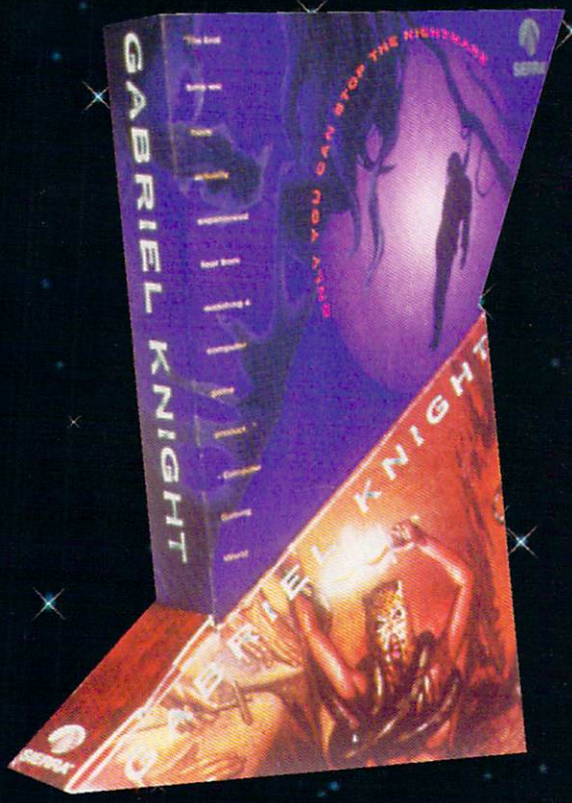
CHIEF DARYL F. GATES & TAMMY DARGAN

In his 43 years on the force, Chief Daryl F. Gates investigated some of the toughest serial murders of our time. *Open Season* director Tammy Dargan is a former producer of the television series *America's Most Wanted**.

SIERRA®

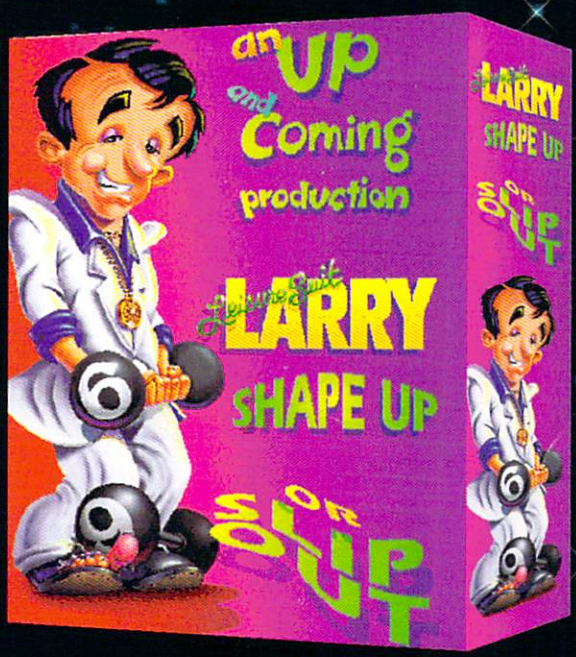
*This product has not been endorsed or sponsored by *America's Most Wanted.*


SIERRA
UNLOCKS
NEW
WORLDS
OF
ADVENTURE



INTENSITY

ABSURDITY



LOOK ON THE BACK

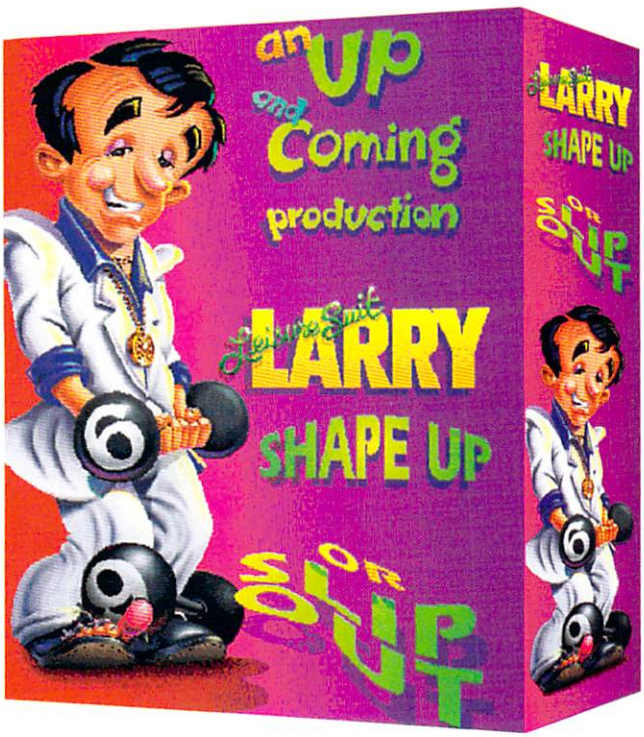
To find out how your *Key to Adventure*
could be your key to big prizes!

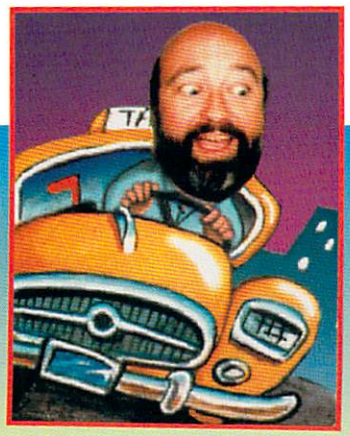
ABSURDITY

LEISURE SUIT LARRY®

Shape Up or Slip Out

This time around, Larry's at a posh resort spa, surrounded by luxury ... and nine gorgeous girls! How could he possibly mess this up? Easy! After all, we're talking about Larry. This is the longest, hardest Larry ever!





AL LOWE

Game designer Al Lowe is the culprit behind the Leisure Suit Larry phenomenon. Al is a former music teacher and jazz musician, which accounts for all the sax and violins in his games.

SIERRA®

Key to Adventure Contest!

1. Remove the *Key to Adventure* card. You can also write to Sierra to receive a *Key to Adventure**. Write to:
   ***Key to Adventure* Contest, P.O. Box 485, Coarsegold, CA, 93614**
2. Take it to any participating software retail outlet.
3. Check the key sequences on the poster.
4. If your key pattern matches any pattern found on the poster, you'll win a fabulous prize from Sierra! We're giving away the following:

One* Gateway *State-of-the-Art Multimedia Computer!
Valued at $3299.00

Two* MediaVision *Multimedia Computer Upgrade Kits!
Each valued at $899.00

25* Gravis *UltraSound Sound Boards!
Each valued at $199.00

50* Sierra *adventure games!
(featured inside)
Each valued at $69.95

2,000* Sierra *hint books!
Each valued at $9.95

So why are you still sitting there? Grab your *Key to Adventure* and get going!

Check your *Key to Adventure* card at these and other participating computer retail stores:
CompUSA, Computer City, Electronics Boutique, Incredible Universe, Software Etc.

Odds of winning PC:	1 in 1,700,000.
Odds of winning upgrade:	1 in 850,000.
Odds of winning sound card:	1 in 68,000.
Odds of winning Sierra game:	1 in 34,000.
Odds of winning Sierra hint book:	1 in 850.

Eligibility requirements: All contestants must be 18 or older to participate. Employees and their families of Sierra On-Line, Inc., its affiliates, and outside materials suppliers, are not eligible. Good only in the United States and Canada. Contest void where prohibited by law. No purchase necessary to win.

For a complete list of contest rules and prizes, send a self-addressed stamped envelope along with your request by December 15, 1993.

Contest ends January 31, 1994. Write-in requests must be postmarked by December 31, 1993. Prizes must be claimed, in writing, by February 28, 1994.

Please allow 4-6 weeks for delivery of prizes after receipt of winning contest cards at Sierra.

Unclaimed prizes will remain the property of Sierra On-Line, Inc.

*while supplies last

Sierra Publishing Division is a developer and publisher of premium entertainment and educational software. Sierra Publishing is a division of Sierra On-Line, Inc., located at 40033 Sierra Way, Oakhurst, California, 93644.

SIERRA®

Gateway *State-of-the-Art Multimedia Computer!*

MediaVision *Multimedia Computer Upgrade Kits!*

Gravis *UltraSound Sound Boards!*

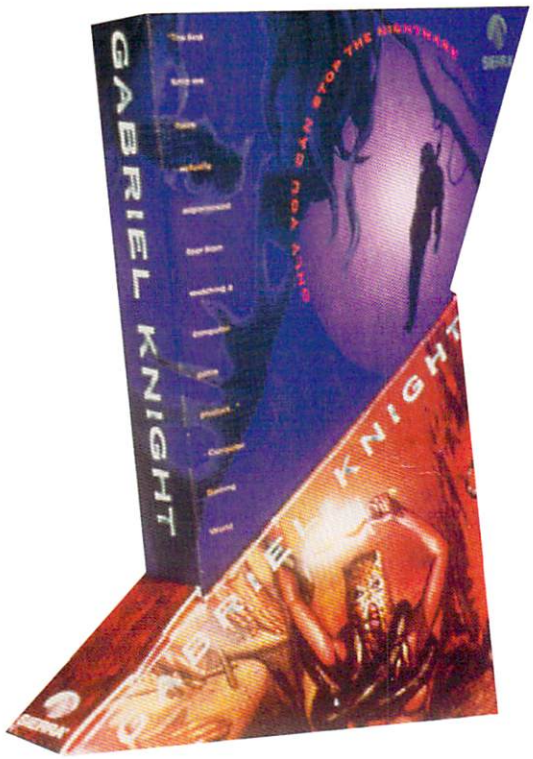
Sierra *hint books!*

INTENSITY

GABRIEL KNIGHT™

Sins of the Fathers

He started out writing a book on voodoo. Now he's fighting for his very soul in this dark, erotic journey into the supernatural. Help Gabriel Knight unlock the secrets of his past, and atone for the sins of the fathers.



JANE JENSEN

Designer Jane Jensen has written horror and suspense stories for many years. She co-designed *EcoQuest: The Search for Cetus*, and is co-author and co-director of the bestselling *King's Quest VI*.

SIERRA®

The <Optional Topic Title> really isn't optional. If you want the topic to show up in the search dialog, you need it. The <UniqueContext> string is what gives it a position in the file—titles don't have to be unique, but contexts, like subroutine names, do.

Here's an example.

```
{\rtf1\ansi
\deff2
{\fonttbl
{\f0\froman Times New Roman;}
{\f1\fdecor Courier New;}
{\f2\fswiss Arial;}}
#{\footnote SuperNoteOverview}
${\footnote Overview of SuperNote}
SuperNote makes note taking easier
than ever.
\par
\page
}
```

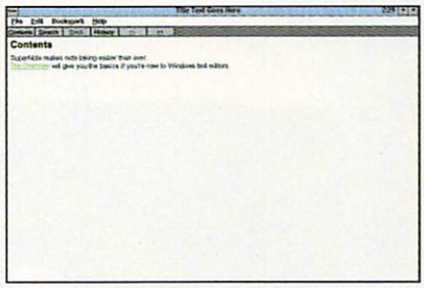
Why are the critical help context and topic title functions given \footnote commands? It's a kludge, that's why. Remember, RTF wasn't designed for the creation of help systems. Microsoft just chose RTF as the vehicle for help sources, perhaps because it's easy to create RTF filters for word processors.

SPEAK UP!

Is there a feature topic you'd like to see covered in COMPUTE?
Let us know by calling
900-285-5239
(sponsored by Pure Entertainment, P.O. Box 186, Hollywood, California 90078).
The call will cost 95 cents per minute, you must be 18 or older, and you must use a touch-tone phone.

7. End each topic with a \page statement, as shown above. You can have as many topics per file as you wish; one common convention is to have one file per menu and dialog in the application.

8. While you've just been given the absolute minimum, a help system is nothing without keywords. Keywords appear in the search dialog, using WinHelp's cool word-completion algorithm, which jumps to the first word matching the letters as you type them. You can have as



Creating simple help files can be easier than you think.

many keywords as you wish per topic, and they too use a footnote (this time, the K footnote:

K{\footnote Overview;Starting out}).

Footnotes can consist of more than one word, and you use semicolons to separatethem. You can put them anywhere, but I put them right after the title.

9. Your last task is to include hypertext links within the help text. The link consists at a minimum of the {\v} command with the name of the context following the \v. Normally, you will precede it with the text you want to show in green as the highlight using the {\uldb} command with the text following the \uldb. As an example, here's a link to the SuperNoteOverview context shown in the example above.

{\uldb The Overview}{\v SuperNoteOverView}will give you the basics if you're new to Windows text editors.

Technically, the \uldb isn't required. If you omit it, the context name will appear, which often works out fine in the case of SuperNoteOverView.

That's it. Fewer than ten steps as a basis for creating commercial-quality help systems with tools you already have. Your applications will have a burnished, well-rounded appearance that matches that of professional software.

Tune in again next month for an easier way! ❐

MEET THE EDITORS ONLINE

If you like reading COMPUTE magazine, you should see what we've done with the electronic version. That's right—COMPUTE now has its own area on America Online. Log on to AOL and then go to the keyword *compute.* Once in COMPUTE Online, you can read the current issue and back issues, conduct an electronic search for articles or topics of interest, read reviews, download software, and much more. You can even download entire copies of COMPUTE books.

Need a quick answer to a computing question? Contact the editors in the message area or chat with them live each week in COMPUTE Conference. You can also reach the editors by E-mail. Here's a list of the COMPUTE editors and their online names.

Clifton Karnes, editor: **CKarnes**

David English, managing editor: **DavdEnglsh**

Robert Bixby, features editor: **RBixby**

Mike Hudnall, reviews editor: **MikeHud**

Tom Netsel, Gazette and COMPUTE Online editor: **Tom Netsel**

Denny Atkin, entertainment editor: **DennyAmiga**

Stephen Levy, books editor: **SLevy1**

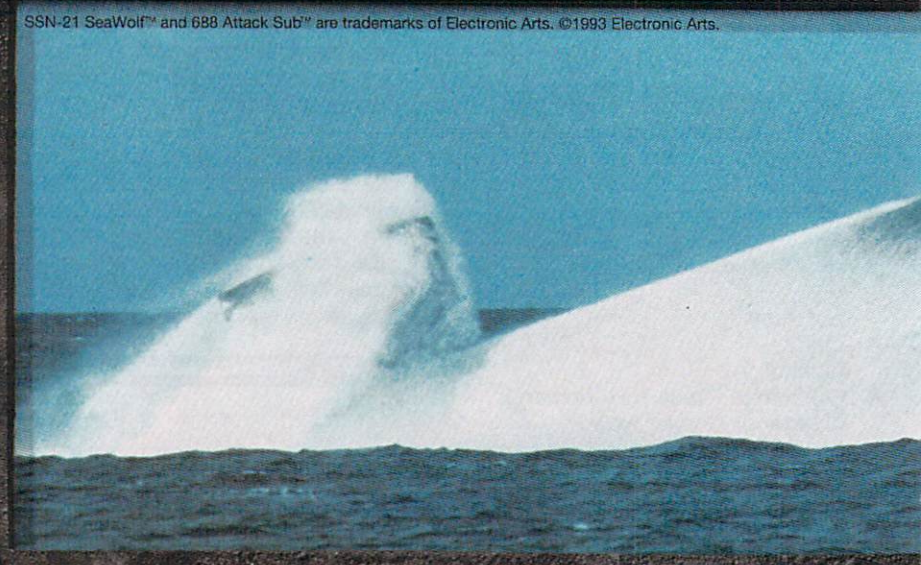
SSN-21 SeaWolf™ and 688 Attack Sub™ are trademarks of Electronic Arts. ©1993 Electronic Arts.

Ever wonder what it's like to have your life flash before your ears?

You'll find out when you play SSN-21 SeaWolf,™ the sequel to 688 Attack Sub.™ And the most realistic PC

submarine simulation this side of Annapolis.

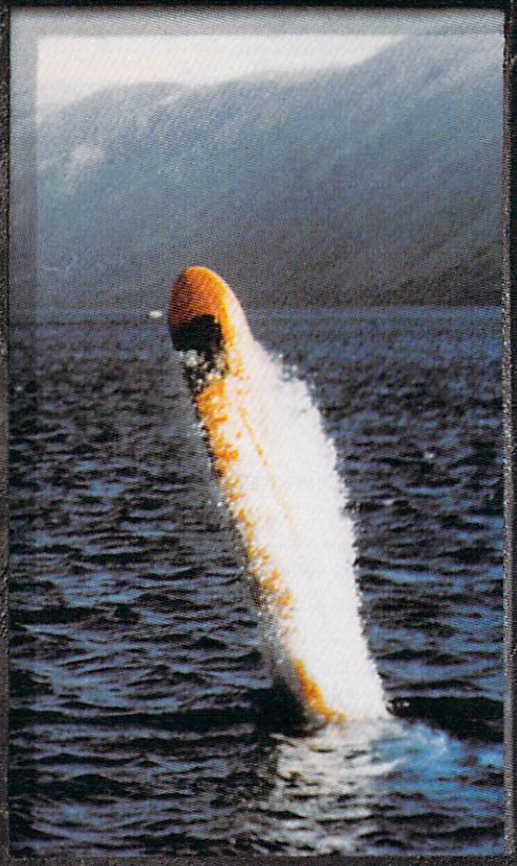
As you skipper the world's newest, most heavily armed nuclear attack sub, no less than 100 different sound effects assault your senses via our revolutionary 16-bit full digital stereo sound.



NOBODY KNOWS WHAT HEL
GIVE YOU A PRETTY GOO

You'll hear the eerie high-pitched whine of torpedoes as they home

in on their targets. The menacing drone of a destroyer passing overhead.



And damage reports from the mouths of crewmen praying they'll live to enjoy another liberty call.

Of course, it pays to

keep your eyes open, too. SSN-21 SeaWolf™ features color motion video, 3-D underwater mapping, and vivid digitized images of more than 50 real-world ships and aircraft.

Now, take a final breath of fresh air and dive into a world where good hearing is your greatest asset.

L LOOKS LIKE. BUT WE'LL
D IDEA HOW IT SOUNDS.

Sure, it'll test your nerves. But what were you expecting, the Love Boat?

ELECTRONIC ARTS

Circle Reader Service Number 184

READERSHIP SURVEY

We want COMPUTE to be as useful and interesting as possible and to provide you with the coverage you want. Please help us by taking a moment to fill out and send us this questionnaire. You can mail the completed questionnaire to us (photocopies are fine) or fax it.

Mail:
COMPUTE Readership Survey
324 W. Wendover Ave., Ste. 200
Greensboro, NC 27408

Fax: (910) 275-9837

What computer(s) do you own or plan to buy?

Own	Plan to Buy	
❑	❑	8088/8086, brand _____
❑	❑	80286, brand _____
❑	❑	80386, brand _____
❑	❑	80486, brand _____
❑	❑	Pentium, brand _____
❑	❑	Notebook/laptop, brand _____
❑	❑	Macintosh, model _____
❑	❑	Game system, brand _____
❑	❑	Other _____

Which video display system(s) do you use?
- ❑ Monochrome
- ❑ Hercules
- ❑ CGA
- ❑ EGA
- ❑ VGA
- ❑ Super VGA

Which peripheral(s) do you own or plan to buy?

Own	Plan to Buy	
❑	❑	5¼-inch disk drive
❑	❑	3½-inch disk drive
❑	❑	CD-ROM drive
❑	❑	Dot-matrix printer
❑	❑	Fax modem
❑	❑	Hard disk
❑	❑	Laser printer
❑	❑	MIDI device
❑	❑	Modem
❑	❑	Mouse
❑	❑	PostScript printer
❑	❑	Sound card
❑	❑	Speakers
❑	❑	Tape backup system

How much memory does your computer have?
- ❑ 640K or less
- ❑ 1MB
- ❑ 2MB
- ❑ 4MB
- ❑ 8MB
- ❑ 16MB

Which operating system(s)/environment(s) do you use?
- ❑ DR DOS version _____
- ❑ Microsoft Windows version _____
- ❑ MS-DOS version _____
- ❑ OS/2 version _____
- ❑ Other _____

Which parts of the magazine do you like the most?
- ❑ Art Works
- ❑ COMPUTE's Getting Started With
- ❑ Editorial License
- ❑ Fast Forward
- ❑ Features
- ❑ Feedback
- ❑ Game Insider
- ❑ GamePlay
- ❑ Hardware Clinic
- ❑ IntroDOS
- ❑ Multimedia Spotlight
- ❑ New Multimedia Products
- ❑ News & Notes
- ❑ News Bits
- ❑ Personal Productivity
- ❑ Programming Power
- ❑ Reviews
- ❑ Test Lab
- ❑ Tips & Tools
- ❑ Windows Workshop

Which of the following computer-related topics do you like to read about?
- ❑ Databases
- ❑ Desktop publishing
- ❑ Disk management and MS-DOS
- ❑ Education
- ❑ Games and entertainment
- ❑ Graphics (paint, draw, or CAD)
- ❑ How to upgrade your PC
- ❑ Integrated software
- ❑ Local area networks (LANs)
- ❑ Money management
- ❑ Multimedia
- ❑ New computer technologies
- ❑ New hardware
- ❑ Pen computing
- ❑ Programming
- ❑ Spreadsheets
- ❑ Telecommunications
- ❑ Windows
- ❑ Word processing
- ❑ Other _____

Where do you use your PC?
- ❑ Home
- ❑ Work
- ❑ School
- ❑ Other _____

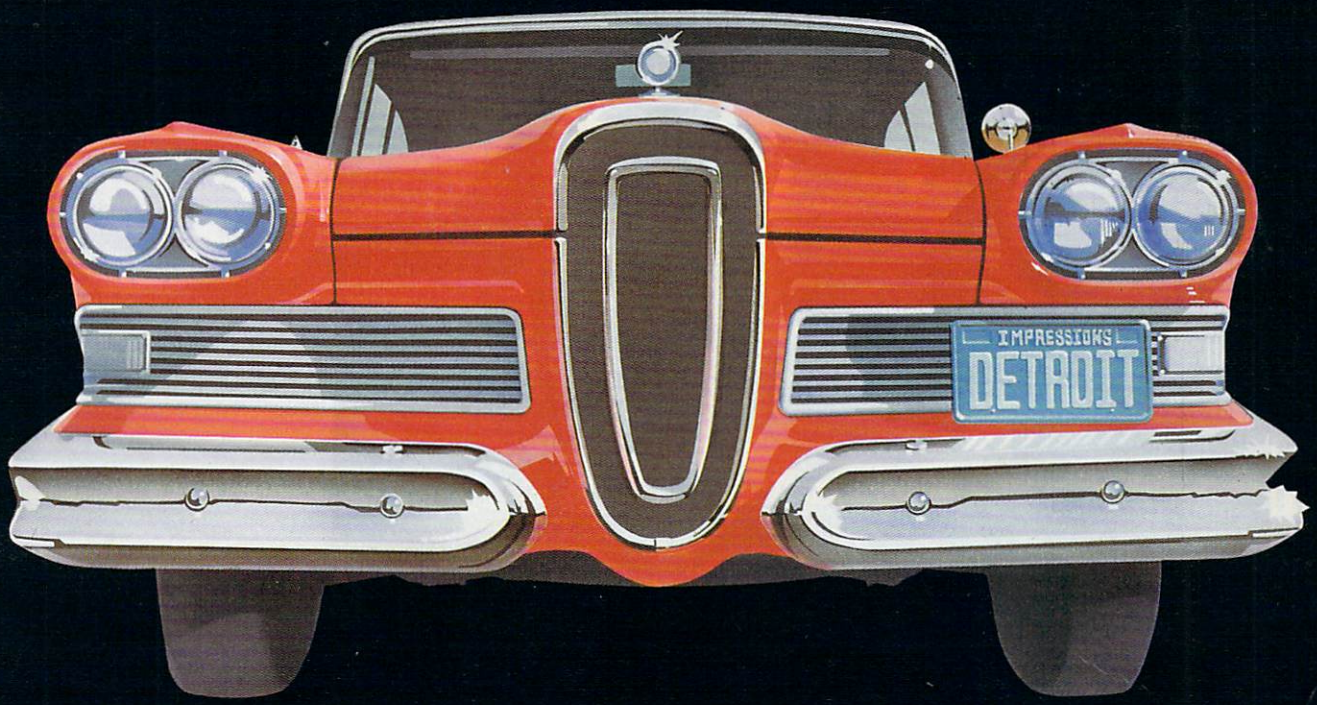
Where did you get this copy of COMPUTE?
- ❑ Subscription
- ❑ Newsstand
- ❑ Other _____

How long have you been reading COMPUTE?
- ❑ Less than two years
- ❑ Two years or more

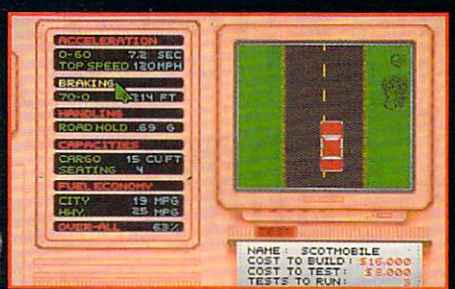
If you have a modem, which online service(s) do you use?
- ❑ America Online
- ❑ BIX
- ❑ CompuServe
- ❑ DELPHI
- ❑ GEnie
- ❑ Internet
- ❑ Prodigy
- ❑ Other _____

Comments _____

DETROIT



Can You Change Automotive History?



Design cars and put them through their paces with a variety of performance tests!

Create unique marketing campaigns to blow away the competition!

As your auto empire grows, open up new factories and sales offices around the world!

Impressions™

Committed to Excellence in Strategy Entertainment

Impressions Software, Inc. 222 Third Street, Suite 234, Cambridge MA 02142

©1993 Impressions Software Inc

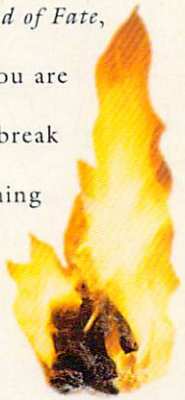
Circle Reader Service Number 183

IBM PC VGA Screenshots

FABLES & FIENDS: THE HAND OF FATE IS A TRADEMARK OF WESTWOOD STUDIOS, INC. © 1993 WESTWOOD STUDIOS, INC. VIRGIN IS A REGISTERED TRADEMARK OF VIRGIN ENTERPRISES, LTD. ALL RIGHTS RESERVED.

KISS CONVENTIONAL LOGIC GOODBYE

Now you see it. Now you don't. The land of Kyrandia is disappearing piece by piece and all the evidence points toward one perilous conclusion: a curse. Thus begins *The Hand of Fate*, second in the *Fables & Fiends*™ series, where you are the offbeat, young mystic who must voyage to the center of the world to break the spell. Out of sync and out on foot, your aberrant journey reveals nothing is what it seems. Everything is what it isn't. And you can count your friends on one hand. Literally. Conspiring to push the twisted edge of cinemagraphic entertainment, Westwood Studios has designed more puzzles and gameplay in the first few chapters of *The Hand of Fate* than in all of *The Legend of Kyrandia*™. The most advanced graphics on the market are first pencil tested, then painted on-screen to surrealistic perfection. Breakthrough *Trulight* technology illuminates each scene more cinematically for a fuller, fourth dimensional picture. The new *State of Mind System*, along with superior intuitive interfacing, enables you and over 50 characters to change your mind, mood and mayhem based on preceding events. Don't just play with your mind. Change the way your mind plays. Grasp *The Hand of Fate* and kiss conventional logic goodbye.



Shadow

Sunlight

THE HAND OF FATE

Westwood STUDIOS

DISTRIBUTED EXCLUSIVELY BY Virgin

Circle Reader Service Number 195

HARDWARE CLINIC

Mark Minasi

THE TWILIGHT OF THE PC

As the PC reaches the end of the trail, what alternatives await us just over the horizon?

If you've been following the industry recently with an eye to buying a new computer, you've probably noticed an important trend. PCs are less expensive than they've ever been.

There's nothing new in that. PC prices have been on a constant downward spiral. But, if you've been in the market for very long, you've probably noticed another important trend: The computer you want to buy—the one with the latest technology, the most RAM, and the biggest mass storage capacity—has always been just out of reach. Until lately.

The low prices for the best of the best should make PC lovers jump for joy, but there is a dark side to this phenomenon because just as the rapid drop in prices has spurred sales, it may also signal the end of the line for PCs.

Since shortly after the arrival of the PC in 1981, the market could be separated into three distinct levels. A basic computer system that could run the low- to midrange programs of the day cost around $1,000.

Even five years ago, $1,000 would buy you enough XT power to run WordPerfect 5.0 and Lotus 1-2-3 2.0.

If you had a little more cash, or higher expectations for your machine in terms of speed and processing power, the next price point, around $3,000, got you either a power user's clone or a low-end machine from a major computer company.

If you had a lot of cash and were running major applications that required lots of horsepower like a huge database or CAD software, you could get a top-of-the-line machine with the best display, largest and fastest hard drive, and so on, for $6,000–$11,000.

PC prices have always dropped at a steady rate; in general, today's $3,000 power workstation is tomorrow's basic PC. It goes through this metamorphosis to a basic PC because the basic requirements of software grow over time. For example, an 8088-based XT will run WordPerfect 5.1 with no problems, but 6.0 doesn't run very well on an XT. Even on a 16-MHz 286 AT clone it seems slow.

While these price points have remained steady for close to a decade, the drop in PC prices in the past two years is unprecedented. The reason for the price drop is that the PC world is different today. The difference can be seen on the high end.

Since today's high-end machine is tomorrow's midlevel machine, we should be able to predict what tomorrow's midrange machine will be. We look up from our fire-breathing desktops to see what's on the horizon. And we see nothing.

What did a top-of-the-line computer look like two years ago? A 486DX2/66 with 16MB, SCSI controller, 380MB hard disk, CD-ROM drive, local-bus video, and 17-inch monitor would have been a high-end computer. That would have cost about $7,000–$9,000.

How about a top-of-the-line computer today? It looks pretty much the same, except that it would probably have a 520MB hard disk and would cost around $4,500.

The high-end machine is rapidly becoming the midrange machine, and there is nothing taking its place. As I see it, the big issues are the following:

- Processors are maxing out.
- PC buses have unacceptable speed limitations.
- PC BIOS cannot exceed 1GB hard disk size.
- Networking isn't built into DOS or Windows.
- PC operating systems lack good memory management, multitasking, and security.

We haven't seen a new PC processor in two years—not even a faster version of an existing chip.

You may be thinking, What about the Pentium? Well, what about it? The Pentium may turn out to be a practical chip one day, but that won't be today, or even by the time you read this.

The Pentium is plagued by heat problems and production difficulties. Intel designed the Pentium with a 0.8-micron resolution on the chip mask, requiring the Pentium chip to be quite large as chips go and making it harder to build in quantity.

And at 66 MHz, the Pentium doesn't really produce real-world speed that's much in excess of that of a 486DX2/66; the real improvement will be seen if a 100-MHz version ever appears. As you may have read a few months ago in "Hardware Clinic," Intel won't be ramped up to produce Pentiums in any quantity until late in 1994.

So the basic CPU has been in a developmental stall for a couple of years. Maybe we've gone as far as we can without a major CPU change. It happened to the 6502 series that powered the first generation of 8-bit computers like the Apple II and the Commodore 64 and the Z80 that powered the CP/M machines that paved the way for the PC. We have to learn to accept the fact that you can only improve an existing technology a certain amount before you need to scrap it and start from scratch.

The notion that PC-compatible processors are maxing

PILOT THE NAVY'S FIRST LINE OF DEFENSE.

Actual screens may vary.

FLEET DEFENDER™

The F-14 Tomcat Simulation!

It's all up to you! The skies are swarming with bandits. Only you stand between the threat and your carrier battle group.

Lock on your radar and launch the Navy's advanced weapons to destroy the most sophisticated enemy targets ever developed for a MicroProse simulation. Roll, turn, climb, and dive to out-maneuver enemy aircraft using an artificial intelligence developed right out of Soviet and Third World military doctrine.

A computer-controlled wingman responds to your every command. And, you'll interact with strike packages that include F/A-18 Hornets, A-6 Intruders, A-7 Corsairs and E-2C Hawkeye AWACS.

Featuring the latest in 3-D terrain technology derived from digitized information taken from LANDSAT geological surveys, you'll pilot your F-14 through actual locations.

Fleet Defender from MicroProse. We brought you the F-15 Strike Eagle, now try the F-14 Tomcat featuring the most authentically modeled F-14 systems available anywhere outside of the Navy.

MICROPROSE®
ENTERTAINMENT • SOFTWARE

© 1993 MicroProse Software, Inc. ALL RIGHTS RESERVED.
For IBM-PC/Compatibles.

To get our free catalog, call 1-800-879-PLAY Mon.-Fri., 8:30 am - 5:00 pm EST or fill out the coupon and mail it to: MicroProse Software, Inc., 180 Lakefront Drive • Dept. D10 • Hunt Valley, MD 21030-2245

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

GAQ

Circle Reader Service Number 119

out in power is more serious than it appears on first glance.

Microcomputers got their start in the mid 1970s as hobbyist machines and as machines that a computer junkie could control completely. But one of the things that made the PC popular was the relatively high amount of computing power that you could buy for a relatively small amount of money. The idea that Intel-compatible microprocessors have increased in power by a factor of about 100 in ten years while mainframe processors have only jumped by single-digit factors in that time is one of the things that has fueled the move to client/server architecture.

But would corporate America invest all that time and money if it knew it was moving from one dead-end architecture to another?

What's faster than the Pentium? These days, lots of things are. But first and foremost is the DEC Alpha chip. Not only will it run NT programs very quickly, but it can also run regular old DOS and Windows programs (under NT, of course).

But a chip maker recently told me, "The Alpha's obsolete already. A whole bunch of new 128-bit superscalar chips will be out before you know it, and they'll cost about what the Alpha does . . . or they may be cheaper."

IBM's Power PC chip is a real alternative. It will offer desktop systems in the $10,000 range that will outpace a 486 by a factor of about 4. Count on the $10,000 price to come down quickly.

Originally, IBM and Apple were set to work with each other on the Power PC and its accompanying operating system, Taligent. Taligent was supposed to be essentially Macintosh System 8 and to run on Macs, PCs, and Power PCs. But now IBM has backed out of the Mac-compatibility promise, giving Apple good reason to want to sell Power PCs for less money than IBM. And if neither IBM nor Apple sells cheap Power PCs, any company can buy the Power PC chip set from Motorola and undersell IBM and Apple.

The next problem in the PC architecture is the speed of buses. The ISA and EISA buses operate at only 8 MHz, and the MCA bus operates at 10 MHz—and this in an age of 66-MHz computers.

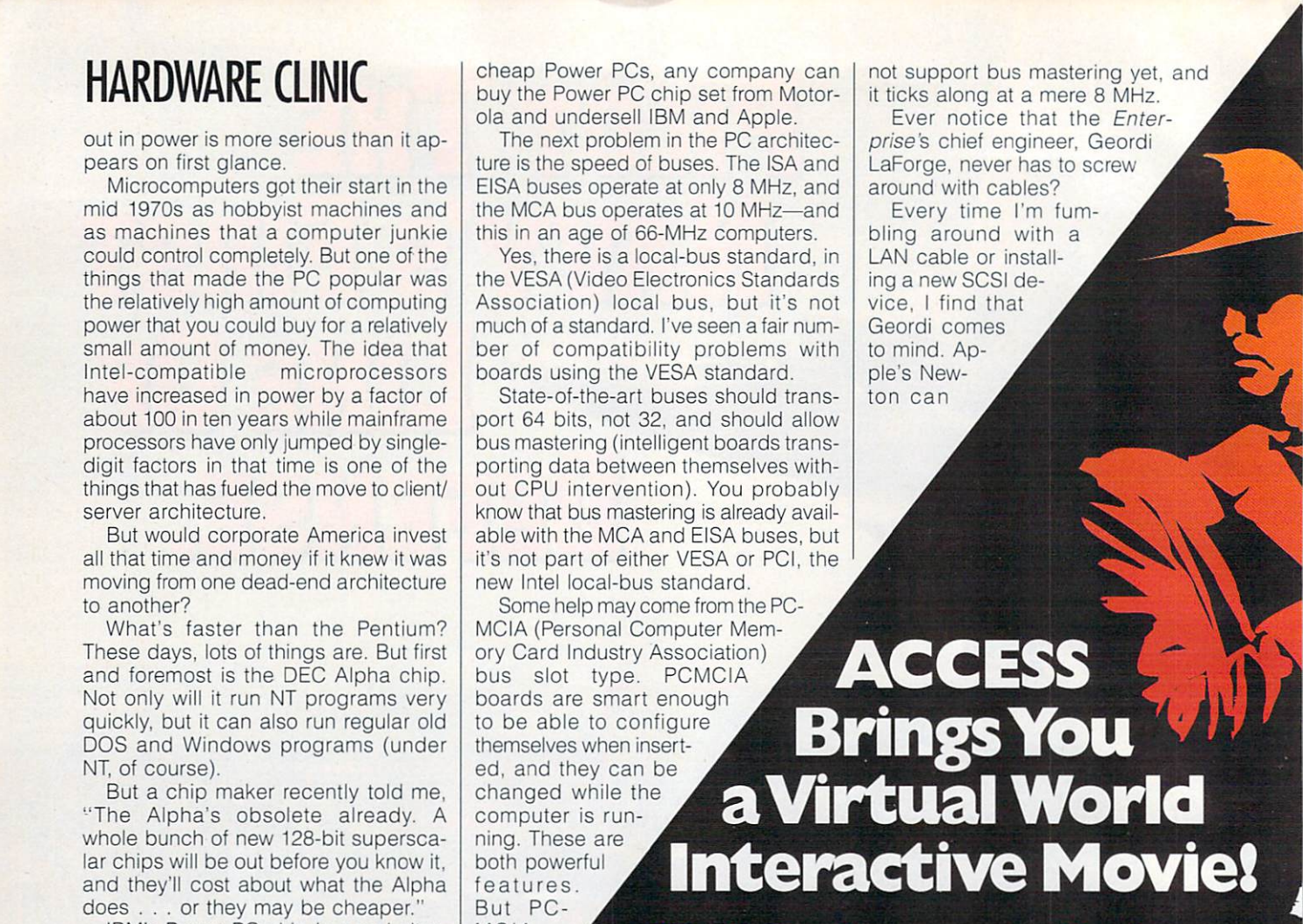
Yes, there is a local-bus standard, in the VESA (Video Electronics Standards Association) local bus, but it's not much of a standard. I've seen a fair number of compatibility problems with boards using the VESA standard.

State-of-the-art buses should transport 64 bits, not 32, and should allow bus mastering (intelligent boards transporting data between themselves without CPU intervention). You probably know that bus mastering is already available with the MCA and EISA buses, but it's not part of either VESA or PCI, the new Intel local-bus standard.

Some help may come from the PCMCIA (Personal Computer Memory Card Industry Association) bus slot type. PCMCIA boards are smart enough to be able to configure themselves when inserted, and they can be changed while the computer is running. These are both powerful features. But PCMCIA does not support bus mastering yet, and it ticks along at a mere 8 MHz.

Ever notice that the *Enterprise*'s chief engineer, Geordi LaForge, never has to screw around with cables?

Every time I'm fumbling around with a LAN cable or installing a new SCSI device, I find that Geordi comes to mind. Apple's Newton can



ACCESS Brings You a Virtual World Interactive Movie!

What Reviewers are Saying:

"Lots of games claim to be pushing the envelope—*Under a Killing Moon* blows it to smithereens!"
—William Trotter, *PC Entertainment*

***"Under a Killing Moon*...the most elaborate graphic adventure to date. A ground breaking CD adventure!"**
—Joyce Worley, *Electronic Games*

***"Under a Killing Moon* combines the best elements of movies and computer games and creates an amazing interactive experience that's better than either of them. It literally pulls you into the screen."**
—Denny Atkin, Entertainment Editor, *Compute Magazine*

This category-creating Interactive Movie from ACCESS Software goes light years beyond any other product labeled "interactive." *Under a Killing Moon* takes you to the streets of post World War III San Francisco and casts you into the role of Tex Murphy, Private Investigator, who first appeared in *Mean Streets*, then *Martian Memorandum*. *Under a Killing Moon* is a Virtual World full of people and places so richly detailed, you'll feel like you're actually there.

beam its information from one Newton to another. Why can't my laptop beam data to and from my main desktop PC?

Another communications problem that plagues PC users is setting up and maintaining a network. LANs are a major pain for several reasons.

Some of the most important reasons stem from the general problem of keeping wires in the walls attached to PCs without any breaks, cracks, nicks, cuts, or bruises. That problem applies to all computer communications. But the PC adds an extra element of trouble with its antediluvian operating system, DOS and Windows. DOS was not designed with networks in mind. File sharing was a notion tacked onto the side of DOS, and networks become part of DOS workstations with the inclusion of temperamental device drivers.

By contrast, the Mac's operating system was built with networking in mind from the very beginning. It was fairly lame networking—a serial port connection no faster than 0.24MB per second—but the underlying architecture makes adding a high-speed network like Ethernet a simple matter.

NT and UNIX are examples of microcomputer operating systems that are designed to network, but DOS will never be NT.

Which brings me to PC operating systems. DOS was an obsolete piece of garbage back in 1987, but we still use it. We use it for varied reasons, but the main one is inertia.

What we have in the DOS and Windows environment is adequate. But our use of the PC is limited terribly by DOS and Windows. There's the annoying 640K limitation. Getting around it with DPMI (DOS Protected Mode Interface) or XMS (eXtended Memory Specification) code is cumbersome and apparently poorly understood by programmers. It can be quite a trick to get a number of DOS and Windows programs to work together.

DOS is inflexible. It's necessary to reboot your system every time you make any change to CONFIG.SYS or AUTOEXEC.BAT. We take it as a given, but why must it be that way? Other operating systems don't require this of you. The product manager of Windows NT told me, "If you ever have to reboot your computer after you've got NT up and running, then we've failed in our job."

DOS doesn't support true multitasking; it's still quite possible (in fact it's simple) to crash a Windows communication program by accessing some large file in one program while Windows communication goes on in another program.

In every computer generation, progress and innovation go on for years. It seems for a while that the sky's the limit. But the constant need to support the old while inventing the new eventually dictates that nearly all of the industry's time is taken up with the old, leaving nothing for the new. That generation of hardware and software eventually becomes entrapped by the fact that it's good enough.

Soon, we PC users may have to make a choice. We can either join the vanguard or be left behind. And just when I thought I was done buying hardware for a while.

Speak Up!

Do you have a hardware problem you'd like Mark to tackle in this column? Let him know about it by calling (900) 285-5239 (sponsored by Pure Entertainment, P.O. Box 186, Hollywood, California 90078). The call will cost 95 cents per minute, you must be 18 years of age or older, and you must use a touch-tone phone. ❐

TIPS & TOOLS

Edited by Richard C. Leinecker

Creating a tip for COMPUTE, saving your setup, and zeroing out deleted files

Tips Ahoy

This column is dedicated to making your life easier. These tips represent the best of our readers' sage advice on subjects ranging from DOS prompt hints to application shortcuts to Windows tips. And the tips I receive are getting better. This morning I decided to use the first four tips I opened and after that rejected less than 50 percent.

But that's not the end of it. If for one single month I didn't get submissions, you'd read a column entirely written by yours truly. I'd also like to see some areas given more attention. That way, "Tips & Tools" would be even more useful for more people. Lastly, I'd like you to have the experience of seeing your byline in this magazine. Here are some tips for sending in tips.

The most important rule: Don't submit a tip similar or identical to one that's been recently published.

The second rule: Neatness counts. I read hundreds of tips each month, and the ones that are hard to read are also hard to accept. Handwritten tips are OK; just make sure they're legible.

Try to think of tips that'll appeal to a wide audience. We like to please as many folks as possible with each tip. Some excellent tips don't make it because they're too specialized.

Short tips are fine (and sometimes they're priceless). For debug scripts you need to include source code.

I'd like to add more application tips. Stick to the major applications, though. Access, dBASE, Excel, Lotus, Paradox, Word, WordPerfect, WordStar, and Works are all good examples of applications that are widely used. Batch file, QBASIC, and debug tips that perform useful functions are welcome. Several specific things I'd like to see are using PKZIP to compress a large directory to multiple disks, doing high-density disk copies with a single pass, and playing notes through sound cards. Windows tips are especially welcome.

RICHARD C. LEINECKER
REIDSVILLE, NC

What's Your Type?

Here's one I learned the hard way. Always have your hard drive type written down in a safe place. That way, if your CMOS loses its information or the battery runs down, you can restore the hard drive settings with no difficulty. All of the other CMOS settings are easy enough to get right, but your hard drive probably has several cryptic setup numbers that are essential.

When your system boots, press the key that brings up the CMOS setup screen (it's usually the Delete key). Then write down all of the hard drive descriptor numbers. You may be able to send your CMOS setup screen directly to your printer by pressing the Print Screen key.

KELLEY MARTIN
ABINGDON, MD

Multiple Cleans

In your September 1992 issue, you published a debug script that creates a file called CLEANDEL.COM. It deletes a file and, for security, zeroes all of the information that was in the file. I found this very useful, but it's limited because it only accepts one filename. I wrote a batch file which calls Cleandel from a DO loop, thus allowing wildcards and up to three possible file specifications.

As a safeguard, I also test for *.* and display a warning message with an opportunity to abort. Here is the program listing for ZERODEL.BAT.

```
@ECHO OFF
CLS
IF "%1"=="" GOTO USAGE
IF "%1"=="*.*" GOTO WARNING
IF "%2"=="*.*" GOTO WARNING
IF "%3"=="*.*" GOTO WARNING
:DOIT
FOR %%r IN (%1 %2 %3) DO
  CLEANDEL %%r
GOTO END
:WARNING
ECHO.
ECHO ALL files will be
  permanently deleted.
ECHO Is this what you want to do?
ECHO LAST CHANCE
ECHO.
ECHO Press Ctrl-C to abort.
PAUSE
GOTO DOIT
:USAGE
ECHO.
ECHO USAGE ZERODEL %%1
  %%2 %%3
ECHO.
ECHO Example: ZERODEL *.BAK
  *.OLD *.TXT
ECHO will delete all BAK, OLD,
  and TXT files.
ECHO.
:END
```

BOB INDOVINA
PITTSFORD, NY

Summary to the Rescue

In my office we use WordPerfect and frequently have more than one person working on a document. It can be terribly frustrating trying to find a piece of correspondence someone else created.

I found the document summary function to be an invaluable tool in solving this dilemma. The document summary shows when the file was created, the last revision date, the name and type, the author, the typist, the keywords, the subject, the account, and an abstract of the first 400 characters of the document. The dates are automatically generated, but the other entries must be filled in by the user. If you don't need a summa-

ry, press F7 when the screen appears.

To set up the document summary function for all files, follow these steps.

1. Press Shift-F1 (Setup).
2. Press 3 or E to select Environment.
3. Press 4 or D to select Document Management/Summary.
4. Press 1 or C to select Create Summary or Save/Exit and select (Y)es.
5. Press F7 (Exit) to return to the editing screen.

NANCY L. NEWTON
DAVENPORT, IA

No-Skid Keyboards

I love to get ahead of the computer by typing in the next file to run along with its command line arguments. It makes me feel like I'm not wasting my time while I wait for the system to complete an operation. There's only one problem: What if I change my mind? How do I cancel a series of commands already entered? The answer is, I can't.

It happens to me mostly when I'm compiling a program and in a rush. I'm just about done with the task at hand, and someone's anxiously awaiting a call from my modem to get the revised version. Just as the compiling is about to finish, a zillion errors appear, and the program goes on to link nonexistent files.

Of course, compilers aren't the only things prone to this sort of problem. I'm sure in your computing career there have been many times you've wished you could put on the brakes and cancel what you'd typed. Well, relax; I have a solution—it's a program called CTRLC.COM.

To use it, just type *ctrlc* from the DOS prompt. The program is a TSR, so once it's loaded, it's there until you reboot. The program looks for a Ctrl-C key, and anytime it gets one, it clears the keyboard buffer. Now, when I've typed in the next set of commands and I get errors, I just press Ctrl-C, and the keyboard buffer is cleared. A word of warning is in order. This utility may not work if you have other TSRs that trap the keyboard. But as a DOS process under Windows, it's fine.

You can type in Ctrlc using the DOS Debug command or Tip_tool, which can be downloaded from the COMPUTE area on America Online or from CompuServe or GEnie. If you are using Debug, make sure the DOS program called Debug is in your path or the current directory. In these examples, the italic text is what the computer prints; the roman text is what you should type. One way to be sure you get these programs exactly right is to have someone read the numbers to you as you type them in. Another way suggested by one of our readers is to read the numbers into a tape recorder and then play them back as you enter the program code.

```
debug ctrlc.com
File not found
-e B8  09 35 CD 21 89 1E 3F
-e 01  8C 06 41 01 B8 09 25
-e BA  1C 01 CD 21 B4 31 BA
-e 20  00 CD 21 06 50 2B C0
-e 8E  C0 26 80 3E 17 04 04
-e 75  0E E4 60 3C 2E 75 08
-e 26  A1 1C 04 26 A3 1A 04
-e 58  07 2E FF 2E 3F 01 00
-e 00  00 00
-RCX
CX 0000
:0043
-W
Writing 0043 bytes
-Q
```

The checksum value (see the July 1993 "Tips & Tools" for the new Checksum program) is 04863.

RICHARD C. LEINECKER
REIDSVILLE, NC

Correction

TDOS.BAT and DDOS.BAT, published in the November "Tips & Tools" each have a minor error that prevents them from working. Here is the corrected listing for TDOS.BAT.

```
@SET OP=%PROMPT%
@SET PROMPT=$T$_

@SET PROMPT=%OP%
```

Here is DDOS.BAT.

```
@SET OP=%PROMPT%
@SET PROMPT=$D$_

@SET PROMPT=%OP%
```

The blank line between the second and third lines is necessary.

ROBERT BIXBY
GREENSBORO, NC

If you have an interesting tip that you think would help other PC users, send it along with your name, address, and Social Security number to COMPUTE's Tips & Tools, 324 West Wendover Avenue, Suite 200, Greensboro, North Carolina 27408. For each tip we publish, we'll pay you $25–$50. All tips submitted become the property of General Media International. ❐

Own A Modem?

Explore COMPUTE on America Online FREE for 10 Hours!

If you own a computer and a modem, you can get even more of the COMPUTE experience with COMPUTE Magazine on America Online. Talk to other COMPUTE readers on interactive message boards or send e-mail to the COMPUTE staff. Participate in live conferences and events, and download programs from the COMPUTE software libraries. Just use keyword COMPUTE to access the leading publication for the home computer user!

You'll also find COMPUTE's sibling publication, OMNI Magazine, on America Online. Or, sample hundreds of other informative and entertaining services, like computing support from leading hardware and software makers, more than 70,000 software programs you can download and keep, and an international e-mail gateway.

Order today to get America's most exciting online service and your free 10-hour trial membership.

1-800-827-6364
Ext. 7912

AMERICA Online

Use of America Online requires a major credit card or checking account.

LANDS OF LORE™

THE THRONE OF CHAOS

The Dark Army encroaches. King Richard falls. And Scotia beckons you, laughing...

In her mad quest for power, Scotia has ravaged the kingdom. She seeks the throne, yet it eludes her. She's getting desperate. She's getting mean.

CAN YOU STOP HER? DO YOU DARE?

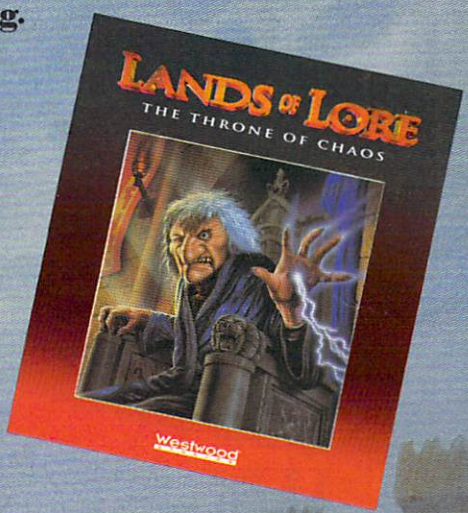
FEATURING

❧ **Compass and Automapper Included -** Adventure through ancient keeps and living forests. Unearth hidden ruins and haunted caves.

❧ **Make Friends and Influence People -** Cooperate with the helpful, sidestep the treacherous and destroy the dangerous.

❧ **Indulge in a Land of Sensory Delights -** Over 20 megabytes of compressed art and special effects. Actually hear the clash of steel! Feel the blows of terrors who slip beneath your guard!

❧ **Quick and Easy Combat and Spell Casting.**



AN INSPIRED FANTASY RPG EXPERIENCE FROM THE DEVELOPMENT TEAM THAT CREATED EYE OF THE BEHOLDER™ I AND II.

Westwood™ STUDIOS

Distributed Exclusively by

Virgin® GAMES

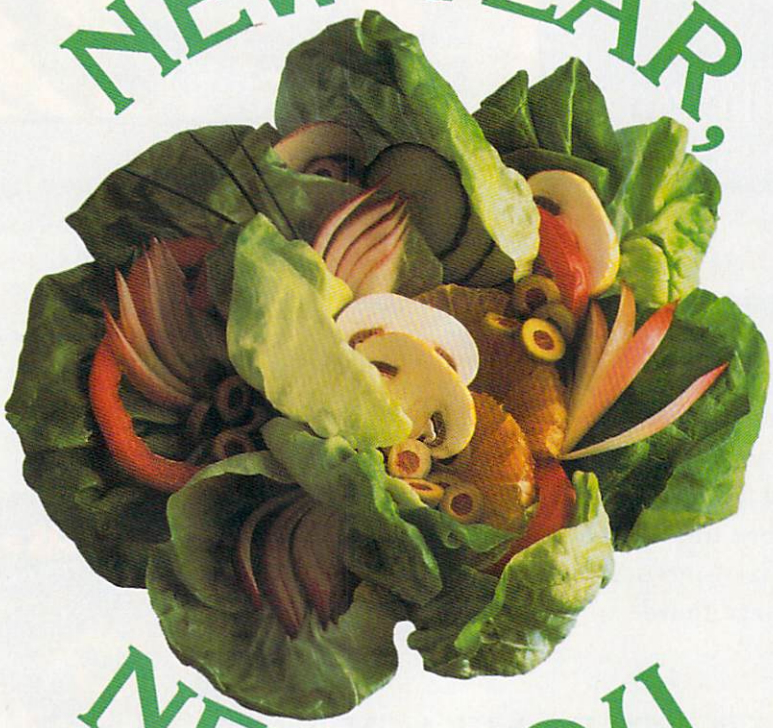
Available for your IBM PC.

Eye of the Beholder I and II are trademarks of TSR, Inc.
The Eye of the Beholder games, TSR, Inc. and SSI are not connected or related in any way to the Lands of Lore game, Virgin Games, Inc. or Westwood Studios, Inc.
Lands of Lore is a trademark of Westwood Studios, Inc. © 1993 Westwood Studios, Inc. All rights reserved. Virgin is a registered trademark of Virgin Enterprises, Ltd.

Circle Reader Service Number 132

This year, your computer can help you keep your resolution to lose weight, eat better, and exercise more regularly.

NEW YEAR, NEW YOU



Whether you're ready or not, the new year is upon us, bringing with it the timeworn tradition of New Year's resolutions, those promises that you make each year to live life to the fullest, to be a better person, and, most urgently, to improve your physical condition. Although these may seem like simple goals on January 1, at least one tends to fall by the wayside the next day when you walk into a kitchen full of leftover turkey and holiday candy.

But 1994 can be different. You can keep your resolution to shed those extra pounds and develop a sensible diet. Your computer can help with diet programs that make it easier to manage your diet and watch your weight loss. Many of them also help you design and monitor a fitness regimen.

The software you choose will ultimately depend on your lifestyle and goals, but there are certain features that you should look for in any program. The first is good nutrition, says Dr. William R. Fackler, a Richardson, Texas, pediatrician who has used Diet Analyst from Parsons Technology. A program should stress healthy eating habits and should contain reliable nutritional information. But

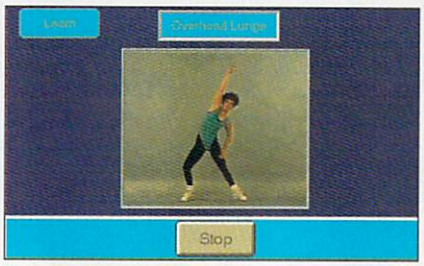
By Lisa Young

before you select any diet program, you should talk with your physician, says Dr. Fackler. It's important to take into account any medical problems that would require a special diet or any fitness limitations that would restrict activity.

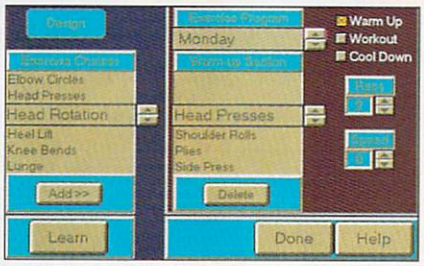
Harry Barney, associate professor in the School of Applied Health Professions at the University of Connecticut and a user of another program, Fitness Software Systems' Nutrition Expert, for nearly two years, recommends that you select a program that provides detailed feedback. It's essential that you understand why a particular food is good for you and why others are not. The educational value of a program is important in helping you maintain a healthy diet after you've lost weight. Barney also recommends that you choose a program that you can personalize. Because everyone has specific needs, it's important to find a program that will treat you as an individual.

Organize Your Appetite

One of the biggest challenges when you begin a diet program is knowing where to start and how to get organized. No diet program is going to be successful if you don't monitor your eating and fitness habits. Knowing the quantity and nutrient content of what you have eaten can be a determining factor in losing weight.



Fitness Partner can be your coach.



Design your own workout.

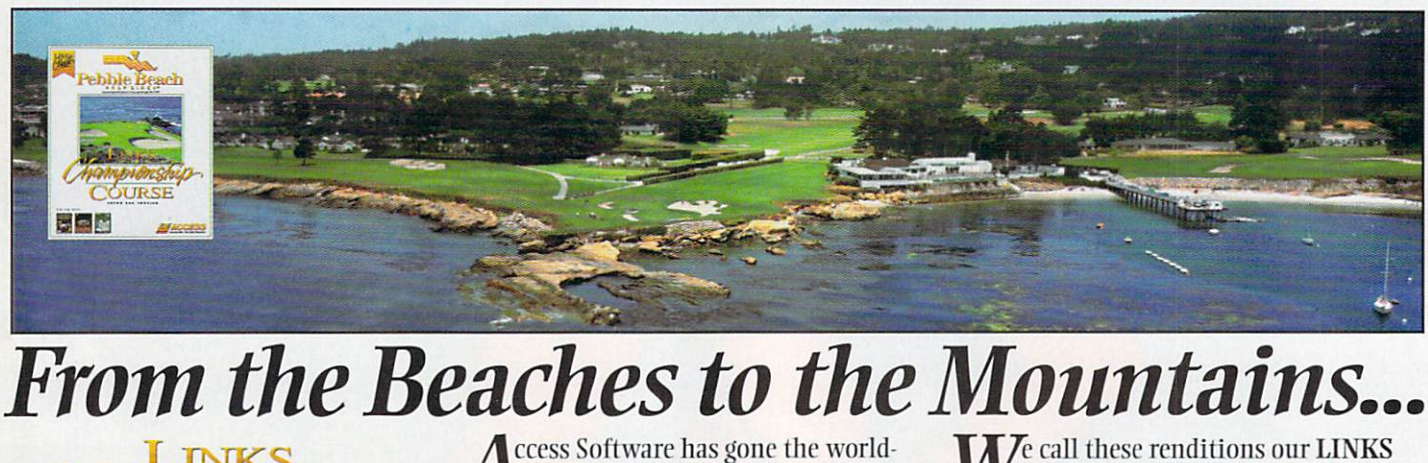
"Most times, poor nutrition can be directly attributed to a lack of understanding of how foods and their nutritional components affect our bodies," says Michael J. Harnad, president of Fitness Software Systems. "Knowing what your present requirements are allows you to make the dietary adjustments to lose or gain weight."

Harnad had been an amateur bodybuilder for nearly 13 years but felt that he was not competing at his full potential. The problem, he discovered, was a lack of organization. Without a detailed nutritional plan, it was easy for him to overeat slightly, producing a bit of flabbiness that cost him points during competitions. Using his master's degree in computer science, Harnad developed software programs to help regulate his nutritional and training regimens.

"It started as a personal project, and then I discovered that other people were interested in it, too," he says. "To achieve fitness, one must commit to a lifestyle that includes regular exercise and sound nutrition. This means knowing what exercises to perform and what foods to eat."

Nutrition Expert uses your age, sex, height, weight, and activity level to develop a personal profile. Then it uses that profile to help with meal planning and diet analysis.

This user-specific response is one of the program's most valuable features, according to Harry Barney.



Pebble Beach Golf Links® licensed by Pebble Beach through TGF SOFT. Photographs of Pebble Beach® used by permission of Pebble Beach Company.

From the Beaches to the Mountains...

LINKS Championship COURSE

Access Software has gone the world-over to convert some of the finest golf courses so that you can play them on your computer anytime of the day or night. Each is faithfully reproduced in exacting detail to make you feel like you're playing the actual course.

We call these renditions our **LINKS Championship Courses.** With Pebble Beach,® our newest release, we now feature a line of twelve world-famous courses besides Harbour Town, featured in LINKS 386 Pro™, and Torrey Pines, included with LINKS® and Microsoft Golf®.

"People are really hungry to understand what they should be doing on a personal level," he explains. "Diet is a very individualized thing."

Nutrition Expert analyzes your diet for carbohydrates, protein, fat, sodium, cholesterol, amino acids, and various vitamins and includes a 500-food database that you can personalize by adding your favorites.

Barney says the program is easy to use and adapts to your changing needs. Once you reach your weight loss goal, you can redesign your profile to develop a maintenance program.

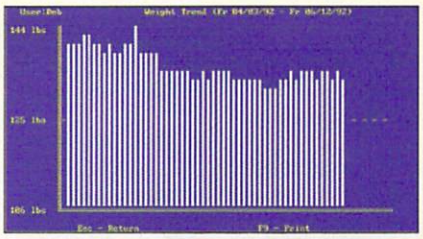
Only a combination of good nutrition and fitness habits will lead to better health, Harnad believes, so he developed another program, Training Expert, to help you plan a fitness routine.

Training Expert compiles a personal profile based on your height, weight, and training goals and prescribes a customized workout designed from 75 varied fitness routines.

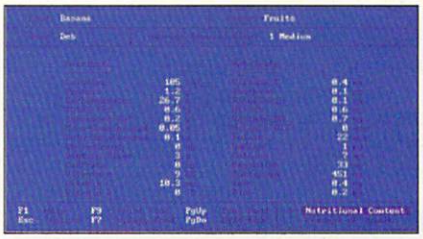
Both programs—designed to be used together—include graphic features to help track your progress.

Searching for Discipline

Craig Leonard, a technical sergeant with the 114th Fighter Squadron in the Oregon Air National Guard, had trouble finding the discipline to maintain his weight at military standards, so he turned to his computer and DietPro by Lifestyle Software Group. Leonard finds that it's hard to cheat when you have to account daily for every morsel of food you eat.



Diet Balancer charts your progress.



Diet Balancer tells what's good for you.

"I have problems maintaining my discipline, [but] I've found that this program really works," Leonard says. "I've made recommendations to the medical hospital at the base to include [DietPro] in its library for anyone who is having problems [with weight control]."

Every morning, Leonard uses the program to plan his day, and each evening, he makes sure that everything he ate is listed in the computer. At the end of each week, he prints a compilation of his exercise and eating habits for that week. He checks his progress and can tell what nutrients he lacks or where he has overindulged.

DietPro analyzes 36 nutrients in more than 5000 foods from the Department of Agriculture's food list and from fast-food chains. You can also enter your own foods and recipes, an option that Leonard enjoys.

"It's a pretty powerful option," he says. "Not everyone consumes everything, so to be able to [analyze] your own recipes is useful."

DietPro also offers an extensive list of activities and allows you to develop a fitness plan based on your own personal profile.

"You have to take the average ...profile with most programs," Leonard explains, "but with DietPro, if you have a low metabolism, you can adjust the program to account for that."

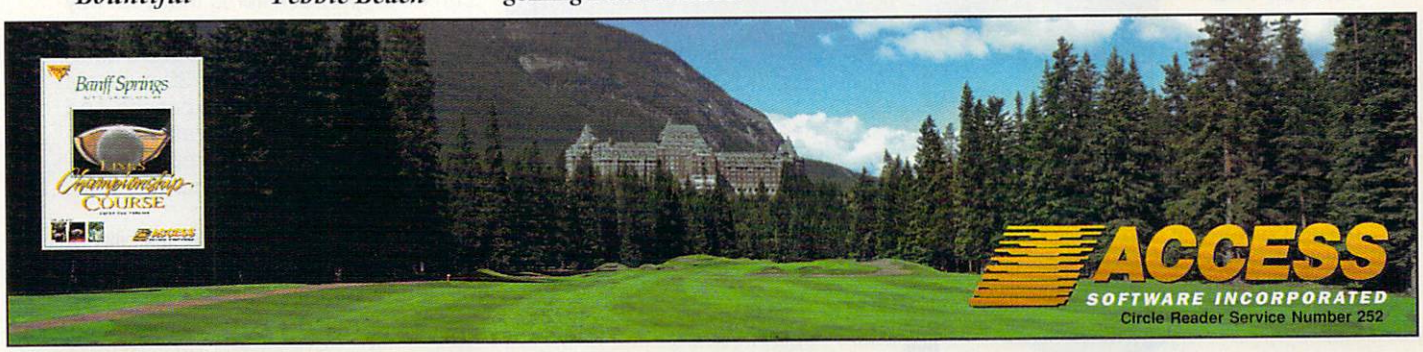
from Canada to England to Florida...

Our lineup currently includes:

- Troon North
- Firestone
- Dorado Beach
- Barton Creek
- Bayhill Club
- Bountiful
- Pinehurst
- Mauna Kea
- Banff Springs
- The Belfry
- Innisbrook
- Pebble Beach®

All LINKS Championship Courses are completely compatible with and require LINKS–the Challenge of Golf®, Microsoft Golf®, OR LINKS 386 Pro™ to operate. From mountains or beaches, from across the sea or on the islands—happy golfing from ACCESS!

ACCESS Software, Inc. 1-800-800-4880
4910 W. Amelia Earhart Dr., Salt Lake City, UT 84116



Scared Healthy

For some, weight loss goals may be dictated by health, not just a desire to look and feel better. That's how Dieter's Edge 2000 was born.

"Seven years ago, my doctor scared me into a diet, and I lost 60 pounds," says Fred Shadko, developer of this program. "I wrote a little program to help me with that. When I showed it to other people, they were also interested."

Distributed by LivingSoft, Dieter's Edge 2000 can help you balance your intake of protein, fats, and carbohydrates as well as achieve targeted minimums and maximums of cholesterol, sodium, fiber, vitamins, and other food components. The program has a database of more than 2000 items, including products from seven fast-food chains.

One unique capability of the program is that it can determine your personal break-even point based on how your body reacts to your diet and exercise in a 30-day period, Shadko says. Your break-even point is the number of calories that your body needs to maintain your current weight and activity level. Once you have determined this, you can adjust your calorie intake to safely lose weight.

Evelyn Richards, a retired Xerox salesperson, used Dieter's Edge 2000 for nearly five months and lost about 40 pounds. She found that entering her personal data was fun.

"It got to be kind of a game," Richards explains. "It was very motivational to see the numbers change and the graphs come up and to see how I was doing. I looked at the graphs daily because I set daily goals."

Entering this personal nutrition and fitness data was also a motivational factor for certified financial consultant Rusty Welch, who has written off nearly 30 pounds using Dieter's Edge 2000. Learning about the nutritional content of his favorite foods was also rewarding, he says.

"I had previously just counted calories, and this really opened my eyes to overall nutrition," Welch explains. "It was a real education."

To help you stay within the nutritional boundaries you've established, Dieter's Edge 2000 also includes a treat feature, which will calculate the allowable portion size of any food you want to eat. For example, if you crave a hot-fudge sundae, this program will tell you what size sundae you can eat without blowing your diet.

"The single biggest hazard is people getting discouraged," Shadko explains, "so we give them the ability to have a treat."

Reversal of Fortune

As a pediatrician, Dr. Fackler understands the importance of good health, but two years ago, his was questionable. Since then, Fackler has adjusted his lifestyle, using Parsons Technology's Diet Analyst . He has reached his personal weight goal, lowered his cholesterol from about 240 to 180, and reversed the clogging of one artery.

"It's not a diet program; it's a lifetime eating program," Fackler says. "It has taught me to select the healthy foods and ignore the others. This is the first program that I have been able to stick with."

Diet Analyst helps you manage your health program by tracking 26 nutrients from a database of 1700 foods, including brand-name products and menu items from 13 fast-food chains. You can also monitor your exercise regimen and generate a variety of reports, such as an exercise log, an account of your current nutritional status, and a compilation of the data for a single day or a number of days.

Fackler uses his Diet Analyst twice each day for about five minutes. He records everything he eats—even the binges and mistakes—so that he can accurately determine how he's doing. Fackler also recommends the program to his older patients and their parents.

ExerCitement from Computer Athlete turns exercise into an arcade game.

Nutrition Counts

As a personal trainer, Tona Hilwig recommends ways to help clients develop a personal weight loss program. Diet Balancer by Nutridata Software helps her clients understand the nutritional content of foods, she says. It teaches them to think about what they eat and how they can maintain a healthy diet.

Diet Balancer tracks 26 nutrients, including calories, fat, cholesterol, and fiber, and has a database of more than 1700 foods, including products from 13 fast-food chains. You can also add your favorite foods to the database. If you must minimize certain things in your diet, such as fat or sodium, Diet Balancer can help you plan meals. The program also includes a selection of prepared menus.

One feature that is important to Hilwig and her clients is the graphic section that can track your performance for up to 60 days.

"The charts show them what they should be doing and how they are progressing," she explains, speaking of her clients. "It helps them see how close they are to their goals."

Reach Your Goal

Once you've reached your weight loss goal, these software products can help you maintain a healthy lifestyle.

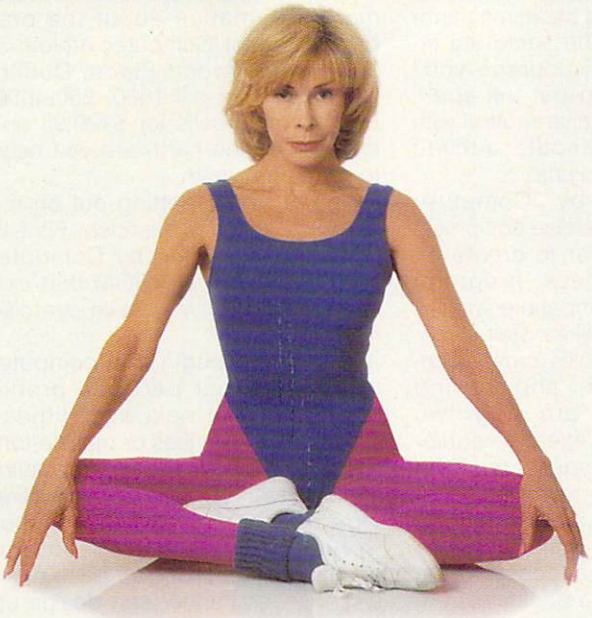
Sharon Brehm began using Diet Expert by Expert Software to help maintain her weight and plan a healthier diet. Through the program, she has learned the fat and nutrient content, as well as the caloric value, of different foods.

Diet Expert's database lists the nutritional content of 2300 foods and can help you track items that you may be trying to avoid, such as sugar, salt, and cholesterol. The program analyzes your current diet for 30 nutrients to help you overcome excesses and deficiencies, and it analyzes your current fitness plan to develop an exercise regimen based on your age, sex, weight, and frame.

"I liked the low price and flexibility of the program," Brehm says. "If you just wanted to plan a few meals, you could

Longevity Magazine's Workout Videos For An Ageless Body

REJUVENETICS.



SHE'S 55! Kathy Keeton, the publisher and president of *Longevity* magazine, stars in **REJUVENETICS** and **MORE REJUVENETICS.** These two new video workouts are specifically designed to slow down the effects of aging on the body and actually turn back the biological clock for a stronger, more youthful body. **REJUVENETICS** features non-aerobic ballet, t'ai chi, and yoga movements.

MORE REJUVENETICS concentrates on body sculpting specific muscle groups to build lean body mass while speeding up the metabolism.

Follow either 30-minute program just three times a week for satisfying results without the stress and strain of aerobics. Only **$14.99** each.

Call **800-527-2189** and ask for Department R, or send $14.99 plus $3.50 ($8.00 outside U.S.) shipping and handling for each video to: Best Film & Video Corp., Dept. R, 108 New South Road, Hicksville, N.Y. 11801.

Sim City 2000 Design Contest

Maxis and COMPUTE Publications are looking for the very best, original cities designed with the new Sim City 2000 from Maxis. All winning cities will be included on one of COMPUTE's Winning Cities Disks. Each winner will receive $50 plus a software package from Maxis and a game hint book from COMPUTE. So put on your city manager's hat and design your best cities.

Interested? If so, read on:

Official Rules
NO PURCHASE NECESSARY

1. Entries must be your original work and never have been distributed by electronic means. All winners will be required to affirm this in writing.

2. Submit as many entries as you want, but we cannot consider cities which have been distributed on disk or are available on any BBS or commercial telecommunications service such as CompuServe or America On-line.

3. All entries must be received no later than April 1, 1994. Print your name, address, daytime phone, and social security number along with your disk to Sim City 2000 Contest, COMPUTE, 324 West Wendover Avenue, Greensboro, NC 27408.

4. Entries must be created with either the MS-DOS or Macintosh versions of Sim City 2000. Cities created with the original Sim City will not be accepted. Entries may be submitted on either a Macintosh 3-1/2 inch floppy disk or a MS-DOS 3-1/2 inch or 5-1/4 inch floppy disk. A separate copy of this entry form must be submitted for each city submitted. Readable photocopies of this entry form are acceptable.

5. The staff of COMPUTE magazine will handle the judging. The decisions of the judges is final as to all aspects of any entry, including similarity to any entry. There will be at least five winners, but there can be as many as twenty winners depending on the quality of the entries. Winners will be selected on the basis of their originality, uniqueness, complexity, balance, general appeal and use of the new features in Sim City 2000.

6. Winners will be notified by mail by September 30, 1994.

7. The contest is opened to residents of the United States and Canada, except Quebec. Full-time, part-time & previous employees of COMPUTE Publications International Ltd., General Media International Ltd. and Maxis, their immediate families and their advertising agencies, are ineligible for the contest.

8. Contestants must assign the copyright in their entries to COMPUTE using the attached form. All winning entries become the property of COMPUTE Publications International Ltd. Sorry, we cannot return any entries.

9. The approximate value of each of the prizes awarded is as follows: software $50, hint book $15, and cash $50.

10. This contest is void where prohibited or restricted. All winners will be required to submit an affidavit of eligibility, including permission to use winners name and photo for promotional purposes without further compensation; failure to return this affidavit within ten days will forfeit prizes. Neither COMPUTE nor Maxis is responsible for delayed or misdelivered mail. Taxes are winners responsibility. No alternative prizes or cash equivalents of prizes will be awarded.

Every Contestant Must Fill in and Sign This Form:

Name of Your City_____
Your Name_____
Street_____
City, State, Zip_____

Macintosh or DOS (Circle one)

I hereby warrant and represent, knowing that COMPUTE will rely thereon, that: I have read, understand and agree to be bound by the Official Rules and each term and condition thereof; that the city presented on the enclosed disk is my own original work, has not been submitted elsewhere nor made available for distribution on any BBS, commercial telecommunication service, shareware disk or any other general distribution whatsoever, and that I have the sole right to assign the copyright and all other rights in it to you. I am 18 years old or older and of lawful age to sign this contract in my state or if I am a minor my parent or guardian's consent is attached below.

ASSIGNMENT OF COPYRIGHT
In consideration of the opportunity to enter this contest and win the prizes offered, I hereby sell, transfer, assign and convey to Compute Publications International, Ltd., all right, title and interest I possess in and to the above-titled work (the "city"), including, but not limited to, the copyright and all renewals and extensions thereof in the United States of America and all countries of the world and any and all claims or causes of action whether asserted or not relating thereto.
SIGNED:_____

Parental Consent
(complete this section if minor is named above)

I,_____, hereby certify that I am the parent or legal guardian of the above-named person who is a minor below the age of 18 and that I ratify and consent to the execution of this entry form by such minor and to the use of his/her name and likeness for promotional and commercial purposes should he/she be selected as a winner.

SIGNED BY PARENT OR
GUARDIAN:_____
ADDRESS IF DIFFERENT FROM ENTRANT:_____

Phone_____H_____W

SPEAK UP!

Is there a feature topic you'd like to see covered in COMPUTE? Let us know by calling **900-285-5239** (sponsored by Pure Entertainment, P.O. Box 186, Hollywood, California 90078). The call will cost 95 cents per minute, you must be 18 or older, and you must use a touch-tone phone.

use it for a few days, but if you wanted to drastically change your eating habits, you could plan meals for up to a year."

Monitor Your Progress

Other software programs that help monitor your progress toward better nutrition and fitness include NutritionPro by ESHA Research; Santé by Hopkins Technology; Nutri-Calc by CAMDE; NutriBase by CyberSoft; and Diet Simple, Diet Simple Plus, and Diet Easy by N-Squared Computing.

NutritionPro calculates the nutritional values of 2000 foods and can track excesses and deficiencies in your diet. You can also plan a fitness workout cycle from a database of 110 fitness activities. NutritionPro is also available in a scaled-down student version.

Santé monitors your progress by analyzing your food intake for 30 nutrients. It maintains a database of 3000 foods. The program also determines your daily calorie need based on a personal profile and can help you develop a weight loss plan. Colorful charts and graphs display suggested caloric and nutrient breakdowns based on the most recent government recommendations.

Nutri-Calc assesses foods and recipes for 30 components and compares the results to U.S. recommended daily allowances or your own dietary goals. The program comes with a database of 1600 foods, including fast foods and prepared foods, and you can add your favorite foods and recipes. You can also buy an additional food database that includes 1800 more listings. One of Nutri-Calc's advantages is that it will display ratios such as calcium to phosphorus or polyunsaturated fat to saturated fat.

NutriBase, an unusually comprehensive diet tracker, lists the nutritional content of more than 30,000 foods, including the offerings of 44 national chain restaurants.

N-Squared Computing usually develops programs for professional use but has also produced three scaled-down programs for use by individuals. Diet Simple, Diet Simple Plus, and Diet Easy each contain a database of 2025 foods (other versions of Diet Easy listing 5000 and 8500 foods are also available).

Diet Simple tracks 28 components in the foods you select and graphs the results by the percentage of the U.S. recommended daily allowance that is satified. Diet Simple Plus, an extension

Fitness I/O

Although you know that exercise is a necessary component of weight loss, does the thought of spending endless hours doing the same mindless routines with the same old fitness equipment discourage you? Your computer can put the spark back into your exercise routine with programs from Computer Athlete and Computer Directions.

ExerCitement by Computer Athlete links your exercise equipment and home computer to create an arcade-game fitness program. ExerCitement is compatible with all brands of exercise bikes, stair-climbing machines, treadmills, cross-country ski machines, and rowing machines. There are only two requirements: Your exercise equipment and your computer must be located in the same room, and your computer must have a game port.

You control the game with two directional buttons attached to the machine by Velcro; a photoelectronic eye and a reflector measure your speed. A 12-foot cable connects your computer's game port to the exercise equipment base and communicates your movements to the computer.

As you start exercising, you become a contestant in a race where your motions directly correspond to those of the computer athlete. The program has five different race sequences (one for each of the machines mentioned above). For example, you could cycle down a winding road, row through open waters, or bound across the craters of an alien planet—the race scenario used with the stair-climbing machine. However, you can choose any game, regardless of the equipment you own. Besides choosing the game you play, you can also designate the speed of the race; it can be set fast enough that even expert arcade players are challenged.

You score points in each race by dodging obstacles, avoiding menacing characters, and demolishing your opponents. For every 1000 points earned, you move to the next level and a new world.

ExerCitement runs off a floppy disk and requires 512K of RAM. For more information about the program, contact Computer Athlete at 5193 Betonywood Place, Dublin, Ohio 43017, or call (800) 860-4506. ExerCitement sells for $129.95 and includes all the hardware you need to run the program.

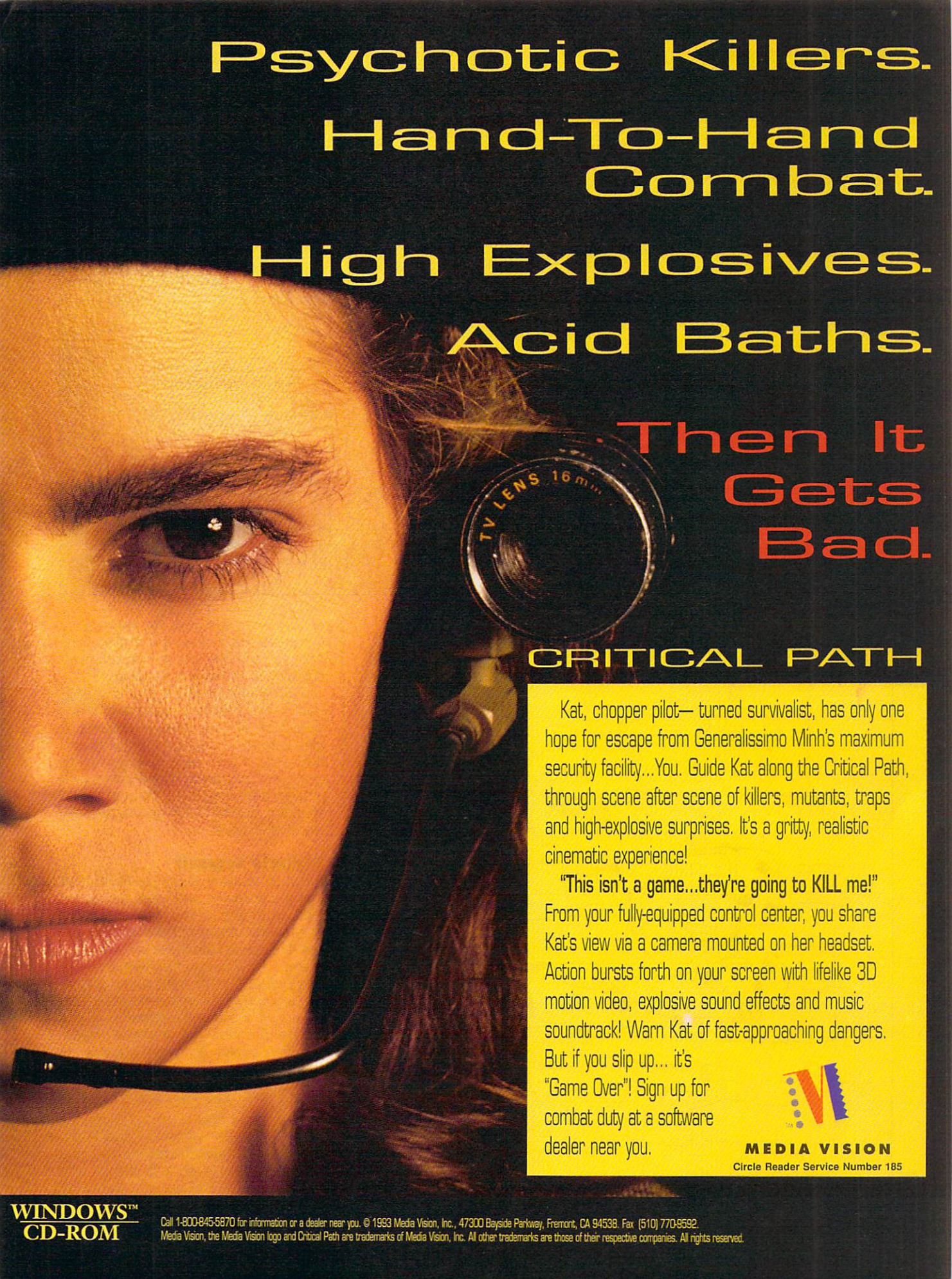
If you prefer getting out on the aerobics floor for exercise, Fitness Partner, developed by Computer Directions, is a CD-ROM that can help you design your own exercise routines.

When you begin, the computer will create your personal profile based on your sex, age, fitness level, and weight loss or muscle-toning goals. Then the computer automatically selects from 75 full-motion video exercises to design your workout, setting the speed and number of repetitions for each exercise. Fitness Partner can design up to nine routines, one for each day of the week and two alternates, for up to ten users.

Fitness Partner also lets you custom-design your own workout. You can choose exercises for the warmup, workout, and cool-down sections; pick the style of background music; and set the speed and number of repetitions for each individual exercise.

Roni Smaldino, a certified aerobics instructor, leads you through each routine, providing audio coaching and words of encouragement. If you don't understand a particular exercise, you can stop the workout and go to the learning mode for a personal demonstration.

Fitness Partner requires a multimedia-compatible computer, including a CD-ROM drive, VGA-plus color capabilities, a digital sound card, and Windows 3.1 or higher. Fitness Partner lists for $69.95. For more information about this CD-ROM product, contact Computer Directions at 2712 West Shaw Avenue, Suite 234, Fresno, California 93711, or call (800) 600-2348.


Psychotic Killers.
Hand-To-Hand Combat.
High Explosives.
Acid Baths.
Then It Gets Bad.
TV LENS 16 mm
CRITICAL PATH
Kat, chopper pilot— turned survivalist, has only one hope for escape from Generalissimo Minh's maximum security facility...You. Guide Kat along the Critical Path, through scene after scene of killers, mutants, traps and high-explosive surprises. It's a gritty, realistic cinematic experience!
"This isn't a game...they're going to KILL me!"
From your fully-equipped control center, you share Kat's view via a camera mounted on her headset. Action bursts forth on your screen with lifelike 3D motion video, explosive sound effects and music soundtrack! Warn Kat of fast-approaching dangers. But if you slip up... it's "Game Over"! Sign up for combat duty at a software dealer near you.
MEDIA VISION
Circle Reader Service Number 185
WINDOWS™ CD-ROM
Call 1-800-845-5870 for information or a dealer near you. © 1993 Media Vision, Inc., 47300 Bayside Parkway, Fremont, CA 94538. Fax (510) 770-9592.
Media Vision, the Media Vision logo and Critical Path are trademarks of Media Vision, Inc. All other trademarks are those of their respective companies. All rights reserved.

Fit Products

Nutri-Calc—$39.95
Nutri-Calc Expanded Foods Database (additional 1800 foods)—$19.95
CAMDE
449 E. Saratoga St.
Gilbert, AZ 85296
(602) 926-2632

NutriBase—$69.95
CYBERSOFT
3851 E. Thunderhill Pl.
Phoenix, AZ 85044-6679
(602) 759-4849

NutritionPro—$79.00
NutritionPro (Student Version)—$29.95
ESHA RESEARCH
P.O. Box 13028
Salem, OR 97309
(503) 585-6242

Diet Expert—$14.95
EXPERT SOFTWARE
800 Douglas Rd., North Tower
Ste. 355
Coral Gables, FL 33134-3128
(800) 759-2562

Nutrition Expert 2.0—$79.99
Training Expert 2.0—$79.99
($139.98, if purchased together)
FITNESS SOFTWARE SYSTEMS
P.O. Box 160
Willington, CT 06279
(203) 429-2519

Santé—$59.95
HOPKINS TECHNOLOGY
421 Hazel Ln.
Hopkins, MN 55343-7116
(612) 931-9376

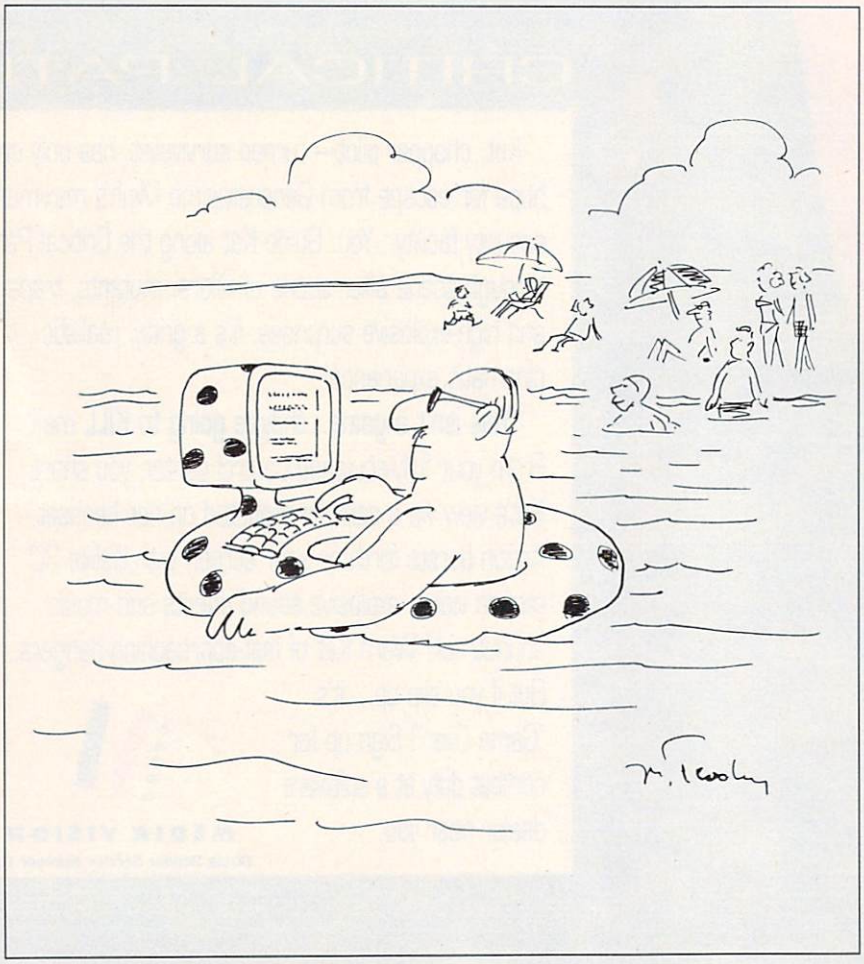
DietPro (for DOS)—$39.95
DietPro for Windows—$59.95
LIFESTYLE SOFTWARE GROUP
63 Orange St.
St. Augustine, FL 32084
(800) 289-1157
(904) 825-0220

Dieter's Edge 2000—$79.95
LIVINGSOFT
711-700 Pine Acre Rd.
Janesville, CA 96114
(800) 626-1262
(916) 253-2700

Diet Simple—$25.00
Diet Simple Plus—$49.00
Diet Easy 2000 (2025-food database)—$49.00
Diet Easy 5000 (5000-food database)—$249.00
Diet Easy 8500 (8500-food database)—$349.00
Nutritionist III—$495.00
Nutritionist IV—$495.00
N-SQUARED COMPUTING
3040 Commercial St. SE, Ste. 240
Salem, OR 97302
(503) 364-9118

Diet Balancer 3.0—$59.95
NUTRIDATA SOFTWARE
P.O. Box 769
Wappingers Falls, NY 12590
(800) 922-2988
(914) 298-1308

Diet Analyst 2.5—$59.00
PARSONS TECHNOLOGY
P.O. Box 100
Hiawatha, IA 52233-0100
(800) 223-6925
(319) 395-9626



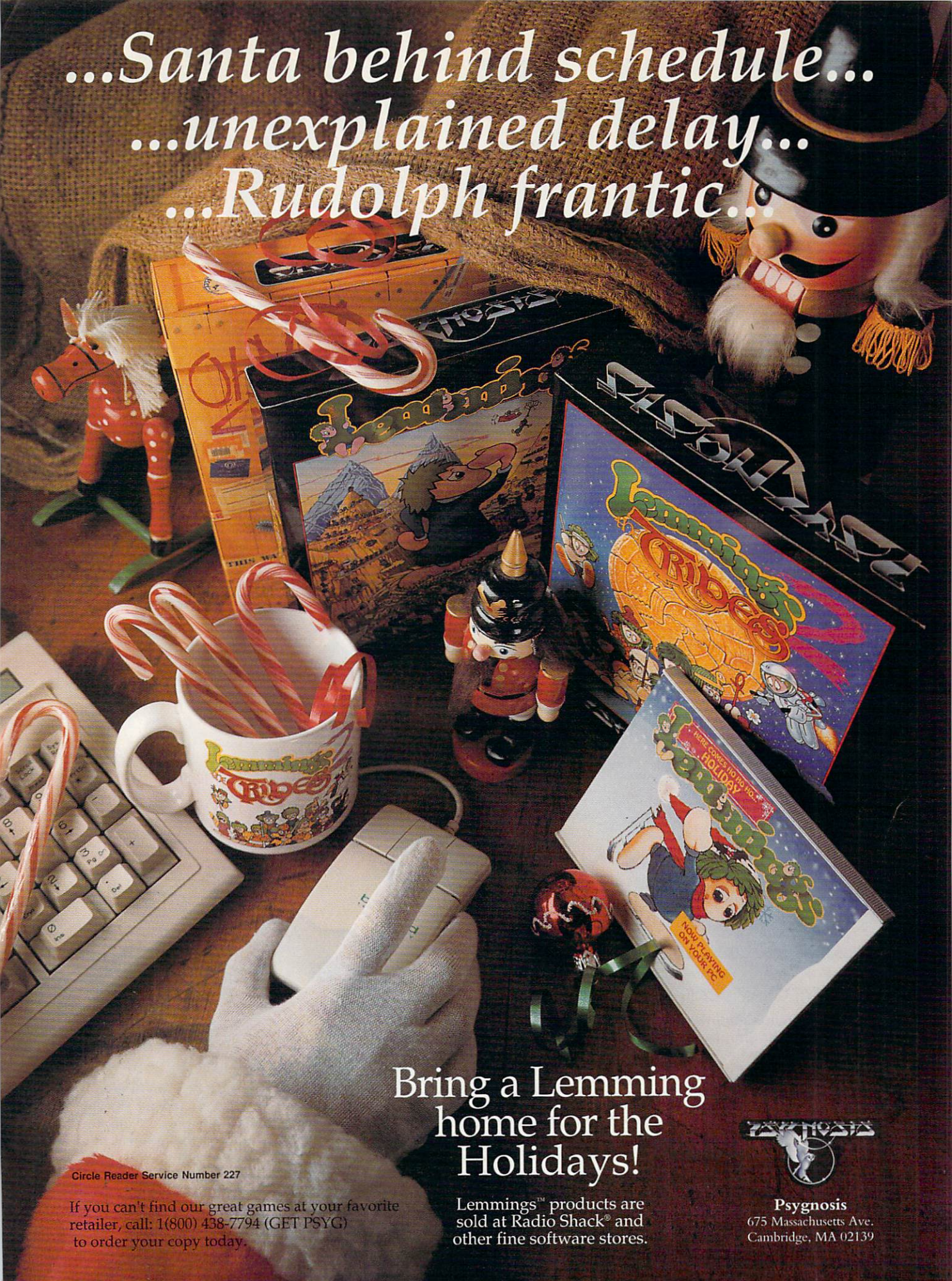
of Diet Simple, tracks 58 items. Both programs also include text explanations and recommendations to help you overcome deficiencies and excesses.

Diet Easy creates menu plans, tracks your progress, and maintains a database of your favorite recipes. It also helps you create weight loss and exercise plans and can generate graphical printouts. N-Squared also makes diet programs Nutritionist III and Nutritionist IV for use by professional dieticians.

Dedicate Yourself

Although tracking every crumb of food that you consume and every movement that you make in your fitness routine may seem tiresome, dedication is the key to success with these software programs. As with any traditional weight loss program, hard work is the primary requirement—but your computer can help make the struggle easier.

"I've probably got umpteen calorie-counting books, but when you can sit down at the computer and enter what you've eaten, it's much simpler," says Jennifer James Chadwick, who is halfway to her goal of losing 20 pounds with the help of Dieter's Edge 2000. "It's so painful with the calorie-counting books, but it's much less painful with the computer. The hardest part is to overcome human nature. You have to make yourself be consistent." ❑


...Santa behind schedule...
...unexplained delay...
...Rudolph frantic...
Lemmings Tribes
Lemmings Holiday
HERE COMES HO HO HO...
HOLIDAY
NOW PLAYING ON YOUR PC
Bring a Lemming home for the Holidays!
Circle Reader Service Number 227
If you can't find our great games at your favorite retailer, call: 1(800) 438-7794 (GET PSYG) to order your copy today.
Lemmings™ products are sold at Radio Shack® and other fine software stores.
Psygnosis
675 Massachusetts Ave.
Cambridge, MA 02139

USA™

SubLOGIC has carved a unique market niche as the sole publisher of aviation edutainment software. Our simulation technologies have been bringing flight into the home since 1977. Let us introduce you to the TOTAL FLIGHT EXPERIENCE.

Simulation features like high fidelity flight dynamics, special flight graphics and sound, verbal and visual guidance systems, locator and facility control menus, and a structured flight assigner give you an extremely rewarding flight experience. Our user friendly software guides you from takeoff, through easy visual and radio enroute navigation, to a successful landing at your destination.

Two separate sets, USA East and USA West, cover the eastern and western sections of the country. Together they give you comprehensive visual scenery coverage of the entire United States plus every paved public-access airport, nav-aid and instrument approach. A continuous flow of cities, airports, rivers, highways and railroads (the entire national infrastructure) makes flying a breathtaking experience. Our colorful, comprehensive maps are a SubLOGIC trademark.

USA (also for Great Britain Scenery Collection). All you have to do is specify a time frame and difficulty level, select a flight, and print a copy of your flight log. Spoken Air Traffic Control messages come alive nationwide (with ATP or Air Force and optional SoundBlaster sound card).

USA East and USA West are available for $69.95 each.

SubLOGIC - Dedicated to bringing you the total flight experience!

All SubLOGIC flight simulations, and Microsoft Flight Simulator, can be greatly enhanced with the USA add-on.

USA

USA integrates three products in one coordinated package; a structured flight assignment system, a comprehensive scenery management system and, of course, a nationwide scenery platform.

USA's scenery management system provides instant inflight information about or relocation to any airport or nav-aid facility. Navigation aid symbols can be turned on an off as desired to help you visualize the location of all radio nav-aids. Huge floating traffic patterns and runway approach arrows guide you down to a safe landing at the destination airport.

The automatic flight assignment system designs structured flights for

Flight Simulations

Our aviation dedication is demonstrated in two low-priced simulations. Many flight sim developers have abandoned the general public to create new products specifically for the latest high-end, ultra-fast machines. Our simulations can run optimally on family-oriented 16MHz through 33MHz computers. We've also taken extra effort to ensure that

Colorful Comprehensive Maps are a SubLOGIC Trademark

8MHz 286 and top-end users alike will enjoy the SubLOGIC flight experience.

Flight Light

No more "Oh, I tried it before and I crashed!"

Introducing Flight Light, a simple yet full-featured flight simulation designed to give you a fun and successful flight experience. Fly your Cessna jet along flight corridors from New York to Boston, Chicago/Champaign, Los Angeles/San Diego, and now Dallas/Austin. A practice flight mode makes it impossible for you to crash. Pitch/power visual cues show you what settings to use to climb, cruise, descend and land. A second window view can lock onto your destination airport or onto the all-important horizon. Visual track-to-destination arrows, traffic pattern indicators and radio nav-aid markers can be turned on or off any time. Program features are organized under a brand new menu system that offers context-sensitive help.

Our devotion to bring aviation to the world inspired us to release Flight Light at the ultra-low price of $29.95, so you can get one for yourself or stuff the world's Christmas stockings.

New York City at Dusk

Midway Airport and Map View

Flight Assignment: ATP

The renowned complete jet airliner simulator, now available for a low $44.95. Sit back and watch the ingenious autoflight mode fly a Boeing 737 or any of four other heavy transport aircraft across the country. Listen to the voice of Air Traffic Control guide the aircraft from takeoff to touchdown (with SoundBlaster sound card). When you're ready to earn your wings as an Airline Transport Pilot, take the controls and fly any of hundreds of predefined flight assignments.

USA Night Flight

ATP's proprietary Air Traffic Control system* really excels when used in conjunction with USA. The combination of ATP with USA is such a natural, we've decided to include the ATP simulation on the CD-ROM version of USA East/West. This combo package will keep you flying to new places for many years to come!

VOR and ILS Nav-Aid Symbols

All products available for IBM/compatibles. See your dealer, or feel free to call our friendly and knowledgeable staff at 800-637-4983 for additional information.

Flight Assignment, Flight Light, and Scenery Collection are trademarks of SubLOGIC. * ATC system patent pending. All other products and brands are trademarks or registered trademarks of their respective owners.

the Computer Flight people

subLOGIC®

TELEPHONE: (217)359-8482
FAX: (217)352-1472
ORDER LINE: (800)637-4983

Circle Reader Service Number 179

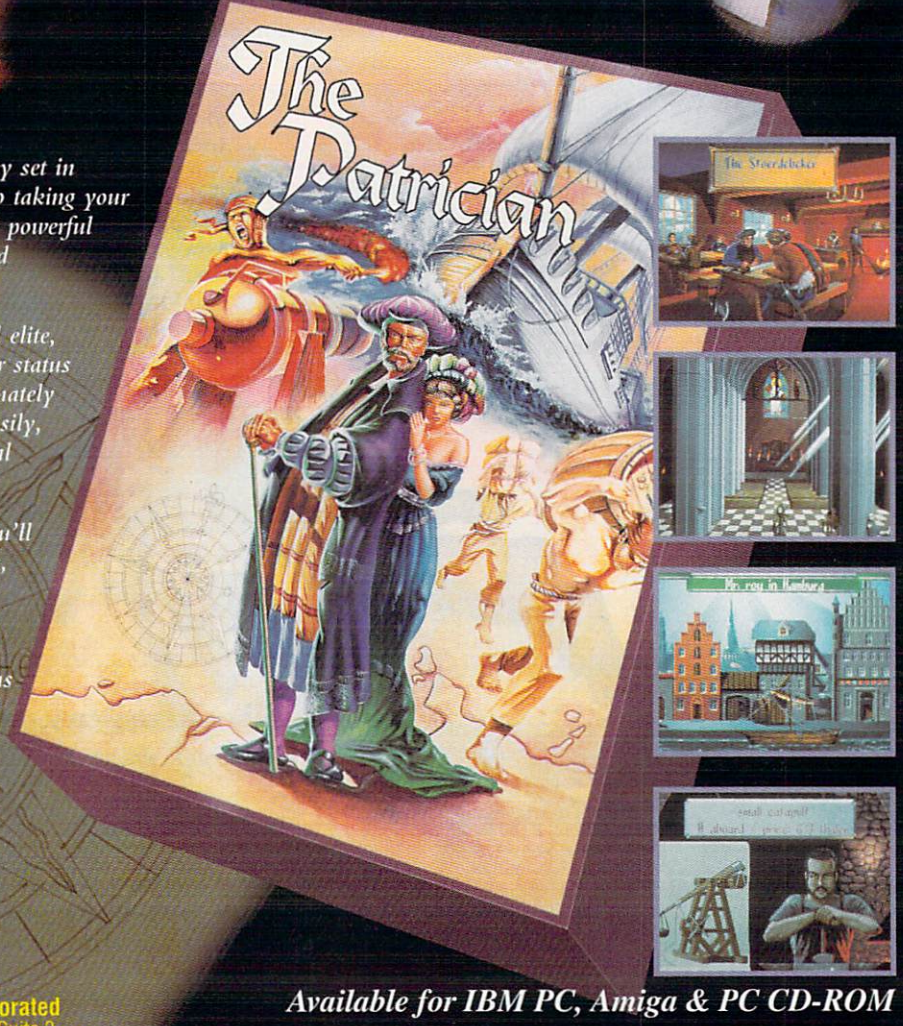
The Patrician

The Patrician is an epic saga of power and money set in medieval Europe. Trading and strategy are key to taking your rightful place in the Hanseatic League – the most powerful group of highly organized traders who transformed international trading in the middle ages.

In your pursuit to become a member of this social elite, you begin your climb to the top maneuvering your status from humble merchant to elected Mayor and ultimately Alderman. But the road to the top won't come easily, with bribery, blackmail, lavish feasts and financial "donations" becoming your tools.

As the Patrician (an ancient roman aristocrat) you'll travel the high seas visiting sixteen seaport towns, each with different trading potential. Be careful though, your expedition will find you confronting pirates and using the primitive but devastating weapons of the time. Every decision you make has a bearing on what happens later, so you must be a skilled strategist in all aspects of your life, including personal relationships.

Complex, involving and addictive, you'll find The Patrician is in a league of its own!



ASCON

READYSOFT

ReadySoft Incorporated
30 Wertheim Court,Suite 2
Richmond Hill, Ontario. Canada L4B 1B9
Tel: (905) 731-4175 Fax: (905) 764-8867

Available for IBM PC, Amiga & PC CD-ROM

Circle Reader Service Number 251

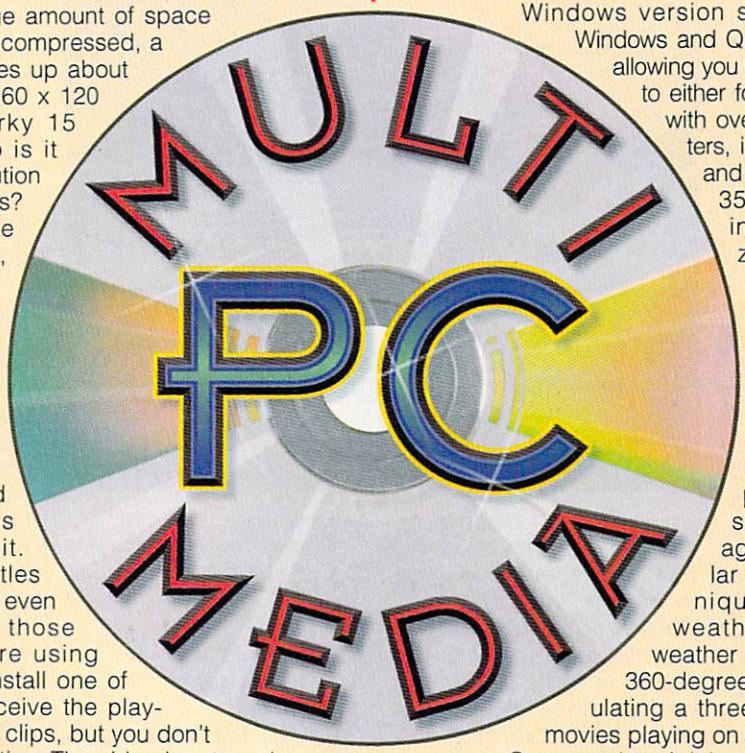
©1993 Ascon Ltd.
Distributed by ReadySoft Incorporated

DESKTOP VIDEO FAST FORWARD LURCHES AHEAD

BY DAVID ENGLISH

When Microsoft's Video for Windows was released, many industry pundits predicted a revolution in desktop video. A year later, most computer users aren't even aware of Video for Windows, So what happened?

Too few people are buying Video for Windows or the video input cards that let you bring video clips into your computer. There seem to be two reasons for this. First, as originally released, the program pretty much restricted you to a stamp-sized video image (160 pixels x 120 pixels). It's hard to get excited about video images so small you can barely see them. Second, the actual video files take up a huge amount of space on your hard drive. Even compressed, a 30-second video clip takes up about 4MB—and that's at the 160 x 120 size and a slightly jerky 15 frames per second. So is it time to declare the revolution over, even before it begins?



Some revolutions take time and occur quietly, almost without notice. The main effect of this quiet revolution has been on CD-ROM titles. If you have a CD-ROM drive and regularly try out new titles, you probably have the drivers for Video for Windows and QuickTime for Windows without even knowing it. Many of the CD-ROM titles released in 1993 (and an even larger percentage of those scheduled for 1994) are using video clips. When you install one of these CD-ROMs, you receive the playback drivers for the video clips, but you don't get the video capture utilities. The video input cards include the video capture utilities, so there's no longer any reason to buy the Video for Windows package.

The PC industry is making real progress in overcoming desktop video's too-small image size and too-large storage requirements. You can buy several video input cards (Creative Labs' VideoSpigot, Media Vision's Pro MovieSpectrum, and Intel's Smart Video Recorder) that let you work with 320- x 240-pixel video clips. Cards that offer the Holy Grail of full-screen video (640 x 480) are still expensive but are quickly falling in price. Sigma Designs' $449 ReelMagic card, which should be available by the time you read this, will boast full-screen playback with MPEG compression—but has no provision for recording video.

What else is needed to bring you and me into this new world of desktop video? Powerful but easy-to-use video-editing programs. The first two of what will be many such programs are Adobe Premiere (Adobe, 415-961-4400, $295) and MediaMerge (ATI Technologies, 416-882-2600, $295). Both let you combine video clips with a variety of special effects and save the result as a new video file.

Adobe Premiere 1.0 is a subset of the highly respected Adobe Premiere 3.0 for the Macintosh, which offers a larger set of professional features for a hefty $795. The Windows version supports both Video for Windows and QuickTime for Windows files, allowing you to mix the formats and save to either format. The program comes with over 35 image-processing filters, including antialias, emboss, and sharpen edges, as well as 35 effects and transitions, including cross-dissolve, zoom, and venetian blinds.

Even though it doesn't have all the features of the Macintosh version, the Windows version is still a powerful program. The manual shows you how to insert one video image into another (for a picture within a picture), superimpose a person against a background (similar to the Chroma key technique used to place a TV weatherperson in front of a weather map), and even create a 360-degree video presentation (simulating a three-dimensional space with movies playing on each of five walls).

Compared to Adobe Premiere, MediaMerge is easier to use, but that's mainly because it offers fewer features. For example, MediaMerge offers only nine transitions—though you can alter their direction, color, and duration. In its favor, MediaMerge offers a separate WAV file audio editor, an integrated text animator, and a CD-ROM full of videos, animations, sounds, photos, and backgrounds that you can use in your video productions.

With a new generation of cards that offer full-screen video and with powerful editing programs such as Adobe Premiere and MediaMerge, desktop video should finally arrive for the PC—a bit late for the revolution, but just in time for the victory celebration. ❑

MULTIMEDIA PC

By Richard O. Mann

If you haven't already bought a CD-ROM drive for your PC, chances are that you'll buy one soon.

Market researchers estimate that over 6 million CD-ROM drives will be sold in 1993 and a staggering 18 million will be sold in 1994. If you're one of the 18 million who'll be buying in 1994, you've got some homework to do. If you buy a drive to work with your existing sound card, you'll face the whole lineup of drives; if you buy it as part of a multimedia kit, your choices will be more limited. Even if you buy your drive as part of a kit, you'd better know something about the drive that's included—it's too easy to get stuck with less-than-adequate equipment.

The problem is that CD-ROM drives come shrouded in a cloud of technobabble: Average seek time, sustained throughput, SCSI-2, XA specs, multisession capability, and High Sierra compatibility are just some of the terms you'll see. Relying on different measures, at least three major manufacturers claim their drives are the fastest on the market, while others emphasize the particular performance specification that makes their products look the best.

There are no absolutes, and there's no way to pick out the fastest, most reliable, or overall best value. But doing a little homework to understand the terms will help you identify the drives that'll best fit into your system.

Lesson 1: Speed

Double speed. This is the most important measure and the easiest to understand. The original CD-ROM drives spun their platters at the same speed used by audio CD players. By 1992, it was obvious that simply wasn't fast enough, so drive makers upped the rotational speed, resulting in double-speed drives. Double-speed drives can still play audio CDs at the regular speed, but they can literally double the speed at which they grab data and feed it out to the computer.

Increased speed is always pleasant, but it's essential when using Video for Windows, Microsoft's live-action video and sound program used in dozens of the most popular new multimedia CD-ROMs. If you want to enjoy the video footage in the encyclopedias, most of the atlas and travel discs, and hundreds of new discs that will appear in 1994, you need a double-speed drive. Many of the old single-speed drives will stutter when playing a long burst of video.

Unless your CD-ROMs are primarily text oriented and you're a patient sort who doesn't mind several-second delays in information flow, get a double-speed drive.

Data transfer rate. Transfer rates measure the amount of data fed from the drive to the computer bus, measured in kilobytes per second (KBps). Although most manufacturers will quote a burst mode rate (the fastest rate at which a single read's worth of data can be put out), the one that matters is the sustained transfer rate. The sustained transfer rate indicates the speed of a continuous flow of data resulting from many disc reads.

The sustained transfer rate is a function of the disc rotation speed. Single-speed drives run at 150 KBps; double-speed drives achieve at least a 300-KBps rate. Toshiba's latest drive runs at 330 KBps, and Plexstor has hit 335 KBps. In certain applications, such as ones that use Video for Windows, the increase of 30 KBps to 35 KBps can be surprisingly significant.

Average access time. Also called average seek time, this measures the time in milliseconds (ms) it takes the drive to receive a data request, move the head to the data location on the disc, and retrieve the data. It's possible to monkey with this one, because there's no real standard on how far the head has to move.

Access time is only the second-most-important measurement. Real-world use of CD-ROMs often involves sequential reads right down the data tracks, requiring little or no head movement, making the access time extremely fast. Remembering that hard

HOW TO CHOOSE

disks offer access times under 20 ms, the fastest CD-ROM drive's 200-ms access time seems rather poky. But compared to the 1000-ms to 400-ms times of drives from two or three years ago, it's quite respectable. If a CD-ROM drive has an access time of 200 ms to 250 ms, it's considered fast.

CPU utilization percentage. It's important that interacting with the CD-ROM drive not monopolize your computer's CPU, which needs to be doing other tasks between the times it talks to the drive. This measure isn't always published by the vendors, but it's still significant. In fact, the Level 2 MPC specifications (explained later) require no more than 50-percent utilization.

If the drive takes too much system time, everything else slows down. Higher transfer rates require more CPU time, so newer, faster drives have to struggle to keep the utilization within bounds. The standard was raised from 40 percent to 50 percent in Level 2 MPC to accommodate the new generation of superquick drives.

Buffer size. A buffer reads data ahead, stores the data on a chip, and feeds it out to the CPU when requested. Without the buffer, all reads would have to come directly from the disc, which is much slower. Buffers range from 64K to 256K. For single-user systems, smaller buffers are perfectly adequate; the larger buffers have noticeable effects only in multiuser networked sessions.

Lesson 2: Data Formats

Originally, CDs were designed to play music. The standards for data on music discs were embodied in the "red book." When computer data came to CD-ROMs, the High Sierra or ISO9660 standard (in the "yellow book") controlled the format. This standard allowed for higher speeds than audio required while still allowing playback of red book audio tracks through a separate channel to the headphones or stereo jacks on the sound card.

Video for Windows required an update to ISO9660, codified in the "orange book." This standard—which wasn't given its own new name—encodes audio information into the normal computer data and ships it out to the computer bus, where Video for Windows separates it. Such interleaved audio data speeds up CD-ROM drive access; the old system had to read the disc twice—once for the sound and once for the data.

The orange book is the current standard. The next step is the XA standard, which involves full interleaving of audio and data, with the audio then going directly to an audio chip for processing. It also provides compression of video data. The bugs aren't fully out of XA yet, but drive makers are building it into their drives as it currently exists. XA requires that the software be written to the standard.

Lesson 3: Photo CD

The new Kodak Photo CD system records photographs in digital form on a CD-ROM. Kodak's Photo CD standard is a takeoff on the XA standard, making it relatively easy for drive makers to add this additional compatibility.

The buzzword here is *multisession capability*. Originally, a Photo CD could only be written to one time, even if the disc ended up being only partially filled. An update to the standard allows appending images to existing photos on a CD. Current drives have the extra intelligence to find second and additional sessions.

Lesson 4: MPC Standards

The Multimedia PC Marketing Council sets the minimum hardware configuration required to successfully run software that's MPC compatible. The original MPC standard, set in 1990, has proven inadequate to support today's more demanding CD-ROM–based software, so the council set the new MPC Level 2 (MPC-2) standard in the summer of 1993.

MPC-2 mandates a 486 processor; 4MB of RAM; a 160MB hard disk; a double-

A CD-ROM DRIVE

How to Play Audio CDs on Your CD-ROM Drive

Your computer's CD-ROM drive is a high-priced CD player optimized for the special needs of computer data storage, but it can still play standard audio CDs.

If all you need is a basic CD player program, you can use Windows' own Media Player (MPLAYWE.EXE). It lets you start, stop, and pause your CD, as well as move from track to track. Most multimedia kits and CD-ROM drives also come with utility programs that play audio CDs.

You can augment these basic programs with full-fledged computer CD-player programs that allow you to enter artists' names and track titles. Once you've cataloged a CD, the player remembers it. You can pick from the displayed track titles to create your own individualized program.

CD Player 3.0 (Graphical Bytes, 516-283-4473, $55) puts a familiar CD-player control panel on your Windows desktop with VCR-like control buttons. To record a CD on an audiocassette, use the fit-to-tape feature to compute how best to put the tracks onto various lengths of tape.

SoundWorks (The Software Toolworks, 800-434-3088 or 415-883-3000, $49.95) is a DOS application that runs memory resident in 15K and can be unloaded when not needed. It's old-fashioned and also a tad slow to work with, but it plays CDs and catalogs your collection nicely. It comes with a Works application that serves as a graphical, icon-based menu system for DOS.

speed, XA-ready, multisession-capable CD-ROM drive; a 16-bit sound card; and a 16-bit Super VGA video card capable of 65,000 colors in 640 x 480 mode. The standard doesn't specify local bus, but it would be difficult to meet the required specs without it.

The CD-ROM drive must achieve a sustained transfer rate of at least 300 KBps. MPC-2 machines should be able to play digitized video in a 320 x 240 window at 15 frames per second. The fast CD-ROM drive is a key component in achieving that goal.

We're talking about a powerful computer here, one that'll set you back a fair piece of change. It's smart to buy your CD-ROM drive and sound card to match the MPC-2 specs, even if you're still running a mere 386. It'll pay off in the long run. Certainly not all current CD-ROM software requires that kind of power, but with Video for Windows entering the equation, you're going to be needing that 486.

Lesson 5: Catching the Right Bus

Most CD-ROM drives run off a SCSI (pronounced "scuzzy") bus, usually controlled by a SCSI controller on the sound card. Creative Labs, the manufacturer of Sound Blaster sound cards and associated multimedia upgrade kits, is the most visible holdout. Sound Blaster kits control their CD-ROM drives through an IDE bus. If you plan to control your CD-ROM drive from a Sound Blaster card, you'll have to buy a compatible drive that runs from an IDE controller.

The advantages of the SCSI bus are speed, a widely known standard, and the ability to add as many as seven devices to any SCSI board. You could run a tape drive, a Bernoulli box, a scanner, a hard disk, and another SCSI device without using a slot for a controller card for each device.

Also, look for compliance with the new SCSI-2 standard.

Lesson 6: Physical Matters

You can select either an external or an internal drive strictly on the basis of availability of drive bays and desktop space; there's no performance difference. But remember that even an external drive requires a controller card inside the case.

There are two ways to handle getting a disc into the CD-ROM drive. Most common is a caddy system, involving a removable carrier that holds the CD-ROM as it's inserted into the drive. Less common is a motorized assembly, where a metal tray slides out of the drive's housing to directly accept the CD-ROM .

Because CD-ROM drives are optical devices (they reflect laser beams off tiny spots on the disc's surface), keeping the drive clean is essential. Although the drawer-system drive manufacturers would probably dispute it, using a caddy probably reduces the risk of internal contamination of the laser mechanism. Many drives include a device that physically cleans the laser lens each time you slide a CD-ROM into or out of the drive.

Midterm Exam: Choosing a Drive

You've now done your homework on general considerations for buying a CD-ROM drive. How do you put it together to select a drive? Try this:

1. Determine if you need double speed and low access time. Will you be using current educational and reference CD-ROMs, such as multimedia encyclopedias? If so, you need double speed. If your use will be exclusively for searching text bases and other nonmultimedia tasks, a slower drive will suffice.

2. Determine if you need the new specs, including XA and Photo CD multisession capability. Basically, if you need double speed, you might as well get the rest of it. (It's hard to find a fast drive that doesn't meet

Explore.

As Far and as Fast as Your Mind Will Travel.

ALL NEW 1994 EDITION

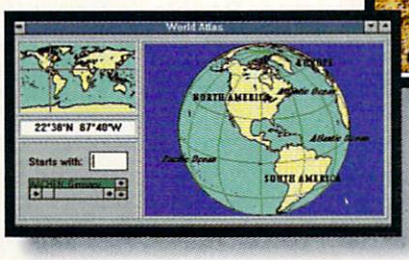
Nine unique entry paths are available – one to suit every style of learning. With Virtual Workspace™ open multiple articles, pictures, videos, sounds and animations to expand your understanding. Idea Search guides you through a network of over 33,000 articles such as...

RELATIVITY
SPACE TRAVEL
VACUUM

On CD ROM for Windows™, DOS and Macintosh®.

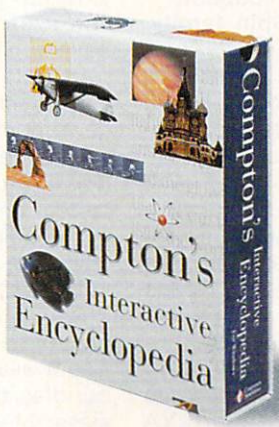
Access U.S. and world history through the new multi-level, dynamic timeline. Click the time period of your choice and open related articles and multimedia displays.

To bring learning alive, there's nothing like full-motion video and sound. People remember almost three times more with multi-sensory stimulation over reading alone! *Compton's* features over 200 multimedia clips including videos, animations, sounds, and exclusive slide shows – plus over 7,000 images.



Start with an astronaut's view of the globe. Click on any region and zoom in for a closer look. Move from continents to countries, to cities – with each level bringing you greater detail.

It's a big universe. And with *Compton's Interactive Encyclopedia*™, you can explore it daily. With the click of a mouse you can experience a space shuttle launch – in full-motion video and sound. Click again, and you'll discover the history, technology and people who made it possible. The same easy access can take you from science to nature, history, people and places. *Compton's Interactive Encyclopedia*™, chosen easiest-to-use, offers a world of knowledge through videos, animations, narrated slide presentations, audio and quickly referenced text. Still, the most compelling reason for choosing *Compton's* is this: Your children. You're giving them a tool that can increase their comprehension, stimulate curiosity and enhance motivation. Yes, and *Compton's* is fun, too. And that's what learning should be! Visit your local retailer or call 800-862-2206 for more information.



Circle Reader Service Number 240

W 100 WINDOWS MAGAZINE

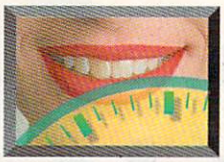
1993 MULTIMEDIA WORLD READERS' CHOICE WINNER

COMPTON'S NEWMEDIA
2320 Camino Vida Roble
Carlsbad, CA 92009 (800) 826-2206

COMPUTE CHOICE AWARDS

NEW MEDIA INVISION MULTIMEDIA AWARDS 1993 SILVER MEDAL

© 1993 Compton's NewMedia, Inc. All products and company names are the property of their respective trademark holders. 40-10015-A



these specs.)

3. Determine which bus to use. This one's easy: Use the SCSI-2 bus unless you have or plan to buy a Sound Blaster sound card.

4. Determine the physical setup you need. To keep the drive's innards clean, choose an internal drive if possible—preferably one that uses a caddy.

Now that you know the specs you need, the choice boils down to fine distinctions between drives—such as exact speed figures—and price. You also need to determine if you want to buy the drive as part of a multimedia upgrade kit. If you don't have a sound card yet, give serious consideration to the upgrade kits, which give you a CD-ROM drive, a sound card, and usually an attractive bundle of CD-ROM titles. (If you're opting for a kit, it's not unreasonable to make your choice based on the CD-ROM titles that come with the kit.)

The Drives

In spite of the prediction that we'll be buying 18 million CD-ROM drives in 1994, there aren't many vendors manufacturing drives. As you read the ads, look at the multimedia kits and multimedia-ready computers. You'll see the same basic dozen or so drive manufacturers. Here's a summary of the product lines of several of the major CD-ROM drive manufacturers.

Toshiba XM-3401 series. Available as internal drives (XM-3401B, $695), external drives (TXM-3401E, $895), or portable drives operating with supplied parallel port adapters (TXM-3401P, $925), these fine double-speed drives show up in many kits and multimedia systems. Toshiba (714-583-3000) touts them as the fastest on the market, based on their unmatched 200ms average access time. They also achieve a 330-KBps sustained transfer rate, which is the second fastest on the market. All three use the SCSI-2 interface and are XA ready and Photo CD multisession capable.

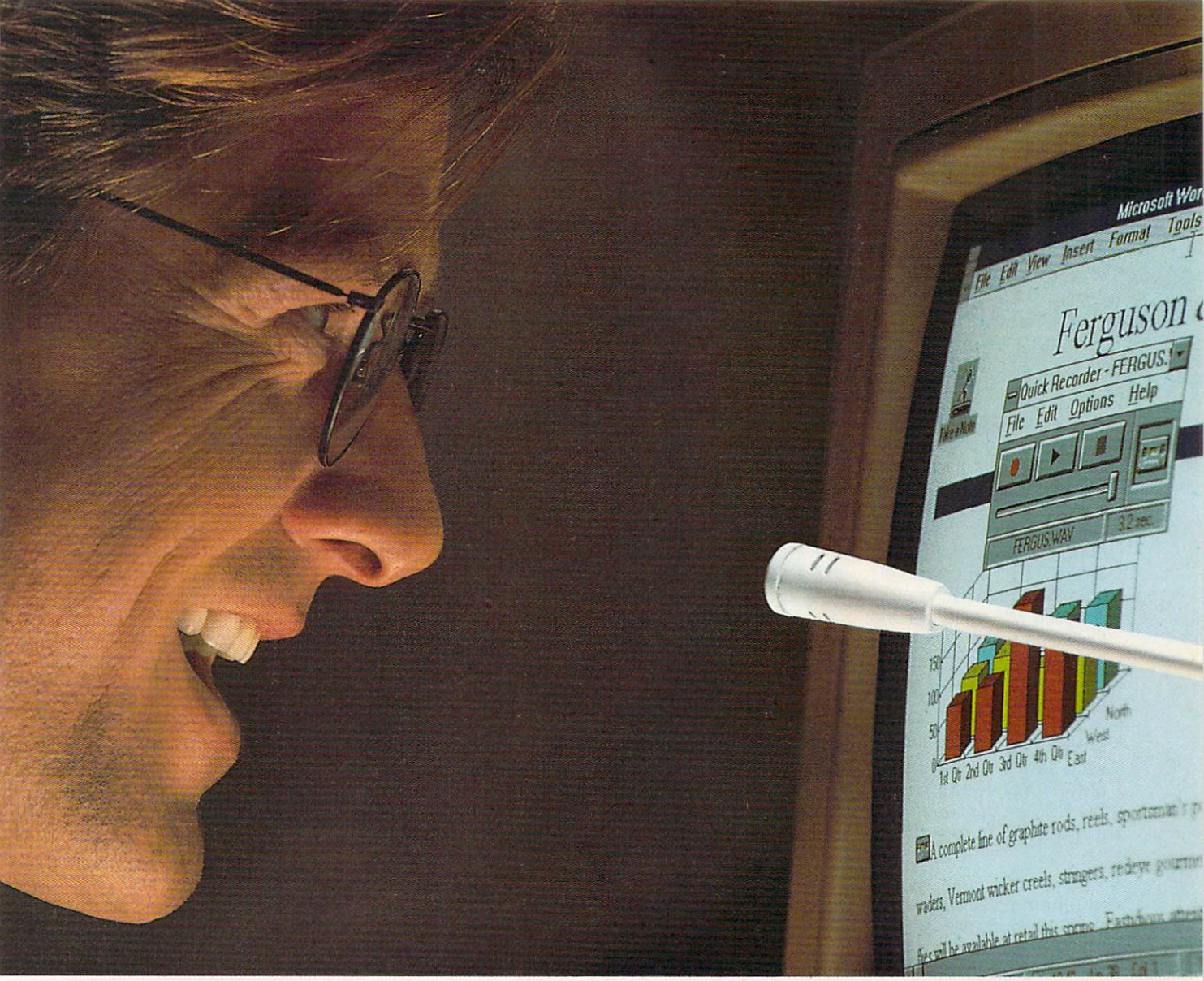
NEC MultiSpin family. NEC (800-NEC-INFO or 708-860-9500) introduced the very first double-speed drive, calling the technology MultiSpin. Both the internal drive (MultiSpin 84, $630) and the external drive (MultiSpin 74, $695) require a disc caddy and utilize a double-door system on the drive to ensure dust protection. Both deliver a 300-KBps sustained transfer rate with a 280-ms average access time. They're XA ready and Photo CD multisession capable, and they offer a switchable setting to either a SCSI-1 or a SCSI-2 bus. The MultiSpin 38 ($560) is a parallel-port portable drive, which loads the disc through a top door. The first double-speed portable drive, the MultiSpin 38 maintains a 300-KBps sustained transfer rate but has a slower 400-ms average access time. It can operate with an optional battery pack. NEC offers an upgrade plan for owners of its earlier models who trade in working models of the CDR-37 portable ($179), CDR-74 external ($249), and CDR-84 internal ($229).

Plexstor Double-Speed Plus drives. Plexstor (408-980-1838), formerly called Texel, also claims its drives are the fastest on the market, based on its 335-KBps sustained transfer rate with a 240-ms average access time. Both the internal DM-3028 ($499) and the external DM-5028 ($599) use a caddy system and have drive doors for dust protection. (The doors make using the drives a little difficult until you learn how to gently pull the door down with the lip of the caddy, once again making disc loading a one-handed task.) The drives are SCSI-2 compliant, XA ready, and Photo CD multisession capable. Plexstor drives are also available in a variety of bundles that include software, Media Vision's Pro AudioSpectrum sound cards, and speakers.

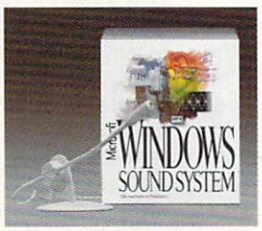
Philips LMS drives. Philips LMS (719-593-7900), formerly Laser Magnetic Storage International, is the only major CD-ROM drive manufacturer based in the United States. Its CM206 internal drive ($499) is a double-speed drive that delivers a 300-KBps sustained transfer rate and a 350-ms average access time. The CM206 uses the 16-bit PC/AT bus directly rather than a SCSI adapter, which LMS says is faster. The drive uses a motorized tray that comes out of the drive to accept a disc, rather than a caddy. An unusual feature allows playing audio CDs with a simple button push—without any special software.

MicroSolutions Backpack 160550. MicroSolutions (815-756-3411) makes a series of Backpack portable peripherals, including a portable CD-ROM drive ($499). The drive plugs directly into the parallel port of any computer. It's a single-speed drive, delivering a 150-KBps sustained transfer rate and a 350-ms average access time. It's XA and Photo CD multisession compatible and uses a top-loading, no-caddy system. Because of its slower speed, it's not appropriate for the more demanding multimedia applications, such as those using Video for Windows. If your road work, however, requires access to textual information and simple graphics, this could be a good choice.

Editor's note: Just as we were going to press, NEC announced its new MultiSpin 3X and MultiSpin 4X readers. The 3X readers are triple-speed CD-ROM dri-



FIRST WE MADE WINDOWS. NOW IT'S TIME TO TALK.



With the new Microsoft® Windows™ Sound System, just tell your computer what you want it to do. You can customize your system to respond to your personal spoken commands. Even our new directional microphone knows exactly who you are.

This full set of audio software has lots of options, too. Spice up presentations with music or quotes. Or proofread numbers as the computer reads them back.

All for the price of a game.

You can also get this software with the sound board included. So go visit your nearest reseller to see what's creating all the conversation.

Microsoft
Making it easier

MICROSOFT WINDOWS © 1993 Microsoft Corporation. All rights reserved. Microsoft is a registered trademark and Windows and the Windows logo are trademarks of Microsoft Corporation.

How to Cache Your CD-ROM Drive

To see the value of a disk cache, try starting up Windows with your cache disabled. On my fast 486 DX2/66, it takes just over two minutes to load Windows without a cache. With SMARTDRV, the relatively poky Microsoft cache utility supplied with Windows and DOS, the same task takes only 37 seconds.

The slowest drive on your system is the CD-ROM drive; caching it should accelerate it to warp speed. Unfortunately, SMARTDRV doesn't cache CD-ROM drives; you need a third-party program for that. I looked briefly at three of them.

Super PC-Kwik (included in WinMaster 1.5 from PC-Kwik, 800-274-5945 or 503-644-5644, $129.95) is the slowest because it's the most conservative with your data. It doesn't default to delayed disk writes and request sorting, as the others do. It's also difficult to install, requiring you to somehow get its driver loaded physically within 64K of the CD-ROM driver. On one system, I couldn't get it to work at all; on another, it took a half-dozen tries before I got it loaded properly.

Lightning CD (Lucid, 800-925-8243 or 214-994-8100, $79.95) is faster but also suffers from a difficult installation. The manual says in one place that the program will disable SMARTDRV, but it doesn't. Its driver must install after the CD-ROM device driver, but the installation program doesn't necessarily put it there. It took three tries to get this one running, but when it runs, it earns its name. Lightning CD comes with keyboard and video speed enhancers and a directory tree deletion tool.

Norton Speedrive 4.0 (Symantec, 800-441-7234 or 408-252-3570, $99) is similarly fast. Its installation was the simplest, but it also required a manual tweak to the AUTOEXEC.BAT file that wasn't obvious until my hard drive started locking up occasionally. It adds a couple of handy Windows applets to monitor and test cache performance. Because of its safer installation routine, I would recommend Norton Speedrive for those who dislike having to fuss with the system files.

ves (internal, $500; external, $600; portable, $455), while the 4X reader is a quadruple-speed CD-ROM drive (external, $995).

Multimedia Upgrade Kits

At press time, only Media Vision and Creative Labs were offering Level 2 MPC upgrade kits.

Media Vision kits. Media Vision (800-348-7116 or 510-770-8600) is the manufacturer of the market-leading Pro AudioSpectrum 16 sound card and related products.

The Pro 16 Multimedia System II ($1,199) is the high-end kit, featuring a double-speed NEC 84JD-1 drive with a 300-KBps sustained transfer rate and a quick 250-ms average access time. It includes the Pro AudioSpectrum 16 sound card and the following titles: Compton's Interactive Encyclopedia for Windows, Battle Chess Enhanced, Mantis, Civilization, Macromedia Action!, Mayo Clinic Family Health Book, PC Karaoke, and Where in the World Is Carmen Sandiego? Deluxe.

The Fusion Double CD-16 (external, $799; internal, $699) features the double-speed NEC 55J drive with a 300-KBps sustained transfer rate and a 350-ms average seek time. It's fully MPC-2 compatible. The kit includes a Pro AudioSpectrum 16 sound card and four CD-ROM titles: Compton's Interactive Encyclopedia for Windows, Battle Chess, Arthur's Teacher Trouble, and The 7th Guest.

Creative Labs kits. Of course, Creative Labs makes the famous Sound Blaster series of sound boards. It also sells a series of multimedia upgrade kits featuring Sound Blaster sound card products. Note that the CD-ROM drives in these kits are not SCSI-bus compatible.

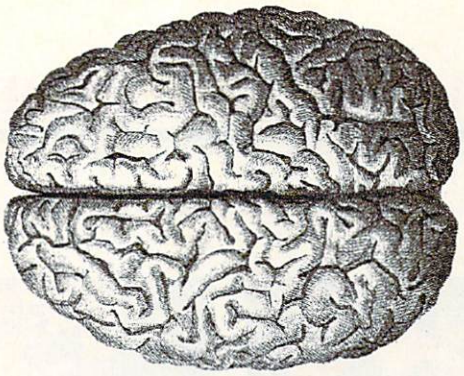
The Sound Blaster DigitalEdge CD kit ($999) features a double-speed, MPC-2–compatible drive with a 300-KBps sustained transfer rate and a 350-ms average access time. The drive uses a front-loading tray. The sound card is the new Sound Blaster Pro 16 with Advanced Signal Processing, a real powerhouse. The bundled software titles include VoiceAssist (voice recognition software), Aldus PhotoStyler SE Photo CD software, The Software Toolworks Multimedia Encyclopedia, Microsoft Works for Windows, Microsoft Bookshelf, Macromedia Action!, and AuthorWare Star.

The Sound Blaster Edutainment CD 16 kit ($750) is built around a double-speed, MPC-2–compatible drive with a 300-KBps sustained transfer rate and a 320-ms average access time. The sound card is the Sound Blaster 16. Creative Labs went all out in bundling software for this kit. The package includes Aldus PhotoStyler SE, The Software Toolworks Multimedia Encyclopedia, Sherlock Holmes Consulting Detective, Lemmings, Secret Weapons of the Luftwaffe, Loom, The Secret of Monkey Island, and Indianapolis 500, the Simulation.

The Final Exam: Parting Words

Buying a CD-ROM drive to bring your computer into the era of faster multimedia applications isn't as difficult as it seems. A little education cuts through the smoke screen of letters, numbers, speeds, and compatibilities. With a little research, you'll be ready to choose one of those 18 million CD-ROM drives waiting to be bought in 1994. ❑

THIS IS YOUR BRAIN.



THIS IS YOUR BRAIN NEUROJACKED INTO CYBERNET IN SPECTRE VR.™

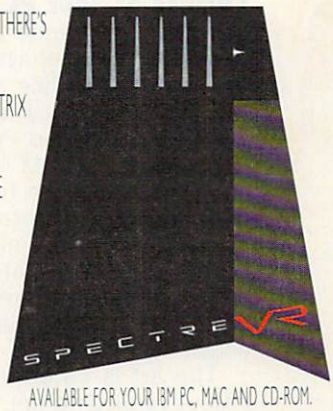
FULL MOTION VIDEO FROM CD-ROM: THINK OF IT AS AN INTERMEDIATE STEP BETWEEN CYBERSPACE AND LIFE AS YOU'VE KNOWN IT.

SMART WALLS ARE COVERED WITH LIVE ACTION VIDEO. ACID POOLS WILL TRY TO TRAP YOU. MAYBE YOUR SCATTER SHOTS CAN HELP UNTRAP YOU.

ANY QUESTIONS?

GO AHEAD, JACK INTO A WHOLE OTHER WORLD. THAT IS, IF YOU THINK YOU'RE READY TO HANDLE NANOSECOND PRESSURE FROM SMART-WEAPON ENEMIES THAT LEARN YOUR EVERY MOVE THEN STRIKE FROM ANY DIRECTION. THE CYBERWORLD HAS NEVER BEEN SO FRIGHTENINGLY REAL. BUT THERE'S HOPE: AT LEAST YOU'LL HAVE AN ARSENAL THAT'S JUST AS SMART AND POWERFUL AS THAT OF YOUR OPPONENTS. THE QUESTION: CAN YOU NAVIGATE THE MATRIX AS QUICKLY AS YOUR BRAIN PROCESSES THE STIMULATION ON YOUR SCREEN? THE ANSWER: FIND OUT AS YOU HOVER ABOVE THE CYBERARENA, OR SUBMERGE INTO NEGATIVE CYBERSPACE. YOU CAN EVEN ALTER THE LANDSCAPE, YOUR OPPONENTS AND YOUR WEAPONS WITH VRCHITECT.™

SO, JACK INTO SPECTRE VR WITH ONE PLAYER, A NETWORK OF UP TO EIGHT, OR EVEN MODEM PLAY ON THE PC. AND GET READY FOR A WHITE HOT ELECTRONIC ADRENALINE RUSH. BUT BE FOREWARNED; REALITY WILL NEVER BE QUITE THE SAME AGAIN.



AVAILABLE FOR YOUR IBM PC, MAC AND CD-ROM.

VELOCITY™

HEY, YOU WITH THE CPU: GET A CYBERLIFE. GET SPECTRE VR™.

TO ORDER, SEE YOUR LOCAL RETAILER, OR CALL 1-800-VLOCITY.

Circle Reader Service Number 180

© 1993 VELOCITY™. ALL RIGHTS RESERVED. VELOCITY, SPECTRE VR AND VRCHITECT ARE TRADEMARKS OF VELOCITY DEVELOPMENT CORPORATION. PENINSULA GAMEWORKS IS A TRADEMARK OF PENINSULA GAMEWORKS.

NEW MULTIMEDIA PRODUCTS

Edited By Polly Cillpam

Reading Can Be Fun

Digital Theater has announced a series of edutainment CD-ROMs, called The Learning Carnival. The first entry in the series, The Reading Carnival, is designed to get children ages 6–10 actively involved in reading—and keep them entertained while they learn. Children can enjoy a variety of activities while they explore sections on Animals Facts, Superhero Stories, and Fascinating Facts.

The Reading Carnival features 150 separate screens, six stories, a 630-word pronunciation glossary, eight spelling games and reading quizzes, 18 creative problem-solving games, 60 screens of natural animal photography, and a 20-screen interactive coloring book.

Digital Theater
(404) 446-1332
$49.95
Circle Reader Service Number 530

Culture at Your PC

Here's your chance to sit back and be entertained—and learn about fine art at the same time. Having Cameron's Fine Art Poster Catalog on CD-ROM is like owning a museum full of masterpieces. There are 550 bitmap works of art, 100 WAV-format stereo music files, and over 30 AVI-format video files of sculptures.

The art is categorized into several different segments. Pictures at an Exhibition is a tour of 100 replicas of the world's most famous artists, including Old Masters, Impressionists, Post Impressionists, and Contemporary painters.

Get cultured with Cameron's Fine Art Poster Catalog on CD-ROM.

Each one comes with a short history of the painting and painter (including the museum currently displaying the work of art). While viewing the art, you're entertained by a classical music clip, which includes a notation of the musical title and composer.

Sculptures on Video displays historical facts on pieces ranging from the T'ang Dynasty to Rodin; it plays a video clip of the sculpture rotating with accompanying music.

Cameron Enterprises
(800) 765-1-ART
$49
Circle Reader Service Number 531

Little Critters on CD-ROM

Explore the world of baby animals with Kid's Zoo, an adventure for prereaders and early readers on either disk or CD-ROM. Children as young as 3 can learn about the animal kingdom and its young. The program includes an interactive encyclopedia that lets children explore mammals, birds, fish, reptiles, amphibians, and invertebrates through a variety of avenues—animal type, size, lifespan, speed, and even footprints. They can also learn through a series of games that assess their understanding of animal names, appearances, habitats, and sounds. Some of the activities involve matching an animal to the sound it makes or matching an animal to its geographical habitat.

Using the program's paw pointer, children can learn about baby animals through eight activities, including a talking storybook, Baby Animal Movie Theater, and five multilevel games that encourage children to learn and explore as they're challenged by the various levels of the different activities. Upon completion of each game, children are rewarded with congratulations, applause, and a computer-rendered movie created with the program's interactive movie technology.

Knowledge Adventure
(818) 542-4200
$79.95 (CD-ROM version)
$59.95 (disk version)
Circle Reader Service Number 532

More for Your Money

The Sound Galaxy PRO 16 Multimedia Upgrade Kit is quite a bargain. The kit costs hundreds of dollars less than the separate components, and you get five popular CD-ROM titles. The package includes Aztech Labs' new NX PRO 16 sound card, a Mitsumi AT-bus CD-ROM drive, headphones, and a microphone.

Aztech Labs claims the NX PRO 16 is the most compatible sound card on the market; it supports the Sound Blaster Pro, Microsoft Windows Sound System, Ad Lib, Disney Sound Source, and COVOX Speech Thing.

The bundled CD-ROM titles include Microsoft Works, Macromedia Action! 2.0, Battle Chess CD-ROM Enhanced, Toolworks Encyclopedia, and Toolworks Atlas.

Aztech Labs
(510) 623-8988
$639
Circle Reader Service Number 533

High-Tech Show and Tell

Ask Me Multimedia Center has recently introduced a new multimedia software package, called SUPER Show & Tell. It's Windows based, it allows the user to

Create multimedia presentations

create interactive multimedia presentations in a free-form environment, it's user-friendly, and it supports all popular graphics, animation, sound, and digital video formats.

The program's key attraction is its universal appeal. For example, it's

Around here nice guys don't finish last - they don't even finish. Better know how to drive or Catfish Louie and company will take turns making your Backroad Racer a pile of twisted, burning wreckage. Then taunt you as you watch instant replays of your wipeouts. Video clips give hints and make threats while you try to outrun cops and race on four different tracks. Use 3-D animated instructions to build a model of your car so it's easier to identify the torched remains. Available for IBM on CD-ROM.

The model makes the game better. The game makes the model better.™

Video clips just like this one make the game extra bad. But in a good way.

After you build your car you can follow all traffic laws and be a safe & courteous driver.

{Of course, you could also go play an action-packed game of hopscotch with your sister.}

BACKROAD RACERS™

Circle Reader Service Number 135

NEW MULTIMEDIA PRODUCTS

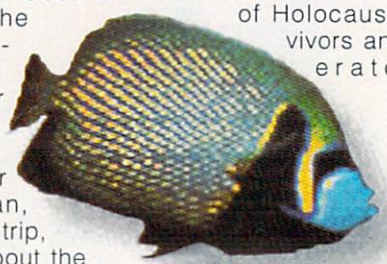
appropriate for business and home office users (including sales and marketing), home PC hobbyists, and teachers.

Businesspeople can use the program's colorful charts, still-frame pictures, and text with sound and motion to make their presentations more effective. Hobbyists can use it to create interactive résumés or home photo albums. Teachers can use it to make their own interactive educational tools.

Ask Me Multimedia Center
(612) 531-0603
$149
Circle Reader Service Number 534

Take the Plunge

Wish you could explore the world's oceans? Oceans Below, from The Software Toolworks, has just the journey for you, and you won't even get wet. Choose your favorite ocean, prepare for the trip, and learn all about the undersea world from the floor up.



Select from over 200 topics of information, as well as over 45 minutes of video clips, synchronized sound, photographs, and original music. Learn about local sea life, explore shipwrecks, and feed or ride any of the fish in the habitat you've selected. It's like going to the aquarium without leaving the comfort of your own home.

The Software Toolworks
(415) 883-3000
$49.95
Circle Reader Service Number 535

Using Technology to Humanize History

Few museums are as emotionally moving as the Museum of Tolerance in Los Angeles, and multimedia plays a large part in communicating that emotion. This is an interactive museum focused on World War II and general issues of intolerance. Its goal is to provide in-depth information for a wide audience.

The main floor is filled with exhibits, while the second floor allows visitors to interact with 30 different computer workstations. The workstations free visitors to research what they're interested in via user-friendly touchscreens.

Visitors can view video footage with first-person accounts and testimonies of Holocaust survivors and liberators.

The Museum of Tolerance features 30 multimedia workstations.

Eight main topics include 5000 different subjects. The database contains 39 volumes of Time/Life Books, MacMillan's *Encyclopedia of the Holocaust*, and *Encyclopedia Judaica*, as well as hundreds of specialty articles not available anywhere else in the world. There are also 57,000 archival photographs, documents, and maps. You can work your way down through a learning tree to the topic of your choice, or you can pick a particular element of that topic and swim laterally through the database for a more focused look at a subject of particular interest.

Museum of Tolerance
(310) 553-9036
Admission prices vary according to age and group size. School groups are admitted free.
Circle Reader Service Number 536

Explore undersea life with Ocean's Below.

Multimedia Bonanza

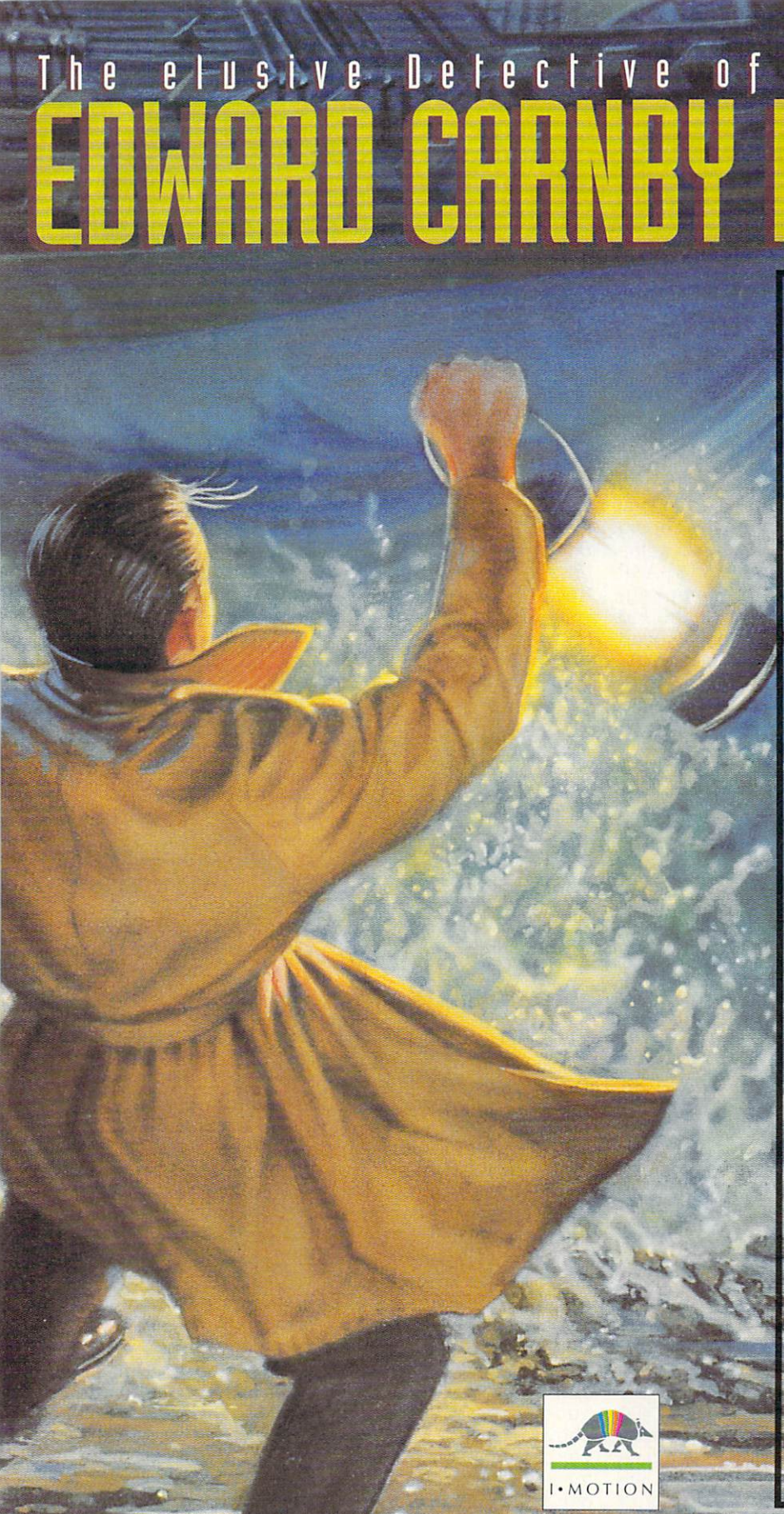
Trying to build your own MPC system? Aris Entertainment may have the solution for you, and it costs only $14.95. The company has begun shipping MPC Wizard 2.0, which gives CD-ROM and Windows 3.1 users the most up-to-date VGA and sound drivers for their multimedia systems.

Like its predecessor, MPC Wizard 1.0, MPC Wizard 2.0 contains the largest collection of VGA and sound drivers for Windows 3.1 on a single CD-ROM. This latest version adds nine Microsoft Video for Windows runtime videos, 20MB of additional drivers, 60 color photographic images, and 60 audio tracks.You also get Aris's standard Media-Clips interface to view the pictures, hear the sound tracks, and watch the Video for Windows live-action videos. All the videos, sound clips, and images may be used royalty-free in any presentation, as long as credit is given to Aris.

Aris Entertainment
(310) 821-0234
$14.95
Circle Reader Service Number 537

The elusive Detective of the Macabre,

EDWARD CARNBY RETURNS!



ALONE IN THE DARK 2™

Over 200,000 mystery enthusiasts have been captivated by the inscrutable Alone in the Dark 1 virtual adventure. Brace yourself for ALONE IN THE DARK 2!

Featuring:

- 50 hours of gameplay
- 70 enigmatic characters
- 15 perplexing and challenging levels
- Hundreds of detailed 3-D objects
- Frightfully eerie soundtrack

Delve into a chilling mystery as Edward Carnby, embarking on his second nerve-twisting adventure! The realm of the macabre has never gripped tighter as you put your sleuthing skills to the test and piece together the mysteries of ALONE IN THE DARK 2!

Free *Mystery Examiner* Offer

Find yourself lost in another time with Volume Two of the 1924 *Mystery Examiner*, a replica period newspaper detailing the events that shape the ALONE IN THE DARK series. Send a self addressed, stamped, business-size envelope to:

I•MOTION
Mystery Examiner Newsletter Offer
1341 Ocean Avenue, Box 417
Santa Monica, CA 90401

I•MOTION

Lose Yourself In Virtual Mystery as You Return to the World of Alone in the Dark!

Circle Reader Service Number 222

MULTIMEDIA SPOTLIGHT

By David English

SOUND BLASTER DIGITALEDGE CD

Why do so many people buy Creative Labs' multimedia upgrade kits? Because Creative Labs virtually invented the standard PC sound card.

Today, the Sound Blaster is *the* standard for DOS games. Almost every other sound card either claims to be Sound Blaster compatible or will soon be offering Sound Blaster compatibility. Technically, only cards from Creative Labs and Media Vision (which bought the compatibility rights in a court settlement) can claim 100-percent compatibility. With Windows, compatibility is less of an issue, as any card that meets the MPC standard should work with any Windows program that supports sound.

If you haven't already bought a multimedia PC or upgraded your PC with a multimedia upgrade kit, you should consider only MPC Level 2 upgrade kits. The Level 2 kits include a sound card with 16-bit sampling and a double-speed CD-ROM drive. The 16-bit sound card will simply improve the quality of your sound, but the double-speed drive is absolutely necessary to handle today's more demanding CD-ROM titles. Just weeks after the MPC Marketing Council introduced the Level 2 specifications, Creative Labs announced its first Level 2 package, called the Sound Blaster DigitalEdge CD.

The DigitalEdge CD package includes Creative Labs' top-of-the-line sound card, the Sound Blaster 16 with Advanced Signal Processing (ASP). The ASP chip functions as a coprocessor and will allow you, in the future, to add QSound and other special audio features. In keeping with the Level 2 specs, the Sound Blaster 16 ASP offers 16-bit sampling, which gives you sound that's theoretically as good as an audio CD (theoretically, because interference from the motherboard and adjacent cards can degrade the sound). Along with the usual CD-ROM, joystick, MIDI, audio-in, and audio-out connectors, the Sound Blaster 16 ASP includes an add-in connector for the Wave Blaster, a General MIDI daughterboard that costs a very reasonable $249.

Also in keeping with the MPC Level 2 specs, the CD-ROM drive is a double-speed drive (300K-per-second throughput) with an access time of 350 ms (the specs require a rate of 400 ms or faster) and is multisession Photo CD compatible. Despite its speed, the CD-ROM drive doesn't require a caddy—you place the CD-ROM directly into the motorized tray, just as you would place an audio CD into a standard CD player. Another nice feature is the embedded cleaning brush, which removes the dust from the drive's lens each time you load a disc into the drive. On the downside, the DigitalEdge CD drive isn't a standard SCSI drive, unlike most other CD-ROM drives. That means your choices will be limited later if you decide to upgrade your CD-ROM drive or switch to a sound card from a company other than Creative Labs.

Creative Lab's Sound Blaster DigitalEdge CD

These days, just about every multimedia upgrade kit comes with a bundle of CD-ROM–based and disk-based applications. The DigitalEdge CD's bundle includes Microsoft Works for Windows, Microsoft Bookshelf, The Software Toolworks Multimedia Encyclopedia, Macromedia Action, Authorware Star, Aldus PhotoStyler SE Photo-CD access and imaging software, a microphone, and speakers. As far as bundles go, this one is above average. Microsoft Works is especially useful for someone just starting out, Bookshelf is a terrific CD-ROM reference, Action and Authorware are powerful multimedia presentation and authoring programs, and few upgrade kits include a microphone and speakers.

The audio utilities in the package are especially strong. The most interesting utility is VoiceAssist, a Windows-based speech recognition program that lets you use voice commands to launch and control just about any Windows application. Unlike the speech recognition program that ships with the Media Vision sound cards, VoiceAssist lets you add your own application-specific commands.

You also get SBTALKER for DOS and Monologue for Windows, two text-to-speech programs; WaveStudio, a Windows-based application that lets you record, play, and edit 8-bit and 16-bit WAV files; Creative Soundo'LE, a Windows-based application that lets you record and play back WAV files in other applications using OLE (Object Linking and Embedding); Windows Mixer, an onscreen mixer that controls the levels of your audio sources; and much more.

Many factors go into choosing the best multimedia upgrade kit. If you're looking for an MPC Level 2 package at an excellent price, take a good look at the Sound Blaster DigitalEdge CD. The ability to upgrade the sound card to General MIDI, the caddyless CD-ROM drive, and the strong audio utilities make it a terrific package.

Creative Labs
(408) 428-6600
$999

Circle Reader Service Number 550

PAGAN

Ultima VIII™

AVATAR™, YOU'RE NOT IN BRITANNIA ANYMORE!

Foiled by your defense of Britannia, the evil Guardian transports you to a world already under his dominion. Now you must confront alien realms and powerful new enemies in a battle without allies. But wait! Perhaps more has changed than just the battlefield . . . ?

- Incredibly smooth and lifelike animation — 400 frames of art per character (1200 frames for the Avatar) and *10 times* the art of any previous Ultima!
- A new, more natural perspective.
- Compatibility with EMS, XMS and all other common memory management systems.
- Twice as many frames per second, producing a richer, faster story in this luxuriously detailed world!

Actual screens may vary.

ORIGIN®
We create worlds®

An Electronic Arts® Company

P.O. BOX 161750 AUSTIN, TX 78716

Look for the new *Pagan* Clue Book!

Pagan and Avatar are trademarks of ORIGIN Systems, Inc. Ultima, Origin, and We create worlds are registered trademarks of ORIGIN Systems, Inc. Copyright © 1993 ORIGIN Systems, Inc. Electronic Arts is a registered trademark of Electronic Arts. For IBM PC and 100% compatible systems.

Available at a software retailer near you, or call 1-800-245-4525 for MC/Visa/Discover orders.

Circle Reader Service Number 160

PRODUCTIVITY CHOICE

This flexible spreadsheet package offers a new, more efficient way of organizing information.

Stephen Levy

IMPROV FOR WINDOWS 2.1

You may never have thought it possible, but there's a whole new way of working with spreadsheets. With Improv for Windows, the new superstar from Lotus, gone are the traditional spreadsheet rows, columns, and cells. In their place you'll find items and groups—and a more efficient way of using and looking at data.

Improv offers a tremendous advantage to those who need more than an electronic version of a paper worksheet. Because of the way it organizes data, Improv is perfect for those who need to organize the same information in a variety of ways. It's also appropriate for people who need to make presentations. By using Improv to create different views of the same data and to place charts created from the data as views, users can actually create a sort of slide show with their data.

With Improv, you have to begin thinking in terms of items and groups. An item consists of a name and all the cells associated with that name. Improv uses the term *item* to describe both rows and columns for the location of data. If you're accustomed to the traditional spreadsheet structure, this can be a bit confusing until you realize that an item and all of its related cells are not fixed in any row or column.

You also have to be concerned with the concept of dynamic placement of data. In traditional spreadsheets, the data can be dynamic, but the structure of the worksheet is static. With Improv, the data and the placement are both dynamic; that is, you can easily present the information in different ways without rebuilding the entire worksheet. And you can save each of your views within the same worksheet.

This dynamic views function is a powerful tool and is surprisingly simple to use. Imagine a worksheet that lists income, expenses, and profits for a company by regions. These figures are listed by month for each region, so this worksheet would show you the profit per region per month. With Improv, you can easily and quickly create a second view that groups the regions together by month, allowing you a quick comparison of the regions' income, expenses, and profit. The data for each of the items stays together in each view. No matter how you move the categories around, each item's data always remains together. And charting this same information is as simple as selecting the Create Chart option from the menu. Being able to manipulate the data in a worksheet is very handy should you need to present information one way for the sales and marketing department and another way for the accountants.

Improv's paging feature offers another unique way of organizing data. It allows you to highlight specific data and still have other information at your disposal. In our example above, we could easily move the Income/Expense/Profit category into the paging position. This would mean that only one of the three items (income, expenses, or profits) for each of the regions would be displayed at a time. To see any of the other items, you'd just click on the page arrow. Thus, the paging feature allows you to isolate the data you want to emphasize and still be able to page through other information if necessary. You could likewise isolate the months, paging through the data one month at a time. Improv's paging feature is not just interesting; it's also an in-

valuable timesaver if you need to make a presentation that requires specific data to be highlighted for one group and other data to be highlighted for another. All the while, you'll still have other data handy if you need it when you explain ideas or when your listeners request further details.

Items can also be given style attributes. And when you change the layout of the worksheet by moving a category, the styles stay with the items, regardless of how the worksheet is organized. A full complement of formatting options is available, so you can change the text color, size, style, shading, and so forth.

To make your work even easier, Lotus has included a feature called Quick Menus. These menus give you easy access to common editing commands and other pertinent commands. You invoke Quick Menus by pressing the right mouse button; a standard pull-down menu appears at the mouse pointer—right where you're currently working. This helpful and convenient feature further illustrates the effort Lotus made to make Improv both innovative and easy to use.

And the package doesn't stop there. It offers another unique feature—dynamic general formulas. Unlike formulas in other spreadsheets, formulas in Improv are easy to understand. They are expressed in words, not in cell address notation. A formula such as Profit=Income–Expenses is much easier to understand (and remember) than +E4–F4. Formulas can apply to a range automatically, so copying them over and over again isn't necessary.

Improv is also self-documenting: The formulas are placed in another pane on the screen in words. When you highlight any cell or item that is the result of a formula, that formula is also highlighted. This allows you to see how the result was derived.

Creating formulas is quick and intuitive. There are a number of ways to begin creating a formula, as Lotus has tried to accommodate the different ways users work with spreadsheets. You can use the menus and choose Create Formula, or if you're a traditionalist, you can press the = or + key to start writing a formula. Improv will supply the beginning of the formula, such as Profit=. Then all you need to do is click on the appropriate items and the Formula Bar.

Improv also includes all the charting tools that spreadsheet users have come to expect. You have 20 different types of charts to pick from: 9 bar charts, 3 line charts, 2 pie charts, 3 area charts, and 3 mixed charts. Among the assortment are both two- and three-dimensional options. Additionally, all of Improv's charts are dynamic, changing as the data in the worksheet changes. It's easy to create a chart, too: You need only select the data you want charted and choose Create Chart, and it's done.

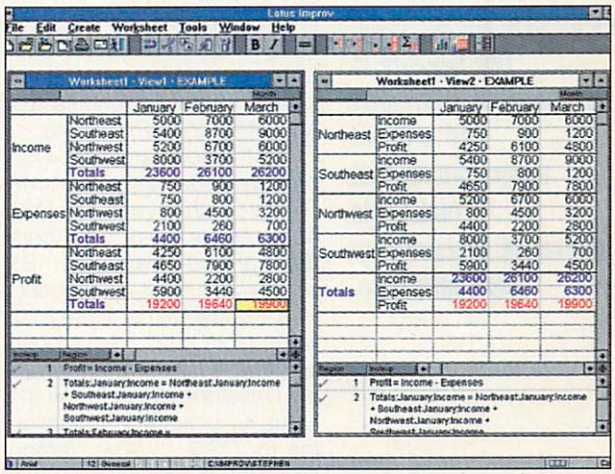
Improv doesn't neglect the powerful, advanced features experienced spreadsheet users will want. For instance, it includes LotusScripts, a tool for building applications based on Improv or extending Improv's functionality.

Of course, an important consideration when you look at any new spreadsheet is how well it imports data from other spreadsheets. Improv imports data easily from other Lotus spreadsheets and from Excel. To import from Quattro Pro for Windows, however, you'll have to save the Quattro Pro file in a format that Improv can understand, such as 1-2-3. You can also import ASCII text files, although the imported text might need some work. Imported spreadsheets help the user of traditional spreadsheets feel right at home by using row and column numbers and letters as item names.

Lotus Improv for Windows 2.1 provides the software market with a unique set of capabilities for building, viewing, and analyzing data. It offers exceptional flexibility for displaying data. Spreadsheet users might find in Improv a new tool that will make their tasks quicker and easier. Those who often have to make data presentations will find Improv meets their needs. Lotus is to be commended for moving spreadsheets a big step forward. Improv's new, easy, and intuitive approach to data is long overdue. ❐

Circle Reader Service Number 391

IBM PC or compatible (20-MHz 80386SX or faster), 4MB RAM (6MB recommended), VGA, Windows 3.1, hard drive with 12MB free, mouse recommended—$495



LOTUS
55 Cambridge Pkwy.
Cambridge, MA 02142
(800) 343-5414

PERSONAL PRODUCTIVITY

Bradley M. Small

THE SUPPORT FOR OS/2 2.1

Last month, we took a close look at the power of OS/2. This month, we'll look at something equally important: third-party support for OS/2.

Third-party support and compatibility are major concerns of users considering OS/2. The industry is responding with ports and original programming that make this operating system even more attractive.

As we showed last month, OS/2 is highly compatible with Windows 3.1. The million-dollar question is how long OS/2 will be able to maintain Windows compatibility. IBM and Microsoft had a contract that involved each company's having access to the other's source code. This contract expired in September 1993. IBM will continue to be able to use the technology of 16-bit Windows (Windows 3.0 and 3.1) forever but will not have access to 32-bit Windows code (Windows NT) or any future version of Windows unless IBM and Microsoft renegotiate.

On the software side, OS/2 provides potential for growth. To start with, over 1700 OS/2 applications exist, both commercial and shareware. IBM will provide a list on request.

Will software continue to be written for OS/2? Peter Cohen, spreadsheet PR manager of Lotus Development, told me that Lotus is committed to developing for OS/2. "We've demonstrated this commitment with the [OS/2] products that we've delivered over the last few months." Lotus has released 32-bit OS/2 versions of cc:Mail, Lotus 1-2-3 2.0, Freelance Graphics, and Lotus Notes. And by the time this column goes to press, Lotus will have released Ami Pro for OS/2, making it the first company to have a full suite of OS/2 desktop applications.

WordPerfect has released and is shipping WordPerfect 5.2 for OS/2. It supports all of the features of the current DOS and Windows versions, and it comes with a 32-bit version of Grammatik for OS/2.

In the OS/2 version, WordPerfect adds the document summary to the file's detail view. There are other important features like drag-and-drop printing and document registration that give it advantages over other versions of the product.

WordPerfect for OS/2 is a Mirrors port of the Windows version. Mirrors is a library used for porting existing Windows apps to 16-bit OS/2. Since the port is 16-bit rather than 32-bit, there is a performance hit. However, this product is intended as an interim solution until the full 32-bit 6.0 version is developed sometime in 1994.

Another important OS/2 developer is DeScribe, maker of the OS/2 word processor of the same name. DeScribe is a 32-bit product boasting many of the same features as the high-end DOS and Windows word processors and a few special features all its own. DeScribe has been available for OS/2 since version 1.1.

Hilgraeve has the top-selling communications product for OS/2, HyperAccess 5 3.1. It boasts network support (giving you the ability to use shared modems over a LAN), all of the popular download protocols, scripting with script learning, and many other features. Using host mode, you can control the host computer and even run DOS and OS/2 text-mode applications over the telephone lines from a remote computer.

Stac Electronics, the creator of Stacker, has released version 3.1 for OS/2 FAT systems. It provides on-the-fly file compression. It comes with both OS/2 and DOS drivers. Currently, OS/2 can't read PC-DOS or DOS 6 compressed volumes. Stac Electronics offers a special package for owners of DOS 6 that includes a conversion utility to convert DoubleSpace volumes to Stacker volumes which are readable under both DOS and OS/2.

Soft Touch Systems makes a set of file- and disk-related tools called the GamaTech Tools. This is an essential package for OS/2. It handles both HPFS (the optional High Performance File System for OS/2) and FAT (the standard DOS file system). These utilities optimize, repair, and provide general maintenance for files and disks. They also provide file locking, system protection against boot-sector modification, and more.

Of course, Borland International has released an excellent OS/2 2.0 C/C++ compiler (a COMPUTE Choice Award finalist). Borland is currently working on an upgrade for the added functionality of OS/2 2.1. With the popularity of Borland development tools, more applications should soon appear as a result of Borland's interest in the operating system.

An indispensable book on getting the most out of OS/2 is *OS/2 2.1 Unleashed* by David Moskowitz, David Kerr, and others (published by Sams, 11711 North College, Carmel, Indiana 46032).

The major drawbacks of OS/2 are the question of future Windows compatibility and the hardware demands. With Windows-to-OS/2 ports becoming commonplace, perhaps compatibility isn't so much of an issue anymore.

On the hardware front, OS/2 requires at least a 386 and 4MB of RAM as well as 15MB to 40MB of disk space for installation. This is the minimum that will provide you with all of OS/2's capabilities. As you add more memory, you'll see more speed and efficiency. When you consider the requirements for Windows NT, OS/2's requirements are modest by comparison. ❐

With COMPUTE's SharePak, You'll

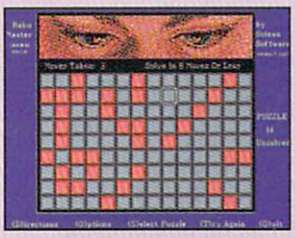
SHARE IN THE SAVINGS!

SAVE TIME
We carefully select and test all programs for you

SAVE MONEY
Each disk includes two to five programs for one low price

SAVE KEYSTROKES
Our free DOS shell lets you bypass the DOS command line

January's SharePak disk $1.99 per program!



Luck won't help you with Raku Master.

Give your logic skills a fun workout in MiceMen.

Raku Master
Raku Master is a pure logic game that will challenge all serious puzzle lovers. The object of the game is to flip all the red tiles back to gray in as few moves as possible. You can flip up, down, or diagonally, starting with any tile. The Raku Master will tell you the exact number of moves in which he can solve the puzzle. If you don't believe it can be done, let him show you the solutions for the first 10 of the 50 puzzles.

MiceMen
MiceMen is another exciting, fun-filled, animated strategy game. Push and pull columns of cheese blocks to get your mice to the other end of the maze before the computer opponent beats you to the punch.

Aquanoid
If you're craving pure arcade excitement, give Aquanoid a try. This game is similar to the arcade classics Breakout and Arkanoid, so you'll need a sharp eye and a quick hand to get the high score.

COMPUTE's SharePak disk contains the best of shareware—handpicked and tested by our staff—to complement this month's focus. You'll sample entertainment, learning, and home office software at a great savings. Each SharePak disk includes two to five programs plus complete documentation for one low price:

$5.95 for 5¼-inch disk
$6.95 for 3½-inch disk

For even more savings, Subscribe to SharePak and receive COMPUTE's SuperShell FREE!

For a limited time, you can subscribe to COMPUTE's SharePak and save more than 37% off the regular cost of the disks—plus get COMPUTE's SuperShell **FREE.** With a one-year paid subscription, you'll get

- A new 3½- or 5¼-inch disk delivered to your home every month
- Savings of over 37% off the regular disk prices
- Advance notices of COMPUTE special offers
- COMPUTE's SuperShell at no additional cost!

Subscribe for a year at the special rates of $59.95 for 5¼-inch disks and $64.95 for 3½-inch disks—**and get COMPUTE's SuperShell FREE!**

COMPUTE's SuperShell requires DOS 3.0 or higher.
Disks available only for IBM PC and compatibles. Offer good while supplies last.

For Single Disks
Please indicate how many disks of each format you would like:

_____ **5¼-inch at $5.95**

_____ **3½-inch at $6.95**

_____ **Subtotal**

_____ **Sales Tax (Residents of NC and NY, please add appropriate sales tax for your area. Canadian orders, add 7% goods and services tax.)**

_____ **Shipping and Handling ($2.00 U.S. and Canada, $3.00 surface mail, $5.00 airmail per disk)**

_____ **Total Enclosed**

Subscriptions
I want to save even more! Start my one-year subscription to COMPUTE's SharePak right away. With my paid subscription, I'll get a FREE copy of COMPUTE's SuperShell plus all the savings listed above.

Please indicate the disk size desired:

_____ 5¼-inch at $59.95 per year _____ 3½-inch at $64.95 per year

For delivery outside the U.S. or Canada, add $10.00 for postage and handling.

Important Notice: COMPUTE's SharePak is not associated with COMPUTE's PC Disk. Please order SharePak separately.

Name _____

Address _____

City _____

State/Province _____ ZIP/Postal Code _____

Total Enclosed _____

_____ Check or Money Order _____ MasterCard _____ VISA

Credit Card No. _____ Exp. Date _____

Signature _____
(Required)

Daytime Telephone No. _____

Send your order to COMPUTE's SharePak, 324 West Wendover Avenue, Suite 200, Greensboro, North Carolina 27408.

All orders must be paid in U.S. funds by check drawn on a U.S. bank or by money order. MasterCard or VISA accepted for orders over $20. This offer will be filled only at the above address and is not made in conjunction with any other magazine or disk subscription offer. Please allow 4–6 weeks for delivery of single issues or for subscription to begin. Sorry, but telephone orders cannot be accepted.

1/94

ART WORKS

Robert Bixby

IN CAPTIVITY

There are a number of options for capturing a screen either in Windows or in DOS. The quickest and easiest way to save a Windows screen is to press PrintScreen in Windows. That saves the entire Windows screen to the Clipboard. You can then save it as a CLP file or paste it into Windows Paintbrush (the technique for this is covered in "Built-in Windows Power Tools" in the November 1993 COMPUTE), edit it, and then save it as a BMP or a PCX file. You can save only the active window by pressing Alt-PrintScreen.

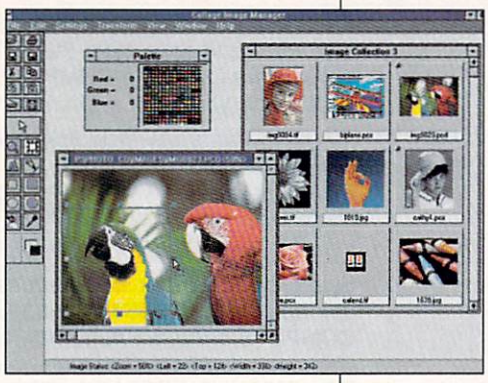


Image cataloging adds another level of convenience to Collage Complete.

Clif Karnes has written a program called Clip-In (which he may soon release as shareware) that will capture to the Clipboard individual elements of the Windows screen, such as a scroll bar, a dialog box, an icon bar, or an area you define yourself.

With so many alternatives available, commercial publishers have to go a long way to earn your dollar.

Collage Complete (Inner Media, 60 Plain Road, Hollis, New Hampshire 03049; 603-465-3216; $199) is the successor to the fast and flexible Collage Plus. My only complaint about Collage Plus: It was difficult to get a look at the pictures captured. Collage Complete eliminates that problem by providing not only a viewer and editor but also an image catalog that displays thumbnails of images. You can also capture from DOS, edit pictures, and convert images individually or as a batch. Collage Complete comes with a two-disk sample clip art collection.

Collage Complete for Windows has two separate icons: one for the capture program and one for the image-editing and -cataloging program. You have the option of capturing the active menu, title bar, menu bar, client, or window, the whole screen, custom coordinates, multiple selections, or last coordinates. You can set the timer from 0 to 300 seconds. You can capture images to any of ten formats (including TIF, PCX, BMP, and GIF) in any of the following color levels: 16 gray scale, 256 gray scale, 16 colors, 256 colors, 16 million colors, or monochrome. It supports TWAIN, so you can use your TWAIN-compliant scanner to scan images directly into Collage Complete.

Pizazz Plus 4.0 (Application Techniques, 10 Lomar Park Drive, Pepperell, Massachusetts 01463; 508-433-5201; $149) has the simplest collection of tools under Windows of the three, but it can save to an incredible range of formats, most identified by applications, for which the image is custom formatted. It also has a recorder that remembers the transformations you perform on a graphic and can reproduce them on another graphic. The macro (called a recipe) can then be saved to disk.

Pizazz's DOS capture and manipulation program is the most complete, but its interface is a little overwhelming.

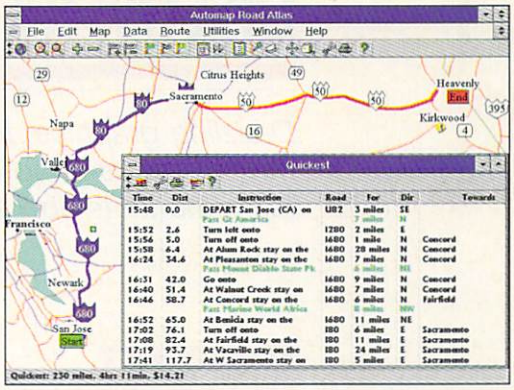
Graphics Tools (Delta Point, 2 Harris Court, Suite B-1, Monterey, California 93940; 408-648-4000; $99.00) offers a slightly expanded features list including autotrace and a bonus CD-ROM that contains 700 pieces of clip art, 100 photographs, and demonstration versions of other Delta Point programs. Delta Point is known for its charting program, Delta Graph and FreezeFrame ($69.95), another image-capture and file-conversion application.

Graphics Tools will capture and convert among more formats than Collage Complete, but it gives less control over the image as it is captured. The image is captured as a TIF file, for example, but you cannot tell it to capture in monochrome or 16 million colors. You can capture freehand, a window, specified coordinates, an area, or full screen. If you elect to capture a window, you can refine the capture to a menu, an icon, or a dialog box by clicking on the object you want to capture. The only way to capture a DOS screen with Graphics Works is from within Windows.

Whatever you choose, you'll find that graphics manipulation has entered an era of extreme interoperability.

Have a DTP tip you'd like to share? Let me know about it by calling (900) 884-8681, extension 7010203 (sponsored by Pure Entertainment, P.O. Box 186, Hollywood, California 90078). The call costs 95 cents per minute, you must be 18 or older, and you must use a touch-tone phone. Or write to "Art Works" in care of this magazine. And if you don't have a tip, call to let me know what you're up to, what software you're using, and how I can be of assistance. ❐

vs.

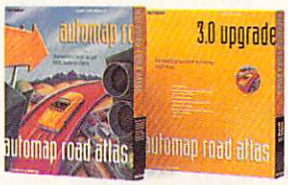


Smooth out your travel planning with Automap.

Don't let bulky, worn-out maps put a crimp in your plans. Simply load the new version of *Automap® Road Atlas* for Windows or DOS onto your PC. In seconds, Automap will help you quickly and simply plan the ideal route to more than 120,000 places in the USA and Canada. You'll save time, money, and hassle.

Find places of interest along your route and calculate gas consumption with the new version 3. Or expand your horizons with two exciting new add-ons: Check out more than 8,000 great destinations overseas with *Automap Destination Europe*. And explore nearly 600 North American ski resorts with *Automap Destination Ski*.

Automap Destination Series
More Places to Go



Automap Road Atlas
The Easiest Way to Get From Here to There

Automap puts you in the driver's seat for planning travel. Just select how you want to drive—lead-foot or laid back. Ask for the quickest, shortest, or alternative routes. Press a button and print out detailed maps and directions. Automap is fast, fun, and *affordable*. So drive straight to your nearest software retailer today and ask for Automap Road Atlas, or call **1-800-440-MAPS.**

AUTOMAP®

Automap, Inc. 1309 114th Avenue SE, Suite 110, Bellevue, WA 98004. Tel: (206) 455-3552 Fax: (206) 455-3667

Automap Road Atlas SRP $99.95. Upgrade to Version 3.0 SRP $39.95.
Automap Destination Europe (SRP $49.95) and Automap Destination Ski (SRP $29.95) are add-on products to Automap Road Atlas.

Requirements: Windows version: Microsoft Windows 3.0 or above in standard or enhanced mode. DOS version: DOS 3.0 or above, 640K RAM. Destination Series add-ons: Work with any copy of Automap Road Atlas Version 3.

© Copyright 1988-1993, NextBase Ltd. Automap is a registered trademark of NextBase Ltd.

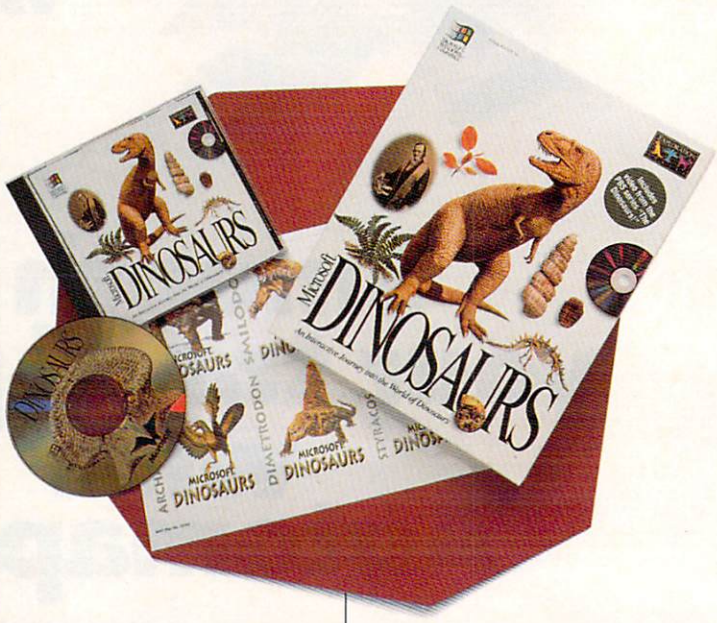
Circle Reader Service Number 137

DISCOVERY CHOICE

Dazzling graphics, full-motion animation, and crystal-clear sound effects bring dinosaurs to life as you learn the facts about these fascinating ancient creatures.

Scott A. May

MICROSOFT DINOSAURS



They say everything old eventually becomes new again. It must be true, because you can't get much older, yet more in fashion, than dinosaurs. From children's playful TV pals to big-screen terrors, these ancient creatures seem to fascinate us more than ever. Despite the renewed interest, however, myths and misconceptions persist. Microsoft helps bridge the gap between paleontology and pop culture with Dinosaurs, a brilliant interactive journey that takes you back in time.

True to its larger-than-life subject matter, this multimedia Windows CD-ROM packs a huge amount of information—nearly 400MB, including full-motion video, fantastic audio, and a gallery of beautifully scanned artwork. The main program weighs in at over 200MB, featuring a dazzling display of more than 1000 illustrations, 200 hypertext articles, and 800 pop-up windows. For dinosaur lovers, about the only thing better than this would be living next door to New York's American Museum of Natural History.

Big numbers are impressive, but they don't guarantee a good program. Atop this mass of megabytes sits a fabulous interface that allows the curious to explore in four ways: Atlas, Timeline, Families, and Index. For the timid, there's also Guided Tour, which is hosted by "Dino" Don Lessem, founder of The Dinosaur Society and editor of the *Dino Times*. His soft, folksy style uses humor to hook our curiosity and expert knowledge to keep us following his lead on 16 different tours. You can abandon a tour at any time if you find a subject that piques your interest. Unfortunately, there are no video bookmarks, which would allow you to quickly return to specific points of interest.

Atlas takes you where dinosaurs roamed, areas divided into six geographic regions: North America, South America, Europe, Africa, Asia, and Australia. Learn how each species adapted to its particular climate and social order. A fascinating sidebar, The Shifting Earth, offers a crash course in plate tectonics. Here you'll see how land movement created new continents, restricting animal migration and possibly dooming some species to early extinction.

In addition to the interesting sidebars that offer explorers more information, most of the program's screens sport special hot spots—hypertext links to additional information. Click next to Dimetrodon's sail to learn how this "reptile radiator" helped regulate the giant lizard's body temperature. Branch off yet again to discover creatures with similar radiator sails, such as the warm-blooded Spinosaurus. Like any good reference, these hot spots allow your imagination to wander. There are no wrong moves or dead ends, and to backtrack, you simply click on the back icon.

Timeline begins with a graphic representation of the earth's history, divided into four major eras: Precambrian, Paleozoic, Mesozoic, and Cenozoic. Each era is then broken into small chunks of time, called periods. You'll learn that all dinosaurs lived during the Mesozoic era—divided into the Triassic, Jurassic, and Cretaceous periods—roughly 160 million years, yet merely a drop in the cosmic bucket. When viewing such a grand scale, you can't help but be humbled by man's meager stake on terra firma. The Mesozoic era holds many hypertext links to the Atlas section, particularly the Cretaceous period, when dramatic plate movement and rising seas helped isolate many species. The end of this era saw the end of the dinosaurs. The

program offers several dramatic theories to explain the cause of their extinction, as well as clues to some species that may have survived.

The section on families proves especially interesting for fledgling dinosaur explorers. It teaches the difference between the two main orders of dinosaurs—saurischians and ornithischians—designated, remarkably, by hip structure. You'll also discover that some creatures often mistaken for dinosaurs were actually reptiles, such as the flying Pterodactylus and Quetzalcoatlus. The who's who of dinosaurs is in this section, including the meanest (Tyrannosaurus Rex, of course), biggest (the plant-eating Sauropods), and smallest (the chicken-sized Compsognathus), among others.

Are you tongue-tied by these strange, multisyllabic names? You're not alone. That's why the designers included spoken pronunciations, one of the program's best features. Click on the speaker icon next to particular words or phrases, and you'll hear them pronounced in crystal clarity. Cindy Shrieve provides the voice; she also speaks the introductions to sidebar stories.

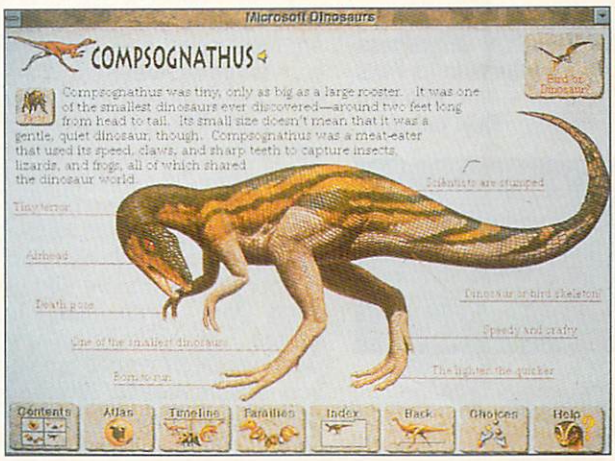
The fourth navigational option, Index, allows speedy access to every major article and species. Entries are both alphabetized and graphically displayed. Browsing through Index is also an excellent way to find articles on subjects you might otherwise miss, such as the fascinating art of skeletal reconstruction.

The program's multimedia highlight—six full-motion mini-movies—was added almost as an afterthought just prior to release. Culled from the PBS series "The Dinosaurs," most feature quality animated watercolors, sound effects, and narration. The centerpiece film, The Hunt, was taken from Phil Tippett's 1984 work, *Prehistoric Beasts*. Filmed with stop-motion models, intricate backgrounds, and horrific sound effects, this exquisite animation depicts a deadly encounter between a Triceratops and a T. rex.

The program detects your current Windows graphics mode—either 16- or 256-color VGA—and loads the appropriate version. As you'd expect, the 256-color VGA graphics are stunning, from the stone-textured icons to the scanned artwork and digitized photos. The big surprise is the outstanding quality of the 16-color VGA version: Apart from only a slight loss of detail due to the dithering process, the graphics are just as attractive using a 16-color palette. This is especially good news for users with unaccelerated video cards, as well as those who simply don't want to switch video modes to run the program. Somewhat of a system hog, the program task-swaps well but prefers your system's undivided attention. Running resource-heavy applications in the background will slow Dinosaurs to a crawl.

Microsoft forgoes a printed manual in favor of online graphic help screens. Overview Movie is a special feature that helps new users; a talking tour of the program's main functions, it's delivered in the humorous style of a vaudeville revue. Another helpful option is the ability to print virtually any screen or active window, in either gray scale or full color. The overall quality is excellent, but because these are screen dumps, graphics will print better when they're displayed in 256-color mode.

Believe it or not, there's more: Attached to each dinosaur profile is a Fact Card, a printable index card containing a full-color picture, an information chart, an interesting fact, and a scale drawing. And there's the dinosaur art gallery, complete with 50 high-quality pictures that can be exported via the Clipboard or turned into wallpaper for a Windows background. There are even two built-in screen savers, your choice of stomping dinosaur feet or dinosaur heads. Finally, a slide-show option displays randomly selected program screens for those who simply can't decide where to begin.



Both highly entertaining and educational, Microsoft Dinosaurs is a wonderful blast from the past. The next time you're asked what the storage capacity of a CD-ROM is, just smile and say, "About 160 million years." ❐

Circle Reader Service Number 392

IBM PC or compatible (80386SX compatible), 4MB RAM, 16- or 256-color VGA, hard drive with 2.5MB free, MPC-compliant CD-ROM drive, mouse, MPC-compatible sound card, Windows 3.1 or higher—$79.95

MICROSOFT
One Microsoft Way
Redmond, WA 98052-6399
(800) 323-3577

GAME INSIDER

Shay Addams

THE YEAR OF THE SIM

MicroProse, acquired recently by Spectrum HoloByte, has quietly killed its animated adventure game department. In early fall it shipped Bloodnet, a role-playing game from the Paragon design team, but Dragonsphere will be the last such quest, and the company is also dubious about a follow-up to Darklands.

MicroProse will return to producing the kind of games that made it famous: simulations such as F-14 Fleet Defender, which should be on the shelves now, and strategy games like Sid Meier's Civilization. The Civil War sim Meier was working on has been put on hold until at least the fall of 1994 while he finishes CPU Bach for the 3DO. And he may decide to do an add-on for Civilization (or even a brand-new version) first—maybe something like Civilization in Space. MicroProse's new Coaches Club Football simulation and a space strategy game called Masters of Orion should already be in the stores.

MicroProse returns to its roots with F-14 Fleet Defender.

More sims. Simulations continue to multiply, perhaps because so many kinds of games—planes, tanks, city builders—fall into this category. One of the most unique is Detroit, Impressions' ultimate automobile simulation. Detroit re-creates various aspects of the automobile industry by providing the tools for designing and mass-producing your own car. Marketing plays an important role in this resource-management challenge.

Interplay is doing CD-ROM versions of Maxis's SimCity, SimEarth, and SimAnt. The company is revamping each game extensively and adding digitized video. A 40-person film crew is currently shooting footage for the CD-ROM version of SimCity, which is due out in the spring. The SimAnt CD-ROM should be on the shelves now. Interplay also released a CD-ROM version of Alone in the Dark recently, and at press time the company was saying that it hoped to ship an Interplay tenth-anniversary CD-ROM with Wasteland and nine more of its biggest hits by Christmas. Stonekeep, Interplay's landmark role-playing game, is now set for a spring release.

Not a simulation. The computer game industry is a bizarre one. You'd expect the hottest title from a company called Strategic Simulations to be a simulation, or at least a strategy game. But it's actually the latest release in the AD&D role-playing series, an all-new world set in the time of *The Arabian Nights*. Al Qadim is the name of the fantasy world, and Genie's Curse is the first role-playing game that takes you there. Unlike most AD&D games, it's a one-character quest. Your character is pregenerated, allowing you to jump right into the action.

You can get a batch of adventures in Legend Entertainment's Spellcasting Party Pak, which contains all three of Steve Meretzky's wacko Spellcasting games. Two recent Legend adventures, Eric the Unready and Gateway 2, have been released on CD-ROM. For something new from Legend, try Companions of Xanth, which sports a new, easier-to-use interface. Legend's Bob Bates calls the adventure, based on the works of popular fantasy writer Piers Anthony, the company's "most beautiful" adventure.

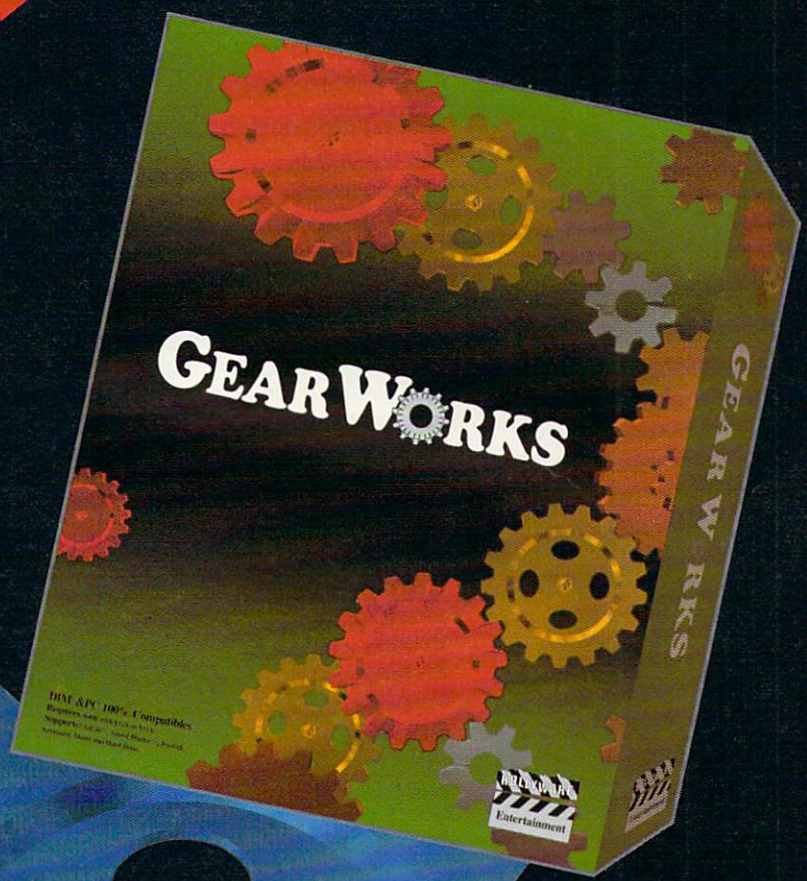
Better late than never? You may have noticed that a few of the games I reported on in recent columns have inexplicably missed their ship dates—not an unheard-of event in the world of computer games, certainly, but that's no excuse for less-than-accurate coverage by a game insider such as myself. Sir-Tech has rescheduled Jagged Alliance from last fall to this spring, for instance. The second title in its Realms of Arkania series, Star Trail, is now planned for January or February. LucasArts' The Dig, Brian Moriarty's graphic adventure, is now set to hit the shelves in late spring. (I did learn that the mysterious Hollywood type involved in the project is none other than *Jurassic Park* producer Steven Spielberg. After deciding that a story he wanted to produce for the screen might work better and cost less as a computer game, he teamed up with Moriarty at LucasArts.) However, last month, when I said TIE Fighter would dock in time for Christmas, that was *my* mistake—I confused it with B-Wing, the X-Wing mission disk. TIE Fighter is a spring product.

Buttoned down for a dogfight. The most effective flight peripheral I've seen in years is the new CH Flightstick Pro. Based on the classic CH Flightstick, it's armed with three extra buttons atop the stick and a coolie hat that serves as a four-way switch. All the advanced flight sims support the new buttons for game-specific functions such as dropping bombs or switching guns. Most of them use the coolie hat to shift between views from the cockpit. I've seen similar features on more expensive joysticks that weren't as well engineered, and I highly recommend the Flightstick Pro. (The extra buttons require a two-stick game card; many inexpensive multifunction cards only support one stick.) If this stick doesn't improve your scores, you may as well go back to Pong. ❐

Over one hundred play areas to test your reflexes and intelligence.

GEAR WORKS!

This puzzle game will keep your gears spinning!



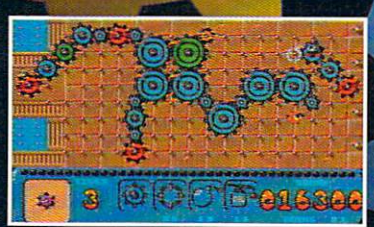
Gear Works is the most unique puzzle game to hit the market in years. In Gear Works you will connect gears of various sizes and colors together in order to transform Twelve Wonders of the Ancient and Modern world into time pieces, while racing against time and friction. Watch out for the Pottins, two gremlin like creatures, that will torment you by rusting the gears and breaking off the mounting pegs.

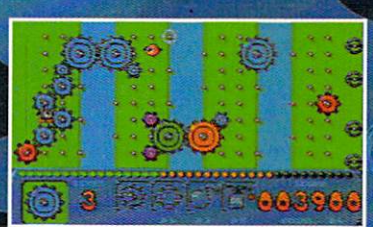
Game features: Various gear types, over one hundred puzzles to solve, bombs to blow up incorrectly placed gears and a gun to shoot those pesky Pottins off the play area.

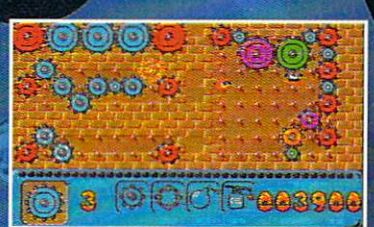
Available in IBM PC and Amiga computers.

Check your local retail stores for Jonny Quest®- *Curse of the Mayan Warriors* and other HOLLYWARE Games.

Circle Reader Service Number 117







HOLLYWARE Entertainment

HOLLYWARE ENTERTAINMENT P.O. Box 9148 Marina Del Rey, Ca. 90295 (310) 822-9200

See your Local Software Retailer or call HOLLYWARE Entertainment. Copyright © 1993 HOLLYWARE Entertainment, Trademark TM 1993 Sony Electronic Publishing.

ENTERTAINMENT CHOICE

Lead fleets of starships in interstellar battles as you fight to save the Federated Worlds in this realistic space-opera simulation.

Keith Ferrell

RULES OF ENGAGEMENT 2

Can software re-create science-fiction experiences? This is a question that's been addressed by most of the major entertainment software publishers at one time or another. For some publishers, it's *the* question. Omnitrend, for example, has devoted most of its energies over the past decade to creating interactive interpretations of a particular type of science fiction, the space opera. Its latest game, Rules of Engagement 2, may well be the finest science-fiction simulation ever developed.

Space opera is one of the grand traditions of literary science fiction. Like its antecedent, the horse opera, space opera works from several givens. Fleets of mighty starships substitute for the cavalry and the bad guys. Space operas often are set along frontiers, with colony worlds serving the roles played by prairie towns. Climactic battles are preceded by smaller confrontations, the stakes rising with each new conflict.

Of course, horse operas are pretty much restricted to rifles, pistols, and the occasional Gatling gun, while the space opera at its most ambitious can hurl whole solar systems into different continua. *Crashing Suns,* for instance, is the title of one of the earliest space operas.

At its best, space opera is more than just adventure fiction. Good space opera should be good science fiction as well, taking place in a carefully designed and delineated universe that is self-consistent within the bounds of the story that contains it.

Space opera—or what passes for it—has played a large part in the interactive entertainment explosion. And that's not surprising, as space opera has played perhaps the dominant role in all electronic media forms of science fiction. "Star Trek" is essentially a space opera, and the Star Wars saga is little more than that. Interactive space opera has tended to follow the Star Wars pattern: lots of arcade action, speed, bells and whistles, and little attention to or reflection upon what actual interstellar combat might be like.

That sort of reflection and attention is exactly what Omnitrend has brought to its science-fiction simulations. Its simulations follow three separate, though interlocked, tracks, all set within the same universe. One of the Omnitrend series, Universe, deals with interstellar exploration, trade, and settlement. Then there's the Breach series, which focuses on ground-combat troops. And third is the Rules of Engagement group, which puts players in charge of fleets of military starships.

All of the games take place in the same self-consistent universe, and a very strange and dangerous place that is. Like most good science-fiction universes, this one has a history. According to the Omnitrend scenario, over the next century the human race develops faster-than-light travel and begins the colonization of planets in our local galactic area. Humans being a fractious species, factional differences develop, and humanity splits into two groups: the Federated Worlds (you) and the United Democratic Planets (them).

There are also aliens of various levels of malevolence and competence. And, in the best science-fiction tradition, there are remnants of an ancient and very advanced species. This is a remarkably well thought out universe, full of details that lend just enough credibility to suspend disbelief. As illusions go, the Omnitrend universe is quite convincing.

Of the games set in this universe, Rules of Engagement 2 is by far the most ambitious. It's a campaign-oriented game: You start out as a ca-

det and work your way up the ranks, facing larger challenges and commanding more powerful forces with each advancement. A beginner campaign is included, but you'll quickly find yourself facing large combat and command challenges.

Command, not incidentally, figures largely in the game. In the more advanced scenarios, you'll find yourself with whole fleets of ships at your disposal. It's your responsibility to select individual ship commanders from the roster of those available. All the characters have their own traits, competencies, and vulnerabilities—any one of which can affect how they respond to your orders.

Once you embark upon a campaign, you're in the center seat of the flagship, which can be a lowly transport traveling solo or a mighty dreadnought leading a fleet, depending upon the mission configuration. (Actual ship selection is up to you, but each scenario gives you only a certain number of configuration points to spend, which means that you can't get the best ship every time.)

The command interface is a marvel: Not only is it effective and sensible, but it also has a design that serves to enhance the game's illusion. This thing feels like a starship command center.

You're presented with a variety of ship systems: tactical, navigational, communications, damage control, and docking. Within each system are subsystems specific to tasks at hand, such as selecting missiles for combat or loading and unloading cargo. Your monitor screen can be divided into command quadrants, with the quadrants displaying different systems or subsystems within a larger group. Tactical command, for example, gives you access to fire control, defensive shields, positioning relative to the enemy, and more. Included in communications are both transmission and reception. Navigation houses the helm, maps, and long-range sensors. You'll learn quickly which arrangements work best in different situations.

You'll also learn—with luck, rapidly—to coordinate the systems during combat. Often, your enemies are better armed and equipped than you. The simulation gives you the tools necessary to crack each scenario, but it requires you to learn as you go; of course, that further enhances the game's career advancement motif.

If you also play Omnitrend's Breach series, you can interlock the games, moving from Rules of Engagement 2's starship command to Breach's ground-force command as you board and seek to capture enemy installations. The next release of Universe will also interlock with Rules of Engagement and Breach.

Documentation is extensive, thorough, and refreshingly well written. You'll want to pay attention to the breakdown charts of ship and system capabilities; there's information there that will affect your weapons selection and possibly turn the tide of desperate battles.

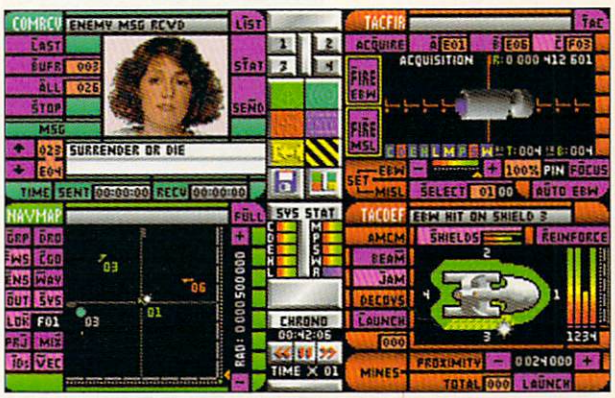
And the battles do get desperate. Systems can be damaged or knocked out; capabilities can be diminished. Allies respond in realtime, and the clock is always running. You may need full power in three minutes, to borrow a cliché from another space opera, but if the simulation runs six minutes before full power is available, you may be out of luck. There are no TV space-opera miracle workers here.

Rules of Engagement 2 is a high-level simulation that demands good equipment. It will run on a slow 80386, but a faster machine makes it sing. (Actually, it talks, if you have sound support.)

Scenario design has become an important pastime for Omnitrend fans, and with Rules of Engagement 2, the company has gone so far as to prepare a special developer's kit, which you can purchase directly from Omnitrend. Additional scenarios for the game are already popping up on bulletin boards and online services.

Rules of Engagement 2 is a serious simulation and a masterpiece of interactive science fiction. Software space opera doesn't get any better than this. It's a game—and a vision of the space-operatic future—that would do Poul Anderson, Jack Williamson, or E. E. Smith proud. ❐

Circle Reader Service Number 393



16-MHz IBM PC 80286 or faster (25-MHz 80386SX or faster recommended), 640K RAM (2MB recommended), VGA, hard drive with 8MB free; supports Microsoft-compatible mouse, math coprocessor, and Sound Blaster, Ad Lib, Roland, and Pro AudioSpectrum sound cards—$69.95

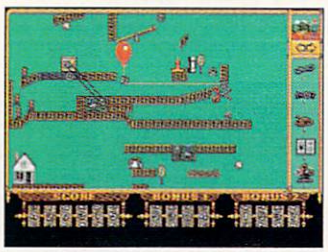
IMPRESSIONS SOFTWARE
222 Third St., Ste. 0234
Cambridge, MA 02142
(617) 225-0500

GAMEPLAY

Denny Atkin

COASTERS AND RUBE GOLDBERG

And now for something completely different! Only computer gamers could find themselves in a rut because they've spent too much time exploring dark dungeons, flying F-16s, and playing professional football. If you want to try something really different, both Disney and Sierra/Dynamix offer breaks from the ordinary. And amazingly, in today's world of 20MB games, each of these games ships on a single high-density floppy.



The Even More Incredible Machine presents you with 160 Rube Goldberg–esque challenges.

Coasting along. Disney's Coaster takes you off the flight line and into an amusement park, but at the speeds and altitudes you'll reach here, you may forget you're not still flying a jet fighter. This program, originally announced last year, is a construction set that lets you build, test, and ride your own roller coasters.

You'll start out in the Coaster Design section, where you can create your ride from scratch or modify one of a number of existing designs on a 640 × 480 VGA screen. You've got straight track, curves, loop-the-loops, and corkscrews to choose from. Sections can be different lengths, they can climb or plunge at angles up to 60 degrees, and they can twist up to 50 degrees in curves. Sections of track can be lifters or accelerators, or they can be equipped with brakes. You'll need a mouse for this section of the program, which has to be one of the easiest-to-use construction sets I've ever encountered.

Track design is fun, but you've got to be careful. One of the most difficult aspects is making sure that the final section of track can actually wrap around and meet the platform again. If you ever created your own track layouts with model trains or electric race-cars when you were a kid, you'll recognize this difficulty—you create what would have been the perfect layout, except there's no way to get the track back to where you started building it.

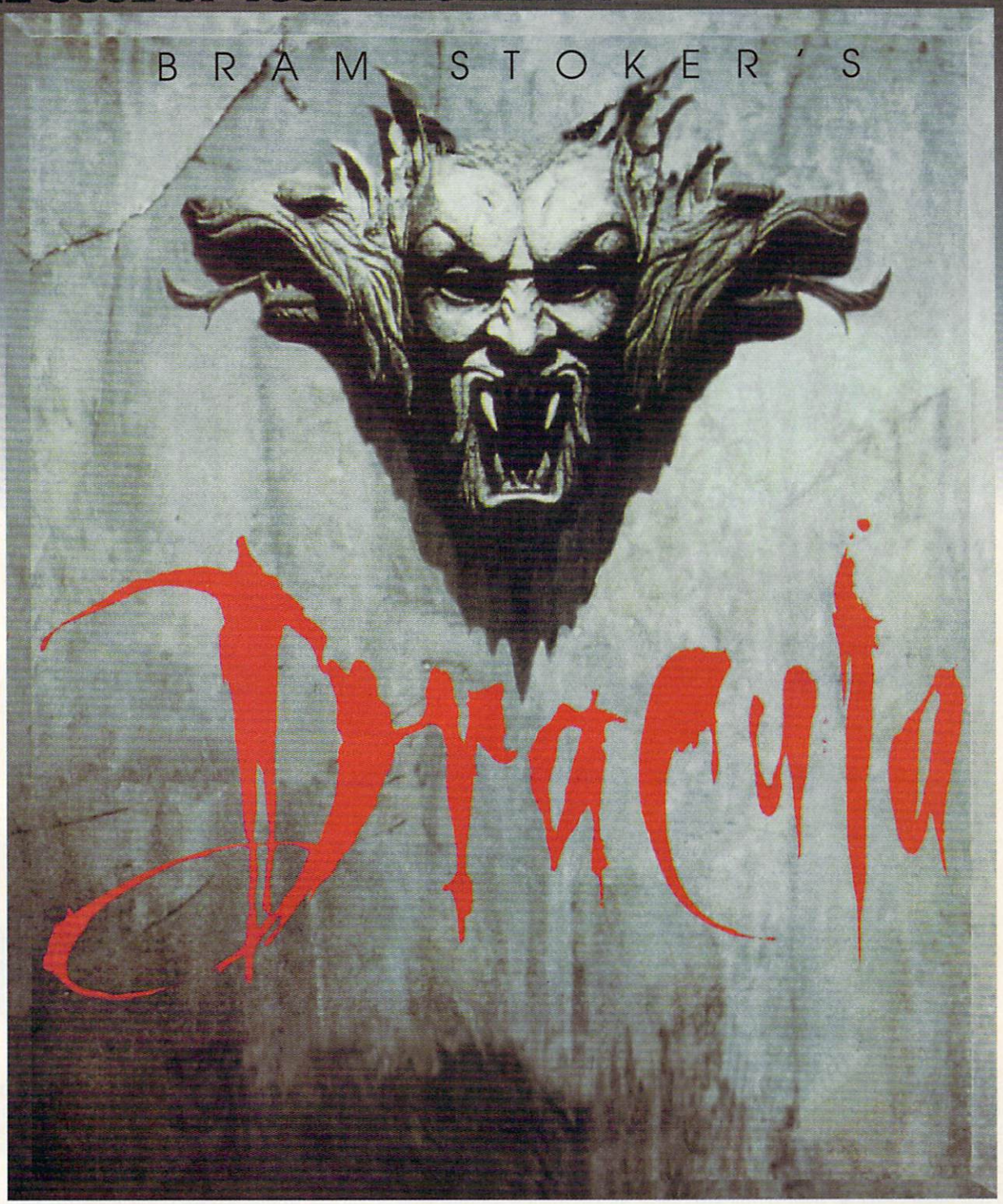
Once your track is laid out, it's off to the Ride screen. Just select Ride from the pull-down menu, and you're in the coaster car. Note that if you haven't installed the upstops, which keep the car from flying off the track, or if your track ends in midair, you won't be able to get anyone to board your coaster. Click the mouse button to launch, and you're in for a wild ride. Fast graphics and realistic sound effects make the ride a fun experience, but it's not very interactive. You do have buttons to accelerate or brake if you find that you haven't quite planned the proper amount of momentum in your coaster design, but that's the limit of interactivity here. Most of the game is in the designing, not the riding. After the ride's finished, you can get opinions on your coaster from a panel of evaluators. These will range from "Well, lasso me to a bronco! That was one of the best trips I've ever had!" to "I've seen better speed bumps at the post office." The Signature screen lets you examine a graph that shows the lateral and vertical g's achieved, maximum speed, longest drop, and other stats.

Once you've perfected your design techniques on Earth, you can try again with moon or Jupiter gravity, which can make for some interesting design problems.

Coaster is a winner in many respects. The only problem is that the graphic updates are too fast on a speedy PC, making loops nothing more than a blur. If you're the type who enjoys building for building's sake—if your fondest childhood memories involve Legos and Tinkertoys—you'll love this little game. It's a bargain at only $24.95.

TIM's back. From Jeff Tunnell Productions comes Sierra/Dynamix's latest puzzler, The Even More Incredible Machine. If you played The Incredible Machine, you know what to expect, as TEMIM offers 160 new levels with everything that made the first game fun. If you're not familiar with the series, TIM and TEMIM essentially put you in the role of Rube Goldberg. You have to create complex, interconnected contraptions to accomplish goals that range from popping balloons to saving a little white mouse from a hungry cat. You connect pulleys, motors, jack-in-the-boxes, ropes, balloons, and many other parts to try to set off reactions that will accomplish your goal. The puzzles range from really easy to, at the end, well, really puzzling. My favorite aspect, though, is that the game is smart enough to let you win even if you pick a solution that may not have been what the programmers intended. Many times, I've solved the puzzles and had parts left over. TEMIM is extremely easy to learn, and both young kids and adults will find hours of enjoyment here. I know I did—I installed TEMIM at 9 p.m. and didn't get to bed until after 3 a.m., and many, many levels of play had passed. ❐

BEWARE,
THE SOUL OF YOUR MACHINE IS IN MORTAL DANGER!



Psygnosis
675 Massachusetts Ave.
Cambridge, MA 02139
(617) 497-7794

If you can't find this game at your favorite retailer call: (800) 438-7794 (GET PSYG) to order your copy today.

Bram Stoker's Dracula™ is a trademark of Columbia Pictures Industries, Inc. © 1992 Columbia Pictures Industries Inc. All rights reserved.

Circle Reader Service Number 241

TRAVEL TO EXOTIC LANDS, MEET STRANGE CREATURES AND BLOW THEM AWAY!

You've always considered yourself a soldier of fortune with a knack for survival and a thirst for green. Your mission? Anything for a price. But this time it's different. The stakes are a little bit greater and the danger is all too real. You and your team are on a desolate moon, surrounded by less than friendlies, with only one goal besides the mission itself; stay alive long enough to enjoy your newfound wealth.

Hired Guns is an adventure that can accommodate up to four players simultaneously. It features furious non-stop action, first person 3-D view and auto-mapping of the 1.7 million cubic meters of play area. Choose from 12 different richly developed characters to suit your needs for the mission at hand. Journey through this desolate land, all the while testing your survival skills. And remember; TAKE NO PRISONERS!

Hired Guns is available on IBM compatible and Amiga formats.

Psygnosis
675 Massachusetts Ave.
Cambridge, MA 02139
(617) 497-7794
Circle Reader Service Number 226

BUILDING THE ULTIMATE GAME MACHINE

There's no application that's more demanding on your PC than a good game—here's how to make sure your machine has what it takes to perform.

ARTICLE BY PAUL C. SCHUYTEMA

Your face is washed in green from the infrared sensors; all around it's dark, silent except for the rhythmic whooshing of your rotor blades. Your left hand pulls back on the collective, increasing the lift of your Comanche helicopter. Your right hand thumbs your view left, then right; and the chopper lifts slightly, maintaining a steady hover in the South American night. Your feet, secured in control pedals, shift slightly, altering the speed of your tail rotor, twisting your craft starboard. A valley lies ahead—low passage into enemy radar territory. You push your joystick forward, cycling through your weapons systems with a thumb button. Only feet above the shallow river, airspeed nearly 200 miles per hour, you swoop in for battle.

A scene from the latest action movie? A training simulator for the new army? No, it's only a home computer resting on a desk in a small Midwestern town, and you're just playing a game.

What parents jokingly (and fearfully) called an obsession for their children—mindless, countless hours glued to a television set, Nintendo controller in hand—has evolved into a sophisticated, intelligent adult hobby. With the continued evolution of the PC and the savvy marketing strategies of the game-publishing industry, the PC game market has blossomed. Entertainment marketing leaders realized years ago that we adults, admittedly or not, want to play, and that we want more than just jumping, shooting, and collecting power pills: We want a complete experience.

But why is it that on your machine the latest, superhyped game is a dud? Your system probably doesn't have the power to entertain. PC games have evolved to a level of sophistication not even dreamed of a few years ago. It has only been in the past three years or so that PC games have begun to eclipse the playability of the Sega Genesis or the Super Nintendo systems. Even as late as a year ago, if you really wanted to play a great, fluidly animated football game, you had to look to cartridge systems. Now, thankfully, all manner of simulations and adventures abound on the PC, providing enough depth to entertain intelligent adults for months on end.

The Price of Power

Of course, the cutting edge of entertainment software comes at a price. Nowhere in the PC software industry does a group of products ask more from its hardware. A typical flight simulator will push your computer to its limit, making it breathe a sigh of relief when it merely has to calculate the sales statistics for a company of 500 employees. The games hitting the market now require the most powerful processors, hefty chunks of RAM, and large tracts of hard disk real estate.

In addition to the hardware requirements, the PC game market is rich with support systems, from peripherals such as sound cards or voice recognition systems to advanced, programmable flight controllers and even entire cockpit systems.

So what is a person to do? What is the ultimate PC game system? If you're a serious hobbyist looking to set up a solid, long-lasting computer system, there are a few guideposts that will help you on your way. Follow these steps to build the ultimate game machine; then sit back and enjoy gaming as it was meant to be.

The CH Flightstick puts power in your hands and delivers ultimate control.

Get a Solid Foundation

First, you'll want a solid base on which to build. Your CPU and memory capabilities are of utmost importance. Look into a 486DX2/66 computer system. Currently, the Pentium chip is still too new to be an absolute safe bet, but a 486 will provide you with enough computing muscle to handle even the most demanding game programs.

To support your CPU, you'll need RAM and hard disk space—and the more of it, the better. Don't even consider settling for anything less than 4MB of RAM. Ideally, you'll need a system with 8MB–16MB. You can have more than 16MB, but if you do, you run the risk of running into addressing problems and the potential for program crashes. So think twice before heading off to buy 32MB.

Your hard disk is probably your most vital asset, so choose a brand-name drive such as Quantum, Maxtor, Western Digital, or Seagate. As opposed to RAM, where too much might not be a good thing, hard drive space is never, ever a hindrance. Buy as large a drive as you can afford. Consider a 200MB hard drive as the smallest to accept, with 400MB or more and a fast access time (less than 18 ms) as your best bet, unless you can afford better.

Budget for the Best View

After storage, your monitor system is the most crucial component of your game system. Seek out the best non-interlaced monitor you can afford. One that's 15–17 inches is best, and make sure that it supports VESA standard modes. You'll also need a video card to control your monitor; there are plenty of good choices here. To shoot for the best, get a local-bus motherboard that supports the VL-Bus (see the November issue of COMPUTE for an overview of the various PC bus standards). This will allow your VL-compatible video card to operate at 33 MHz on an 80486/66 system (considerably faster than the 8-MHz ISA plain-vanilla video system used on most computers).

All computers come with a floppy drive, and a single 3½-inch drive is becoming the standard. Because of this, a 5¼-inch drive is no longer a necessity. You will, however, want a CD-ROM drive to sit in that vacant drive bay. Many systems now come bundled with CD-ROM drives at very reasonable prices, but be sure you get one that has a fast access time (under 300 ms) and is Photo CD compatible.

Currently, CD-ROM drives offer three different methods of getting the disc into the drive. First is the removable case: Much like the CD-ROM's own jewel box, it consists of a plastic housing with a metal shutter into which you place the disc; you slide the entire unit into the drive. The second method features a lightweight tray that slides out from the drive on which you place the disc, much as you do with audio CD players. The third allows the entire drive to slide out, flipping open its lid so you can insert the CD-ROM. While the first method can be annoying, it's a good choice if you'll have children using your system. A youngster is likely to force and break one of the integrated trays, necessitating a costly repair. The caddies are only a few dollars each, and you can buy several in which to store your most-used CD-ROMs or your children's CD-ROMs.

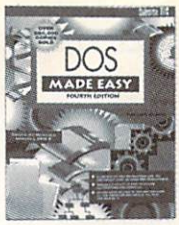
Software Tricks Expand Your System

In addition to getting the right hardware, you'll need some software tools

Select any 5 books for only $4.95

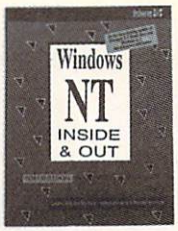
(Values to $157.75)

when you join the The Computer Book Club®

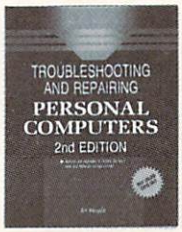


881896P $19.95

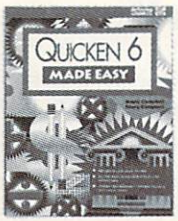
4220H-XX $39.95
Counts as 2/Hardcover



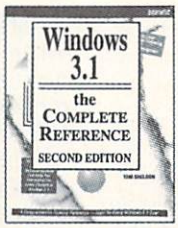
8818265P $27.95



3677H-XX $34.95
Counts as 2/Hardcover



881890P $19.95

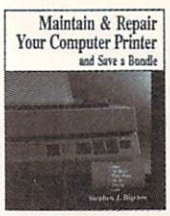


881889P-XX $29.95
Counts as 2

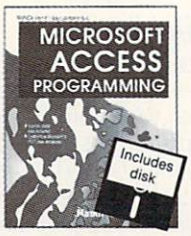
4191P $32.95

881821P-XX $39.95
Counts as 2

8818206P $29.95



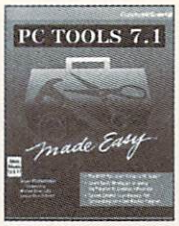
3922P $16.95



4333P $32.95

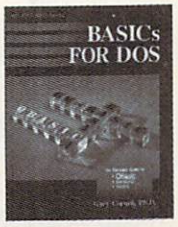
881900P-XX $29.95
Counts as 2

4089P $18.95



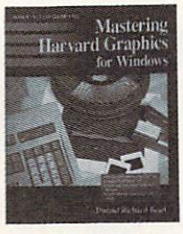
881744P $19.95

881907P-XX $29.95
Counts as 2

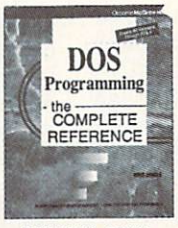


3769H $31.95
Hardcover

881869P-XX $27.95
Counts as 2

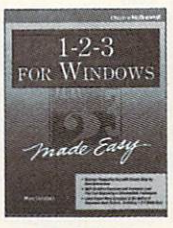


4186P $22.95



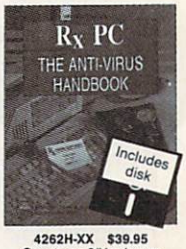
881782P-XX $29.95
Counts as 2

4069H-XX $39.95
Counts as 2/Hardcover

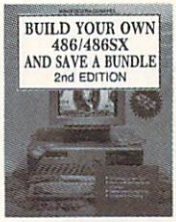


881731P $19.95

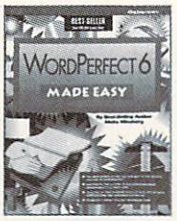
3986P $29.95



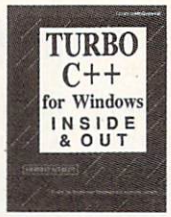
4262H-XX $39.95
Counts as 2/Hardcover



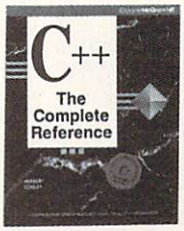
4270P $19.95



8818958P-XX $24.95
Counts as 2



881778P $27.95



881654P $29.95

4103P $24.95

4072H-XX $39.95
Counts as 2/Hardcover

If card is missing, write to:
The Computer Book Club, Blue Ridge Summit, PA 17294-0820

As a member of The Computer Book Club . . .

. . .you'll enjoy receiving Club bulletins every 3-4 weeks containing exciting offers on the latest books in the field at savings of up to 50% off of regular publishers' prices. If you want the Main Selection do nothing and it will be shipped automatically. If you want another book, or no book at all, simply return the reply form to us by the date specified. You'll have at least 10 days to decide. If you ever receive a book you don't want, due to late mail delivery of the Bulletin, you can return it at our expense. And you'll be eligible for *FREE BOOKS* through our Bonus Book Program. Your only obligation is to purchase 3 more books during the next 2 years, after which you may cancel your membership at any time.

CMPT194

All books are softcover unless otherwise noted. Publishers' prices shown. If you select a book that counts as 2 choices, write the book number in one box and XX in the next. A shipping/handling charge & sales tax will be added to all orders. ©1994 CBC

Cache of Ultimate Games

Each month, the technology envelope is expanded, and games are able to do more to bring us a complete experience. Below is a list of essential games—some of the best software out there just waiting to feed off the power of your ultimate game system.

Betrayal at Krondor

A fantasy game set within the fictional world of Raymond Feist's Riftwar saga, this game uses Dynamix's 3Space system (borrowed from the company's flight simulator programs), and the rotoscoped animation gives combat a hauntingly realistic feel. The game is played in chapters, and the depth of the characters and subplots is amazing. An 80486/66 allows you to set the movement increments to the smallest setting, creating the illusion that you're truly walking in this alien world.

Dynamix
Distributed by Sierra On-Line
(800) 326-6654
$69.95

Comanche Maximum Overkill

This near-future helicopter simulator, which utilizes fractal mathematics to generate incredibly realistic terrain, has recently been improved by the addition of a mission disk. Now you can fly over icy streams and hot desert canyons, battling more tenacious opponents than before. Playing Maximum Overkill on an 80486/66 with the full array of Thrustmaster controls is an experience that shouldn't be missed.

Nova Logic
(818) 774-0600
$69.95
Mission Disk One—$39.95

Front Page Sports: Football Pro

For years, the animation required to make an entire football team look realistic was beyond the power of the PC; hence, we had years of programs with blocky running backs or simply numbers floating above the field. FPS: Football Pro and high-powered PCs have changed that. Now you can view rotoscoped players in realistic detail. FPS: Football Pro is an armchair quarterback's dream come true, with complete playbook editing, allowing you to create any type of offense or defense imaginable. With the ultimate game setup, the play is smooth and fluid, and you rarely have to wait for the program to access the hard disk.

Dynamix
Distributed by Sierra On-Line
(800) 326-6654
$79.95

Links 386 Pro

This photorealist golf game is starved for computer power, but an 80486/66 is more than enough to satisfy it. Teeing off at Banff Springs, one of Access's latest courses, you have a breathtaking view of snow-capped mountains. Birds chirp in the background as your ball lands in the fairway, chipping distance from the green. As the view changes, the screen redraws in under five seconds on even the most realistic detail levels.

Access
(801) 359-2900
$69.95
Banff Springs course—$29.95

The 7th Guest

This is a milestone of computer technology, coming on two compact discs. The game places you inside an exquisitely rendered Victorian mansion. You must solve dozens of puzzles based on old Victorian parlor games and follow the adventures of six ghosts as they try to find the secret of the seventh guest. A fast computer is a must for this game, along with a fast CD-ROM drive and an advanced video card.

Virgin Games
(800) 874-4607
$79.95

Strike Commander

Origin's latest cinematic endeavor is a visually stunning F-16 flight simulator set in an interactive story in which you fly with a band of near-future mercenaries for hire. This game asks more from your computer than any other game released to date, but it rewards you with gorgeous graphics, a unique panning view made just for the Thrustmaster flight control system, and gameplay that will provide hundreds of hours of bogy-chasing enjoyment. With an 80486/66, you can perform quick, intuitive snap rolls and Immelmanns without bogging down the processor.

Origin
Distributed by Electronic Arts
(800) 245-4525
$79.95

VistaPro 3.0

While not a game, VistaPro is a fascinating product that allows you to render landscapes based on actual U.S. Geological Survey data. Using fractal technology and a wide assortment of options and controls, such as tree lines, haze altitudes, and cloud patterns, you can create superrealistic vistas of natural beauty. VistaPro allows you to create animations that take you on a journey through a virtual world. Rendering a scene at the highest detail levels takes just five minutes on an 80486/66.

Virtual Reality Laboratories
(800) 829-VRLI
$129.95

World Circuit

Get ready for a feeling of speed so mesmerizing that after playing, your real car will seem like a hopelessly underpowered slug. World Circuit is a Formula One driving simulation and easily the most advanced driving game yet produced. You can drive the complete international circuit of races, with each course painstakingly re-created, and you can adjust your gearing ratios and tire type for various race and weather conditions. World Circuit even allows you to control the frame rate of the animation behind the wheel.

MicroProse
(410) 771-0440
$59.95

X-Wing

Fly the same type of star fighter that Luke Skywalker flew to save the rebellion. This game is more of an advanced space-flight simulator than an action game, allowing you to tweak and adjust power configurations for maximum speed, protection, or firepower. All of the familiar sounds from *Star Wars,* from the plasma burp of the X-wing cannons to the banshee wail of a passing TIE fighter, truly throw you into the fiction of the game.

LucasArts
(800) STAR-WAR
$69.95

Arriving soon...

TOWER!

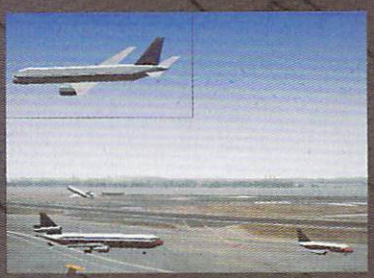
Tower cab simulator.

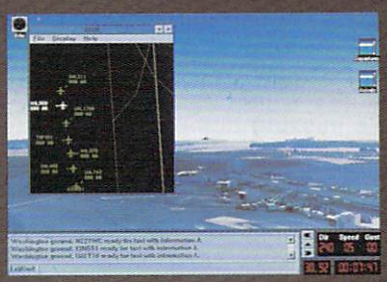
Tower puts you in the controller's chair high atop the tower cab of a major airport to choreograph the movement of the incoming and outgoing air traffic.

You control runway activity, ground crews and terminal traffic through a 360° scrollable out-the-window view with your keyboard or mouse. Local radar displays and easy-access information displays give you crash reports, news stories and more. You can also link, via modem, with Microsoft's® Flight Simulator® and Mallard's Air Traffic Controller™.

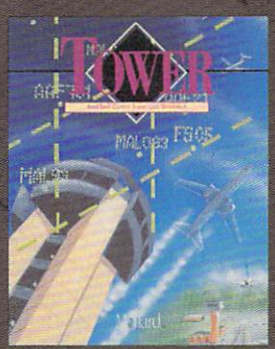
Character-style game play allows you to work your way up the 'corporate ladder' of each airport gaining perks, acquiring passwords to new levels and getting promoted accordingly. Points are scored depending on varying levels of traffic at different airports, types of pilots, time of day, weather conditions and the problems and emergencies that face the controller on the job every day.

Photo-realistic graphics and features like a 360° scrollable view and easy access information displays put you right in the middle of all of the action.





So if you think you're up to the challenge of directing traffic of a 'big league' international airport, get to your local software retailer for the arrival of ***Tower!*** From the publisher of today's hottest flight simulation enhancement products, Mallard Software. Who else?



Mallard™

See your software retailer or, for ordering information, call

1-800-WEB-FEET

© 1993 Mallard Software, Inc.
© 1993 Aviation Simulations, Inc.

Circle Reader Service Number 188

to build a solid game platform. First on the list is Microsoft's DOS 6. This recent update of the ubiquitous operating system implements two features essential for serious gaming: memory management and the ability to set up single CONFIG.SYS and AUTOEXEC.BAT files to handle multiple configurations. Today's top game software products are notorious memory hogs, and they need as much conventional memory (below 640K) as possible. DOS 6's MemMaker utility will optimize your startup files and give you the most memory possible. Also, many games require you to create a boot disk to provide enough memory for the game to run. DOS 6's ability to create multiple configurations, selectable by a menu at startup, is a true PC godsend. You may configure a default work setup, a game setup that uses EMS and one that doesn't, and so on.

If you're a power user who wants to play with the monster games, then MemMaker probably won't free enough memory. You'll need Quarterdeck's QEMM 7 memory manager utility, which not only will free up more than enough memory but will even optimize parts of your multiply configured system.

Finishing Touches

While the system I've been describing would make a great business system (yes, a game computer can also double as a true power user's workaday system), it's missing some of the essential components needed to transform it into an engine capable of simulating anything from jet flight to medieval sword combat. Without these finishing touches, your game machine will leave you cold.

Foremost of the trimmings are a sound card and a pair of quality speakers. For sound, consider a 16-bit card which features full Sound Blaster compatibility (still the standard for digitized effects and samples). Your best bets are either of the two 16-bit Sound Blaster cards or Media Vision's Pro AudioSpectrum 16-bit card. If you want even better sound, consider purchasing a Roland LAPC-1 or SCC-1 sound module to work in conjunction with your sound card. The result is unbelievable sound quality.

To get the most out of your sound system, you'll need self-powered speakers. Several companies now offer three-speaker systems (a subwoofer and two satellite speakers) specially designed for PC use, and Roland manufactures the MA-12 speaker system, which will put more punch on your desktop than is heard in most home audio systems. Another good source of powered speakers is your local music shop. There, ask for help with self-powered studio monitors.

Finally, your system will need some form of input device other than your keyboard. Most systems now include a mouse, which is good for menu selection but not for serious gameplay. You'll need a joystick for that. If you're running a high-powered 80486 system, you'll be best served by a dedicated joystick controller card, such as the ones offered by CH Products or Thrustmaster. While many systems, as well as many sound cards, are supplied with integrated game ports, the ports are just not fast enough for smooth control on a speedy PC system.

For a basic joystick, none is better than the CH Flightstick. The quality and control will make you glad you spent the few extra dollars. For more advanced control options, especially if you enjoy flight or space simulators, you can choose from a wide array of options, such as the CH Flightstick Pro. CH Products also offers the Virtual Pilot, a smooth, hefty flight yoke (such as those found in Cessnas and other private planes) with a throttle control. The yoke is also excellent for driving games, but it's a little slow for fast-paced games such as X-Wing or the Wing Commander games.

Thrustmaster offers a complete system centered on its new Mark II weapons control system. The Mark II is a throttle control built for the left hand; it features seven customizable buttons. It's essentially a self-contained computer; you can write simple programs to completely configure the joystick/throttle system to the specific game you're playing. Thrustmaster also offers a flight control system in a military-style joystick featuring four buttons and a coolie hat at the top, enabling a flight sim jock to change the view with a simple flip of the thumb. For the ultimate in realism, you can get one of the company's rudder pedals for foot control of an airplane's rudder, enabling you to make such moves as supertight turns, slips, and precise targeting.

The ultimate game system is more than just a cutting-edge game machine; it's also an extremely powerful utilitarian computer, one which will give you years of use for under $3,000. Shop carefully, and if you're purchasing components separately, check with the manufacturers to assure compatibility.

A solid, high-performance PC system is the cornerstone of the exciting hobby of PC game playing, and it's a hobby that offers escape, excitement, challenge, and nearly endless variety. If you want to have serious fun, you need to have a serious system. Budget for these minimum ultimate game machine system requirements, and your personal computer will have the power to entertain. ❑

Tips

- If you're going to set up your system with a hard disk compression program, be sure to leave a healthy allotment of uncompressed megabytes for gameplay. Many games don't take kindly to compression utilities.
- With DOS 6's multiple configuration option and the ability to create menus in your startup files, you can create a layered menu system to access your library of games, thus bypassing DOS's somewhat cryptic commands.
- If you're putting together your system a piece at a time, pay close attention to the IRQs and DMA specifications of CD-ROM controllers, game cards, and sound cards. Write the information on an index card and tape the card to the side of your monitor, since some installation programs require you to provide that information as part of the installation process.
- If you're a true game junkie, consider adding a removable hard drive to your ultimate system. You can back up your game directories on the disk and easily copy them back to your hard drive if you ever need to reinstall them.
- Buy the best joystick you can afford; a cheap one is just that—cheap. If you can, try several out before you buy. Life is too short to play with inferior equipment.
- Purchase a small light for your desk. Playing games by the monitor's light is great for effect, but fumbling for copy protection keywords or a certain key on the keyboard requires just a touch more illumination.
- Consider purchasing a joystick platform, either for your desk chair or desktop. Control will be much more ergonomic, and hence your gaming will be more fun.
- Also consider a truly comfortable chair (you don't want to feel like you're at the office, do you?). I use a canvas sling lawn chair; it may look odd, but it feels just right.

SAN FRANCISCO
SCENERY FOR
MICROSOFT® FLIGHT SIMULATOR® V.5.0
FOR DOS SYSTEMS
PHOTO-REALISTIC
SCENERY OF SAN FRANCISCO BAY
AND SURROUNDING AREA
For more information or to order call
1-800-WEB-FEET
© 1993 Mallard Software, Inc.
Circle Reader Service Number 199
Mallard

TECHNOLOGY UPDATE

900 MHz breakthrough!

New technology launches wireless speaker revolution...

Recoton develops breakthrough technology which transmits stereo sound through walls, ceilings and floors up to 150 feet.

Breakthrough wireless speaker design blankets your home with music.

By Charles Anton

If you had to name just one new product "the most innovative of the year," what would you choose? Well, at the recent *International Consumer Electronics Show*, critics gave Recoton's new wireless stereo speaker system the *Design and Engineering Award* for being the "most innovative and outstanding new product."

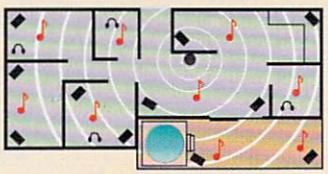
Recoton was able to introduce this whole new generation of powerful wireless speakers due to the advent of 900 MHz technology. This newly approved breakthrough enables Recoton's wireless speakers to rival the sound of expensive wired speakers.

Recently approved technology. In June of 1989, the *Federal Communications Commission* allocated a band of radio frequencies stretching from 902 to 928 MHz for wireless, in-home product applications. Recoton, one of the world's leading wireless speaker manufacturers, took advantage of the FCC ruling by creating and introducing a new speaker system that utilizes the recently approved frequency band to transmit clearer, stronger stereo signals throughout your home.

150 foot range through walls!

Recoton gives you the freedom to listen to music wherever you want. Your music is no longer limited to the room your stereo is in. With the wireless headphones you can listen to your TV, stereo or CD player while you move freely between rooms, exercise or do other activities. And unlike infrared headphones, you don't have to be in a line-of-sight with the transmitter, giving you a full 150 foot range.

The headphones and speakers have their own built-in receiver, so no wires are needed between you and your stereo. One transmitter operates an unlimited number of speakers and headphones.



Recoton's transmitter sends music through walls to wireless speakers over a 75,000 square foot area.

Crisp sound throughout your home. Just imagine being able to listen to your stereo, TV, VCR or CD player in any room of your home without having to run miles of speaker wire. Plus, you'll never have to worry about range because the new 900 MHz technology allows stereo signals to travel over distances of 150 feet or more through walls, ceilings and floors without losing sound quality.

One transmitter, unlimited receivers. The powerful transmitter plugs into a headphone, audio-out or tape-out jack on your stereo or TV component, transmitting music wirelessly to your speakers or headphones. The speakers plug into an outlet. The one transmitter can broadcast to an unlimited number of stereo speakers and headphones. And since each speaker contains its own built in receiver/amplifier, there are no wires running from the stereo to the speakers.

Full dynamic range. The speaker, mounted in a bookshelf-sized acoustically constructed cabinet, provides a two-way bass reflex design for individual bass boost control. Full dynamic range is achieved by the use of a 2" tweeter and 4" woofer. Plus, automatic digital lock-in tuning guarantees optimum reception and eliminates drift. The new technology provides static-free, interference-free sound in virtually any environment. These speakers are also self-amplified; they can't be blown out no matter what your stereo's wattage.

Stereo or hi-fi, you decide. These speakers have the option of either stereo or hi-fi sound. You can use two speakers, one set on right channel and the other on left, for full stereo separation. Or, if you just want an extra speaker in another room, set it on mono and listen to both channels on one speaker. Mono combines both left and right channels for hi-fi sound. This option lets you put a pair of speakers in the den and get full stereo separation or put one speaker in the kitchen and get complete hi-fi sound.

These wireless stereo headphones have a built-in receiver.

Factory direct savings. Because of our commitment to quality and our factory direct pricing, we sell more wireless speakers than anyone! For this reason, you can get these speakers far below retail with our 90 day *"Dare to Compare"* money-back guarantee and full manufacturer's warranty. Through this limited time offer, the Recoton transmitter is only $69. It will operate an unlimited number of wireless speakers priced at only $89 and wireless headphones at $59 each. So take advantage of this special offer to fill your home with music. Your order will be processed in 72 hours.

Recoton Transmitter..... **$69** $4 S&H

Wireless products compatible with the Recoton transmitter:

Recoton Wireless Speaker.....**$89** $6 S&H

Recoton Wireless Headphones.....**$59** $4 S&H

Please mention promotional code **161-CU1113.**

For fastest service call toll-free 24 hours a day

800-992-2966

DISCOVER MasterCard VISA AMERICAN EXPRESS

To order by mail send check or money order for the total amount including S&H (VA residents add 4.5% sales tax). Or charge it to your credit card by enclosing your account number and exp. date. Send to:

COMTRAD INDUSTRIES
2820 Waterford Lake Drive Suite 106
Midlothian, Virginia 23113

AWARD WINNING WIRELESS SPEAKER

Built-in receiver and amplifier:

The wireless speaker and headphones both contain a built-in receiver and amplifier. Signals are picked up and transmitted as far as 150 feet away through walls without the use of wires.

Size: 9"H x 6"W x 5.5"L
Signal-to-noise ratio: 60 dB
Channel Separation: 30 dB
Two-way bass reflex design
10 watts/channel RMS amps
Frequency Response: 50 Hz-15 KHz

Don't take our word for it. Try it yourself. We're so sure you'll love the new award-winning Recoton wireless speaker system that we offer you the **Dare to Compare Speaker Challenge.** Compare Recoton's rich sound quality to that of any $200 wired speaker. If you're not completely convinced that these wireless speakers offer the same outstanding sound quality as wired speakers, simply return them within 90 days for a full "No Questions Asked" refund.

Recoton's Design and Engineering Award

TECHNOLOGY UPDATE

How to get surround sound without buying the theater...

An amazing new surround sound decoder turns your existing stereo system into a multi-channel home theater.

By Charles Anton

As much as I love renting videos, it's just not the same as seeing a movie in a theater. I remember the first time I saw *Top Gun*. I nearly jumped out of my seat when the planes flew overhead. One of the reasons movies seem so real is because surround sound makes it seem like you're actually there. Now there's an incredible new device that lets you use a stereo receiver to get that same surround sound in your home.

It takes more than just four speakers to get surround sound; there needs to be some way of separating the signals. The new Chase Technologies HTS-1 decoder does just that, and in a revolutionary way that rivals the best Dolby Pro-Logic and THX systems available.

Wins over critics. Gary Reber, editor and publisher of the most authoritative magazine on home theater systems, *Widescreen Review*, stated, "...passive matrix decoders such as the new Chase HTS-1 work great as Dolby Surround™ extractors, and sound exceptionally natural when used for motion picture soundtracks and music."

Passive circuit. In 1972, legendary audio pioneer David Hafler invented a passive circuit to extract the "L minus R" difference signals in stereo soundtracks. Because the circuit was patented, it was only available on expensive Hafler products. Now that the patent has expired, Chase can make this amazing decoding system available at a fraction of the cost!

Breakthrough technology. The HTS-1 is able to decode the Dolby Surround™ signal in a videotape or laserdisc because the spatial and depth cues have been matrixed into the "L minus R" portion of the two-channel stereo soundtrack. By decoding passively, the HTS-1 avoids costly and noisy signal processing. Plus you don't need any additional amps! Just connect the HTS-1 to your existing stereo system, add two speakers for the rear, and you'll experience the magic of home theater at a fraction of the cost of other systems.

Concert sound. The HTS-1 also decodes the ambience found in all music recordings. This sense of space, or "concert hall acoustics," is present in all CDs and cassettes, especially live recordings. John Sunier, the leading authority on surround sound and producer of *Audiophile Audition*, a nationally syndicated radio program for audio enthusiasts, says, "...the new Chase HTS-1, when used to decode the hidden ambience in all musical recordings, definitely outperforms all the Dolby and THX processors which could cost you up to $3,000... I am impressed!"

The HTS-1 decoder makes your movies come to life, bringing the theater experience home.

Easy installation. Hooking up the HTS-1 is easy. Simply connect the speaker outputs of your receiver or amp to the HTS-1, then connect speaker wire to the front and rear speakers. The rear channel speakers don't have to be big. In fact, we recommend the Chase ELF-1 in either black or white finish to match your decor. They can be mounted with enclosed color-matched mounting brackets or can be flush mounted on the wall. They are also water and weatherproof, so they can be used indoors or out.

The ELF-1 rear channel speakers integrate perfectly with the HTS-1.

Risk-free home trial. Let's face it—the best way to evaluate surround sound is in your home, not in a showroom. That's why we're offering this risk-free home trial. We're so sure you'll be delighted with the quality of these products and the surround sound experience that we are giving you 30 days to try them for yourself. If they're not everything we say, return them for a complete "No Questions Asked" refund.

HTS-1 Home Theater Decoder..... **$79** $6 S&H

Speakers designed by Chase for the HTS-1:

ELF-1 Rear Channel Speakers .....**$99** pr $6 S&H

Please mention promotional code 113-CU1112.

For fastest service call toll-free 24 hours a day

800-992-2966

To order by mail, send check or money order for the total amount including S&H (VA residents add 4.5% sales tax.) Or charge it to your credit card, enclosing your account number and expiration date.

COMTRAD INDUSTRIES

2820 Waterford Lake Drive Suite 106
Midlothian, Virginia 23113

The secret of surround sound

Surround sound/home theater has become the rage of the 90's because it adds depth and realism to stereo sound, giving you the home theater experience. It makes you feel like you're actually at a concert or movie theater. To "fill a room" with surround sound, you need more than two channels. That's the beauty of the HTS-1; it provides four channels of sound from any two-channel stereo source.

Free center channel. By connecting your VCR or laserdisc player to your TV, you get sound from your TV speaker; this acts as the fifth or "center channel." Adjusting your TV's volume gives you as much or as little "center channel" localization as you desire, without extra speakers or amps. There are also no extra costs with the "fifth" channel. When used with the HTS-1, you 'll have a true state-of-the-art five-channel system.

Passive. The HTS-1 is passive, meaning it requires no AC current. It actually sounds better than active decoders, producing more clarity, more detail, no noise, a greater sense of space and zero distortion. This superior system is a breakthrough unique to Chase.

Active. All Dolby Pro-Logic decoders (even the built-in units) are active, meaning they decode and amplify the signal electronically. This can induce noise and distortion, hindering the home theater experience. This is an example where "more is less." Spending thousands of dollars on an active system will not give you the performance of the HTS-1 decoder. Try it for yourself.

MICROSOFT PUBLISHER 2.0

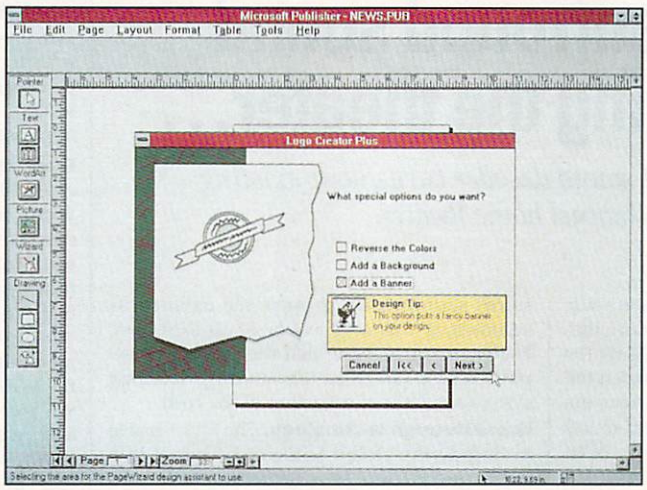
A blank page can be an intimidating thing; it can stymie even an experienced designer. To reduce such design stress, Microsoft has introduced its second version of Publisher with a host of helpful features for the growing number of page-layout laypeople.

Publisher 2.0 includes 35 new standard templates and 17 new PageWizard smart templates that automatically make everything from business reports to paper airplanes. The program abounds in automation, with features such as automatic text-wrapping around pictures and shaded objects. The Table tool gives you a choice of 21 formats with which to create tables, and the Shape tool lets you draw 36 different shapes, which you can manipulate in size and proportion to exactly fit your designs.

Even some of Publisher's help features are automatic. First-time help prompts you with help screens when you first use tools or features, and Print Troubleshooter tracks each print job and suggests problem remedies. Publisher is by far the most "helpful" program I've seen, offering eight variations of online assistance.

The program comes with 20 TrueType display fonts and more clip art and decorative borders than I care to count. All of this convenience is nice, but it promotes an if-I-can-do-it-I-should-use-it mentality. Microsoft realizes the potential for clutter and advocates restraint in the user's guide.

If the PageWizard templates could eliminate excessive design, they would be truly magical. But Publisher does the next best thing by starting you off with professional designs, including instructions and tips for tailoring the publication to your needs. Normally, design should follow content (form follows function), but you can get good results with these templates as long as you realize that you can't simply dump your text and pictures in and get automatic quality.



Microsoft Publisher 2.0 includes a set of improved PageWizards which can automate the creation of documents.

Much of the power of Publisher is hidden behind its easy-to-use interface. The program offers many features that high-end applications such as PageMaker have only recently included, such as drag-and-drop text editing, object embedding and linking, grouping and ungrouping capability, and incremental nudging of elements. Irregular-shape text-wrapping and the Shape tool are features PageMaker 5.0 doesn't even offer.

Yet, Publisher does have its limitations. It can't open more than one document at a time, which seems odd for such an otherwise powerful Windows program. You can run multiple copies of Publisher, however, which is almost as good.

Lining up objects accurately in Publisher can be difficult because you see only their outlines when you pick them up. This is fine for simple shapes, but text and pictures often need to be aligned by details within their frames. Judging alignment by their outlines is difficult guesswork.

You can rotate text in WordArt 2.0, an OLE program that's included with Publisher. Pictures must be rotated in other applications, such as Microsoft Draw, another OLE program. Publisher itself can only rotate line objects made with its drawing tools. WordArt can handle most of your text rotation, since it now supports TrueType fonts. But the smallest text that it can use is 12 points, so you can't place photo credits or other small text vertically.

Although Publisher can display and print 24-bit images (with proper hardware), its palette for line and fill characteristics is limited to 16 uneditable colors. High-quality color output is possible in spite of Publisher's limited color, but if you need specific spot colors or do four-color publishing on a regular basis, you might be better served by a high-end program with full-color capability. If you don't need color or if your final output will come from a color inkjet or laser printer, the program's range of hues may be adequate. How often you use color, to what degree, and who does your printing should all be criteria in considering Publisher versus other programs.

Publisher works well as a design-for-dummies publishing program, but it would be a mistake to discount it as strictly an amateur's application. It's quite capable of producing professional results, with or without using autopilot. Just be sure that when you switch to manual, you don't overdo it.

PHILLIP MORGAN

Microsoft
(800) 426-9400
$199

Circle Reader Service Number 434

BALLPOINT MOUSE 2.0

Notebook computers are amazing. It's hard to believe that you can cram a 486 motherboard with 16MB of memory and a 200MB hard disk into such a tiny package. In fact, notebook designers have been able to miniaturize everything except the person using the computer. It's the user interface that presents the biggest challenges in these tiny PCs.

The screen, keyboard, and pointing device on notebooks all must be large enough to be usable but small enough to be porta-

From Those Wonderful Folks Who Gave You Gridlock, Blackouts and Runaway Taxes, Comes Raw Sewage, Yellow Journalism and the Subway at 3 a.m.

ble. Screens have made great strides in the last few years; keyboards haven't improved much and probably won't. Pointing devices are where the current action is, and with Windows running on nearly 60 percent of all notebooks, a good, solid pointing device is a must.

Most people would agree that, for a notebook computer, the trackball is the portable pointing device of choice. It comes closest to the mouse in terms of accuracy and control, and it occupies very little space.

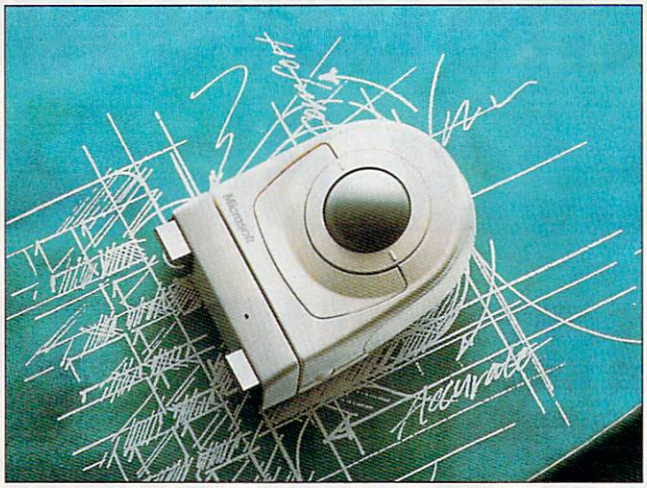
Microsoft has just introduced its newest entry into the trackball fray: the Ballpoint Mouse 2.0. It's smaller and sleeker than its version 1.0 big brother, and the trackball itself is much improved. In fact, with its silky smooth action and skid control, it rivals desktop trackballs. It's easily the best trackball I've ever used.

Right out of the box, you can tell the Ballpoint is different. Its new design fits your hand the way a pointing device should. The edges are smooth, and the underside sports a nonslip runner grip. The buttons are larger than they were with the 1.0 Ballpoint, and their position is different. Instead of the left and right buttons being on top of each other on one side of the mouse, the left button is on the far side and the right button is on top. There's a third button opposite the left button that becomes the main button for southpaws. (It can be reconfigured as the right button if you prefer.)

Like most other laptop trackballs, this device clips on the side of your notebook. It has small hangers that will fit most notebooks and allow you to close the case with it attached. The Ballpoint uses a PS/2 connector, and there's also a QuickPort version that simply snaps into any QuickPort-equipped computer. No serial-port version is available, however.

The Ballpoint also comes with a new release of the Microsoft Mouse Driver, version 9.01. With this new driver, you can not only adjust the buttons, as discussed above, but also control the size of the cursor; add mouse trails; make the pointer grow when you move the mouse; and adjust what Microsoft calls color, which in this case means choosing black, white, or reversed for the mouse pointer.

In addition to these features there are some other interesting options in the new driver. With Magnify, you can use a hot key to enlarge the area under the mouse pointer. With Snap-To, the mouse pointer automatically moves to the default button in a dialog box. Set Screen Wrap to on, and the pointer will move off one edge of your display and appear at the beginning of the opposite edge. Locate uses a hot key to move the pointer to the middle of the screen. Although Screen Wrap seems more like something you'd want to use as a practical joke, the other features are all useful, especially on a notebook. It's worth noting that you can use this version of the driver with your mouse, too, if you want to take advantage of the latest enhancements.



Microsoft's new Ballpoint Mouse 2.0 sports larger, more conveniently placed buttons and includes an improved driver.

Many notebooks these days come standard with pointing devices, but if yours doesn't, this well-designed, smooth, and sure-footed trackball may be your best pointer bet.

CLIFTON KARNES

Microsoft
(206) 882-8080
$125

Circle Reader Service Number 435

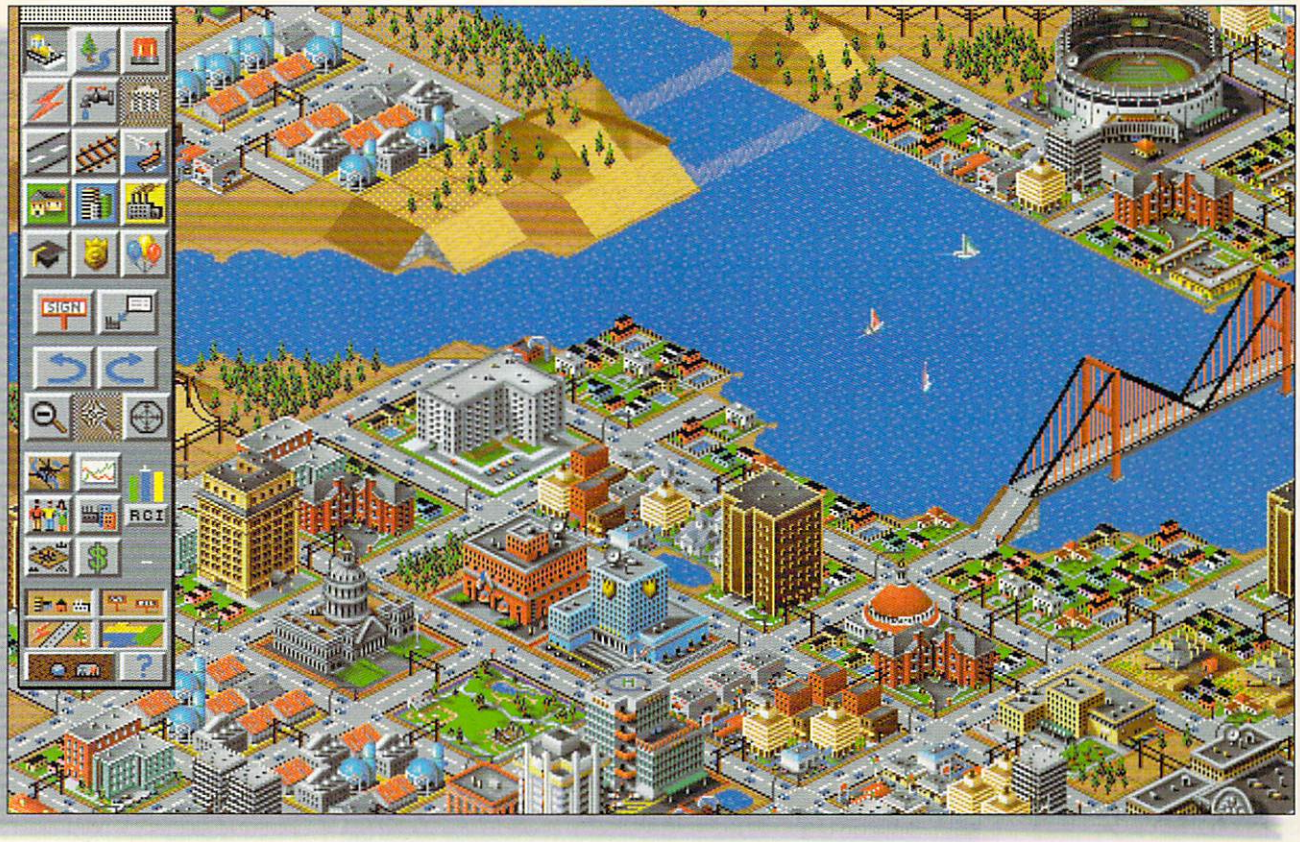
DISCOVER SPACE

The heavens have been an endless source of fascination throughout human history. But the hard science that underlies our understanding of the cosmos is often daunting. Many of the concepts of astronomy are more easily understood if learned visually—a task for which computers are perfectly suited. Brøderbund's Discover Space lets your computer show you the sun, moon, planets, and stars, as well as the ships we've used to explore them. Its text and many pictures, illustrations, and animations put astronomical concepts into context and explain them with abundant use of comparison and analogy.

But what sets Discover Space apart from so many educational programs is its usefulness even after you've seen all its images and animations. The program's Skyline feature can plot 7000 stars, 110 deep space objects, 90 constellations, and the nine planets, all positioned as they would be seen from any point on earth. Not only that, but the plot can be made at any time, on any day in the past, present, or future. Discover Space can animate the stars to show how they appear to travel across the heavens and print a time- and location-specific star map, so you'll know exactly where to find what you're looking for in the night sky.

Discover Space can also show you the phase of the moon for virtually any date, trace the path of 33 past and future solar eclipses, and calculate the damage caused by an asteroid striking the Earth. You determine the asteroid's size and velocity, and the program will superimpose the resulting crater over one of several U.S. sites to give you an idea of the destruction such a catastrophe would cause.

You can run Discover Space in VGA or 256-color SVGA mode, but the latter requires a VESA driver. Running in SVGA not only gives



Now Entering SimCity 2000™

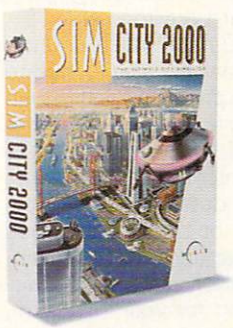
More SimCity flavor—less salt. The desalinization plant pumps fresh water into pipes you lay in the new underground level.

Beneath the polished facade lies a seething cauldron of angry taxpayers, broken water mains and other challenges that will take you uptown, downtown, even underground. Now entering SimCity 2000—the ultimate city simulator.

Stop the presses! 2000 comes complete with a daily paper that may have you wanting to repeal the first amendment.

This long-awaited follow-up to our software landmark, SimCity,® makes simulated real estate, in a word, realer. In it, you get multiple viewing angles. You get to import your old SimCities. You get to terraform your landscape. You get total control of a subterranean web of water pipes and subways. And you get it all in gripping, eye-imploding 3-D.

Take a byte out of crime. Build SimPrisons—along with SimHospitals, SimSchools and other city SimServices.



So pack up those old programs and move to SimCity 2000. Everything that started the SimCity revolution. In a vivid new evolution.

The Ultimate City Simulator.

MAXIS

Available for IBM PC & compatibles and Macintosh. © 1993 Sim-Business. All rights reserved. SimCity 2000 is a trademark of Sim-Business. Maxis and SimCity are registered trademarks of Sim-Business. For product or ordering information, contact your local retailer or call 1-800-33-MAXIS.

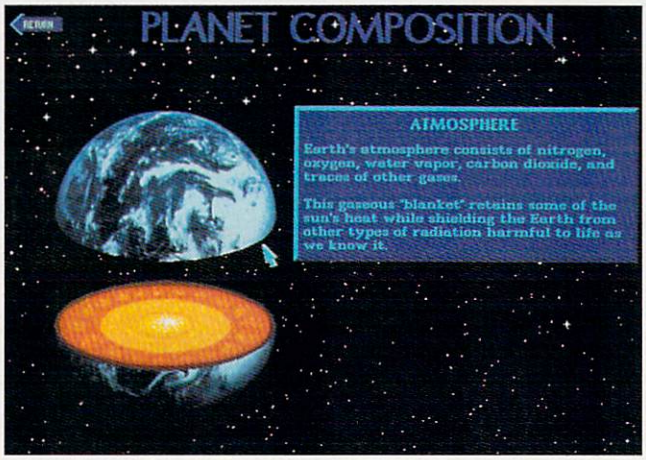
better color representation but also allows for more and better animation. Although some animations were noticeably faster on a 486, Discover Space ran well on a 33-MHz 386DX machine with 4MB of memory. Running in SVGA slowed operation slightly, but the loss of speed was well worth the gain in image quality.

While sound isn't essential, the program supports several popular sound cards, and the music and background noises make it considerably more impressive. Viewing skylines in SVGA mode with outdoor sounds is almost like looking out an open window.

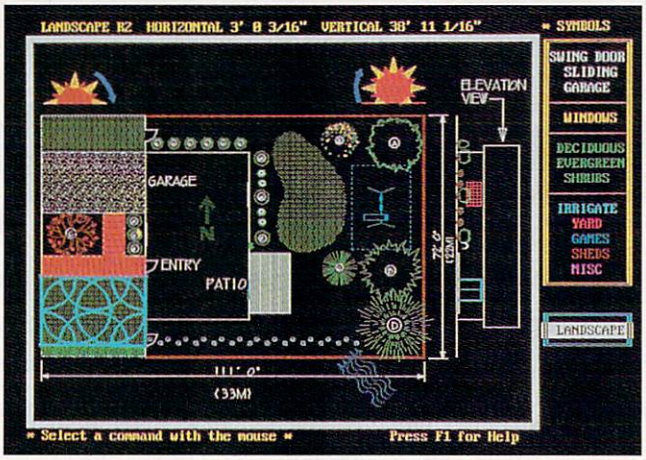
Neither the program's operation nor its content is difficult to grasp, yet it's by no means just a children's program. Whether you're interested in astronomy, space travel, or science fiction or just like looking at the stars, Discover Space offers an abundance of stellar information and entertainment.

PHILLIP MORGAN

Brøderbund Software
(800) 521-6263
(415) 382-4400
$50–$60 suggested price range
Circle Reader Service Number 436



Brøderbund's Discover Space uses animation and SVGA graphics to teach about astronomy and the planets.



Autodesk's Home Series lets you design or modify elements of your home using specialized CADD programs.

THE HOME SERIES, RELEASE 2

T-squares and architect's scales begone! Autodesk's The Home Series, Release 2, lets you create architectural drawings on your home computer, view them in 3-D, and quickly and easily make as many changes as you like.

The series consists of four programs: Home, Kitchen & Bath, Deck, and Landscape. They're stripped-down versions of Autodesk's Generic CADD 6.0 and use built-in macros to eliminate much of the full program's complexity. The programs use the same basic interface, but each includes special commands and symbols. Kitchen & Bath, for example, has a much wider variety of cabinet and appliance symbols than does Home.

The programs also differ in how their output can be used. Deck is probably the most useful for true do-it-yourselfers who intend to handle everything from designing to building. While all of the programs render very accurate plan and elevation drawings, Deck produces more detailed drawings and allows you to selectively view and print their layers. The other three programs seem best suited for drawing basic spatial plans, which professionals can import directly into their high-end CADD (Computer Aided Drafting and Design) applications and use to develop complete sets of drawings and specifications.

Even as only initial planning tools, The Home Series programs can be tremendously useful. They scale your drawings for you, so miscalculations won't throw off your plans (unless, of course, you use incorrect measurements). The many symbols included in the series are automatically scaled to your drawings when you place them. It's much easier to get a sense of proportion if you can look at a drawing of a house full of furniture and fixtures or a kitchen complete with cabinets and appliances.

The Home Series won't make you an architect. A basic knowledge of home design and familiarity with architectural drafting is necessary. The programs' documentation repeatedly warns that you need to consult architects, builders, and inspectors to be sure your designs are safe, workable, and up to local building codes. Nevertheless, Autodesk tries to give you enough basic information to get started.

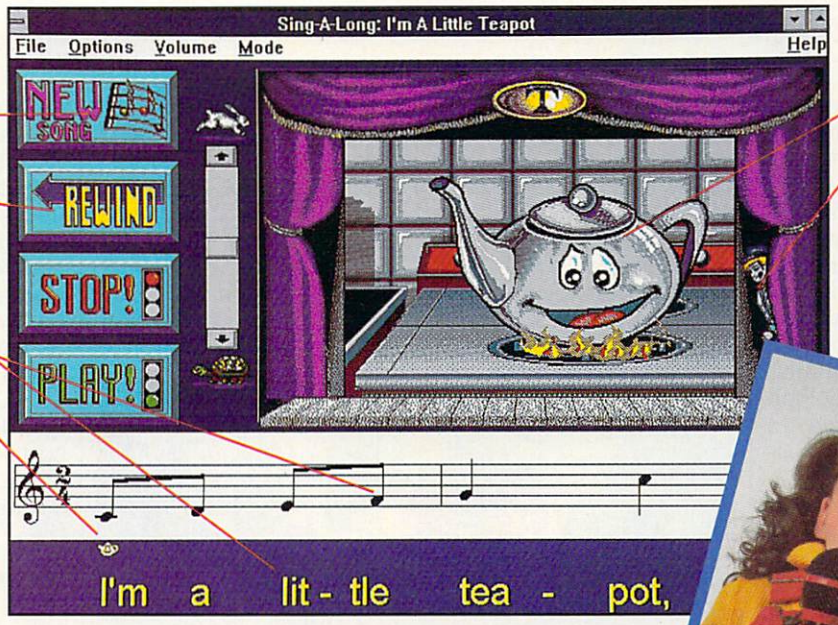
The manuals list common building materials and standard dimensions and offer advice on functionality and aesthetics. Landscape's instructions discuss balance, order, unity, proportion, variety, and seclusion as considerations in creating your backyard environment.

If you have much drafting experience, you'll notice that the programs don't strictly follow architectural conventions. If, for example, you're using interior measurements in your drawing but your architect or builder assumes you've specified conventional exterior dimensions accounting for wall thickness, you could have some serious problems.

The best reason for using

Bring Home The Magic Of Children's Musical Theatre™ With Dr. T's Sing-A-Long!

Ages 3 to 10



"Click" to repeat songs and turn lyrics on and off.

Large, Colorful Buttons give the smallest hands big control over the music.

Lyrics & Notes scroll to the music.

Dancing Icon helps the singer follow along and read the words and music!

Brilliant Animation brings each song to life!

"Actors" talk to the audience.

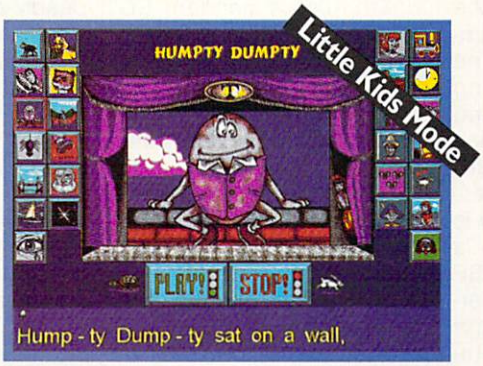
Dr. T's Sing-A-Long Is Musical Software That Puts Your Child In The Middle Of The Music... The Lyrics...The Animation...The Fun!

The songs and lyrics are directed right at the computer while your child sings along to over 25 Classic Children's songs. Each one is an engaging story with its own actors and animation.

Itsy Bitsy Spider, Old MacDonald, Yankee Doodle, Mary and her Little Lamb, and all the other characters provide hours of entertainment while involving your child with basic learning skills.

Parents and educators agree — Dr. T's Sing-A-Long is the innovative way to teach reading words and music. Lyrics scroll in time with the music so learning is fun. You can print the music and lyrics on virtually any printer.

Dr. T's Sing-A-Long grows with your child. Start your small one in *Little Kids Mode*. The simplified interface develops singing, reading, and mouse skills, while it protects Windows from a child's curiosity. As abilities progress, use *Normal Mode*.



Included

Simple instructions for adding a microphone to record performances. Any grandparent would treasure a recording! Software supports all popular sound cards and CD ROM drives.

Full-color Dr. T's Sing-A-Long Song Book. The songs, with words and sheet music, are beautifully illustrated with animated screen characters.

Dr. T's Sing-A-Long Make It Your Child's First Software... It's Never Too Early To Sing!

Call 1-800-282-1366

For fastest ordering. Or Fax 1-716-873-0906

Make Your Child A "Star" This Holiday Season! Only $29.95

Free Delivery Included

Requirements: Windows 3.1 • IBM 386 or compatible computer • CD-ROM drive or 3.5" floppy drive • VGA display • 4 MB of RAM and 2 MB free hard disk drive • Sound card.

☐ **YES!** Please send me **Dr. T's Sing-A-Long.** ☐ 3.5" disk ☐ CD ROM disk

Name (please print clearly)

Address

City State Zip

☐ VISA ☐ MasterCard ☐ American Express

Credit Card Number Expiration Date

Phone Number

Signature

Or make check payable in US Funds and mail to: Dr. T's Music Software
P.O. Box 119, Buffalo, NY 14207

Dr. T's Music Software, Inc. All Rights Reserved.

NY, MA, CA residents: Please add applicable sales tax.

The Home Series is to get an accurate spatial impression of your new or remodeled home or yard. If you can't get that from the programs' two-dimensional plan views, you can render them as 3-D eye-level or overview drawings. By changing your point of view, you can "enter" any room or area you like using the 3-D Plan module. It's possible to move around the room using the eye-level view, but 3-D Plan is a memory- and processor-intensive subprogram and may run quite slowly on some systems. You may also have to play with your configuration and eliminate some TSRs to get it to run properly.

CADD experience isn't necessary to effectively use The Home Series. In fact, if you've worked with full-blown CADD programs, you'll probably be frustrated by limitations built into these four programs for the sake of easy use. Still, you should plan to spend some time with the manuals; their tutorials are quite helpful. It'll probably take you longer than Autodesk's estimated 30 minutes to figure out a Home Series program, but once you do, it won't take half that long to decide you never want to go back to the drawing board.

PHILLIP MORGAN

Autodesk
(800) 228-3601 (U.S. and Canada)
(206) 487-2233
$69.95 each

Circle Reader Service Number 437

OMNICD

Why are CD-ROM discs so great? They hold tons of data. Why are they so bad? They're s...l...o...w. And I mean *really* slow. The average CD-ROM drive has an access time of 350 ms while the average IDE hard disk has an access time of about 15 ms. When it comes to throughput, the average CD-ROM drive moves data at about 150K per second, while most modern hard disks pump info at 1MB or more per second.

How do you make a CD-ROM drive faster? The best way is to double its speed, and that's just what Creative Labs has done with the OmniCD. Instead of moving data at the 150K rate of single-speed drives, it double-times data at 300K per second. The OmniCD isn't the only double-speed drive available, but it's one of the least expensive. And it's completely compatible with The Multimedia PC Marketing Council's recently released Level 2 Specification, which calls for a 16-bit sound card and a double-speed drive.

The Creative Labs OmniCD double-speed CD-ROM drive is available in a variety of bundles, including one with PhotoStyler.

Installing the OmniCD is painless. If you have a Sound Blaster Pro or ASP 16, the CD interface is already built into your sound card. So you just plug the drive's control and audio cables into the card, plug a power connector into the drive, and install the CD drivers, and you're in business.

If you have another brand of sound card or no sound card, the OmniCD comes with its own dedicated interface card. It's worth mentioning that Creative Lab's CD uses a proprietary interface rather than the industry-standard SCSI.

There are several goodies packaged with the OmniCD. First, the drive is Photo CD compatible. Included in the package is a special version of Aldus PhotoStyler, one of the best bitmap graphics editors around. You'll also find several utilities, including CD Player, which makes playing audio CDs easy.

After installing the OmniCD, the first thing you're likely to notice is that it doesn't use a standard CD caddy. Caddies are a pain, and I'm glad that the OmniCD and several other second-generation CD drives are opting for the caddyless design.

"All this is great," I hear you say, "but how fast is it?" Well, as you'd expect, it's about twice as fast as a regular drive but feels even faster. The difference between using the OmniCD and a single-speed drive is dramatic. With the OmniCD, images snap onto the screen, full-motion video sequences are suddenly fluid, and searches are quicker. Everything is easier and more enjoyable.

After using the OmniCD for about a month, I can't find a single thing to complain about. In fact, the only negative is that it doesn't use a SCSI interface. But even that's something of a virtue, because its proprietary interface makes it compatible with the zillions of Sound Blaster Pro and ASP cards already out there. At $299, this is a deal that's hard to beat.

CLIFTON KARNES

Creative Labs
(408) 428-6600
$299

Circle Reader Service Number 438

THE LOST VIKINGS

Arcade fans suffering from game-console envy can finally find relief in The Lost Vikings, a superb platform-style action game that survives the voyage to the PC completely intact.

You control a trio of bickering Viking warriors, displaced in time and space by an evil alien zookeeper. Your goal is to guide them home, through 37 levels of increasingly weird worlds, blocked by puzzles and deadly adversaries. Each Viking has his own unique ability to jump, attack, or defend. Because you can control only one Viking at a time, success requires switching between characters, combining their strengths to survive.

Gameplay, while not terribly original, is instantly engaging and constantly challenging. Background graphics are colorful and varied, highlighted by expressive character animation and huge multiscreen playfields. The trio's subtle comic interplay also adds delightful personality to the action. Controls are equally responsive for keyboard or joystick,

CYBERDREAMS™
ENTERTAINMENT SOFTWARE

CyberRace - A Revolutionary 3D Combat and Racing Simulation Designed by World-Famous Futurist Syd Mead, Whose Design Credits Include *Blade Runner*, *Tron*, *2010*, and *Star Trek: The Motion Picture*.

Available for the IBM PC and Compatibles (August 1993), Commodore Amiga (March 1994) and Apple Macintosh (March 1994).
For further information please contact: North America (818) 348-3711 • Europe (071) 328-3267 (U.K.)

Circle Reader Service Number 144

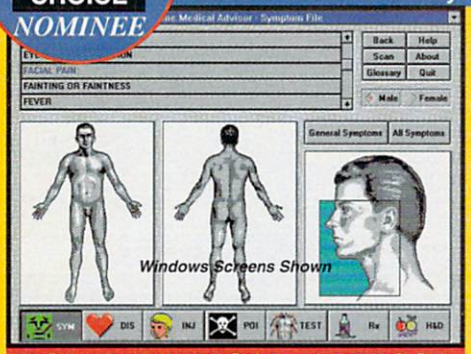
Cyberdreams and CyberRace are trademarks of Cyberdreams, Inc. ©1993 Cyberdreams, Inc. Illustration ©1992 Oblagon, Inc. ALL RIGHTS RESERVED.

"BEST" Adult Discovery Software COMPUTE CHOICE NOMINEE

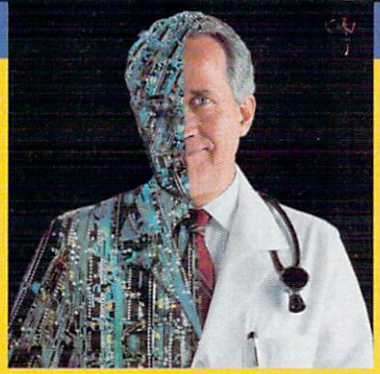
2 GREAT MEDICAL PROGRAMS

Created By Doctors NOT Computer Programmers!

Expert Medical Advice At The Touch Of A Key!



HOME MEDICAL ADVISOR



PIXEL PERFECT

Includes . . .InteRact The MOST Comprehensive Drug Interaction Program

YOUR MEDICAL RECORDS

- **Fast Answers** The ONLY program of its kind to analyze symptoms and provide actual diagnoses
- **Easy To Understand** No confusing"medical jargon"
- **The Largest Drug Database** Plus extensive info on diseases, injuries, tests, poisons, nutrition & diets

Home Medical Advisor $87.50*
Your Medical Records $69.95*
MS-DOS and Windows Versions Available

Your Choice $49.95 or Both For ONLY $69.95
* List Price

- **14 Complete Medical Histories** Keeps and prints YOUR important medical records in two different formats
- **Medical-Legal Documents** Prints custom documents like the "Living Will"and "Durable Power of Attorney"
- **Analyzes Over 2,400 Substances** InteRact, provides a complete analysis of 250,000 possible drug interactions

TEL (407) 777 - 5353 FAX (407) 777 - 0323
10460 So. Tropical Trail Merritt Island, FL 32952

FREE SAME DAY SHIPPING!

Ask about our new CD ROM Pro version!

1-800-788-2099
See your Software Dealer or. . .Call Us Today
*All Trademarks are property of their respective owners

Circle Reader Service Number 207

REVIEWS

with excellent support for the four-button Gravis PC Gamepad controller.

The best compliments paid to The Lost Vikings are that it looks as good and plays as well as the Amiga and SuperNintendo versions. That's high praise indeed and an encouraging sign for the future of arcade games on the PC.

SCOTT A. MAY

Interplay
(800) 969-4263
$49.95

Circle Reader Service Number 439

If you're looking for a Nintendo-esque platform game for your PC, Interplay's The Lost Vikings fits the bill.

READY, AIM, FILE!

Ready, Aim, FILE! 2.5b is a Windows file and program manager that allows you to use 256-character filenames. With its system of file cabinets and folders, you can organize files by subject rather than by disk directory structure. You have six cabinets, and within each cabinet you may have as many folders as you wish, but you may view only three at a time.

RAF displays onscreen buttons for performing common operations you would otherwise do in Program Manager and File Manager—launching programs, moving, copying, deleting, searching, and so forth. RAF can't actually replace Program Manager as a shell; instead, it runs on top of it.

While RAF allows 256-character filenames, it still must create its own DOS names (like 307277.DOC). The manual warns against using DOS or Windows to change these filenames, since the program could get confused (and so could you). A smarter program would protect you from accidentally or illegally changing these filenames outside the program. If you use RAF at all, you probably should use it whenever you're using Windows.

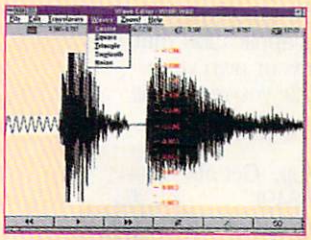
Within Windows applications, Open, Save As, and Import can use the long filenames. RAF is preset to intercept these commands with over a dozen programs. However, in my experience, Open didn't always work properly with Word for Windows, one of the preset programs. You must do some setup to make the intercept feature work with other Windows programs, and this isn't a task for novices.

RAF has some nice ideas, like Version Control (which lets you track changes in a file by saving without replacing). But it's rough

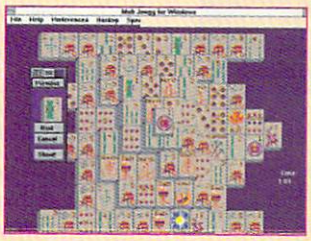
10 SUPER WINDOWS APPS

FREE*

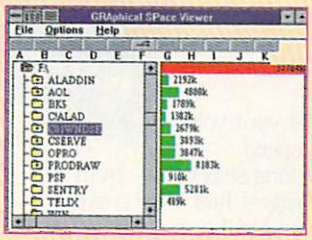
ALL-NEW!
COMPUTE'S ULTIMATE WINDOWS™ DISK



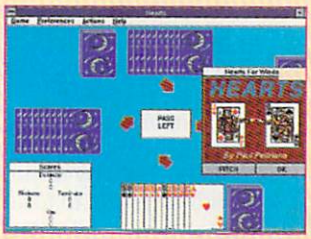
WAV EDITOR



MAH JONGG



SPACE VIEWER



HEARTS

THIS ALL-NEW MUST-HAVE COLLECTION OF DYNAMITE WINDOWS UTILITIES AND GAMES LETS YOU

- CREATE AND EDIT ICONS
- EXIT WINDOWS IN A FLASH
- FIND DUPLICATE FILES FAST
- DISPLAY YOUR DISK'S SPACE USAGE
- WIN AT HEARTS
- MASTER MAH JONGG
- PREVIEW FONTS
- ADD GROUPS TO YOUR SYSTEM MENU
- EDIT WAV FILES
- SEE YOUR MODEM STATUS ONSCREEN

All programs on this disk are the highest quality shareware and freeware and have been tested and virus-scanned by COMPUTE's editors. And for a limited time, the disk is yours free.* Order now!

[ ] YES! Rush me my free* COMPUTE's Ultimate Windows Disk. I pay only for postage and handling.

_____ 5 1/4" HD disk(s) _____ 3 1/2" HD disk(s)

$_____ Total disks x $3.95 postage and handling each

$_____ Sales tax (Residents of NC and NY, please add appropriate sales tax for your area. Canadian orders, add 7% goods and services tax.)

$_____ Foreign orders outside U.S. and Canada, add $10.00 additional postage and handling.

$_____ Priority 2-day delivery (U.S. only), add $5.00 additional postage and handling.

$_____ Total Enclosed

ALL ORDERS MUST BE PAID FOR IN U.S. FUNDS BY CHECK DRAWN ON A U.S. BANK OR BY MONEY ORDER. MasterCard or VISA accepted only for orders over $200.00.

Windows is a trademark of Microsoft Corporation.

NAME:_____

ADDRESS:_____

CITY:_____STATE/PROVINCE:_____

ZIP/POSTAL CODE:_____

_____Check/Money Order _____Mastercard _____VISA

Credit card no. _____

Expiration date:_____

Signature:_____
(required)

Daytime phone no.:_____

Send your order to COMPUTE's Ultimate Windows Disk, 324 West Wendover Ave., Ste.200, Greensboro NC 27408. Please allow 4 to 6 weeks for delivery.

PRIORITY ORDERS: Address to COMPUTE's Ultimate Windows Disk, Dept. WX, 324 West Wendover Ave., Ste. 200, Greensboro, NC 27408.

*Postage and handling for standard delivery (4–6 weeks) is $3.95 per disk. Additional charges apply for express delivery and foreign orders. Offer expires March 31, 1994.

S

Elvis Is Alive

... and well, with 24 other artists in the hottest, least expensive, most professional sounding, MIDI Karaoke on the market today!

Customize each song to fit your voice perfectly with our pitch and speed controls. Use any of our 25 song selection — from Broadway greats to today's biggest hits — or create your own hits ... it's easy since MIDI Karaoke uses standard MIDI files.

But wait, there's more ... Turtle Beach MIDI Karaoke is the only Karaoke application with the bouncing ball. Yes, from word to word, our bouncing ball guides you perfectly through the song so you sing the right words at the right time.

AND...most, most, most importantly, it's the only Karaoke application that allows you to record your own voice directly to the hard drive while you're singing and then play back the entire file — music and voice together!!

So don't get all shook up. Get all this and more for only $49!

See your favorite dealer, or call 800-645-5640 and order your Turtle Beach MIDI Karaoke today.

WORKS WITH ANY SOUND CARD!

TURTLE BEACH SYSTEMS

P.O. Box 5074 • York, Pennsylvania • 17405 • 717-843-6916 • FAX: 717-854-8319

Circle Reader Service Number 193

REVIEWS

around the edges and weak in areas: incomplete screen redraws, help text wider than its window, and a file viewer that displays only text files.

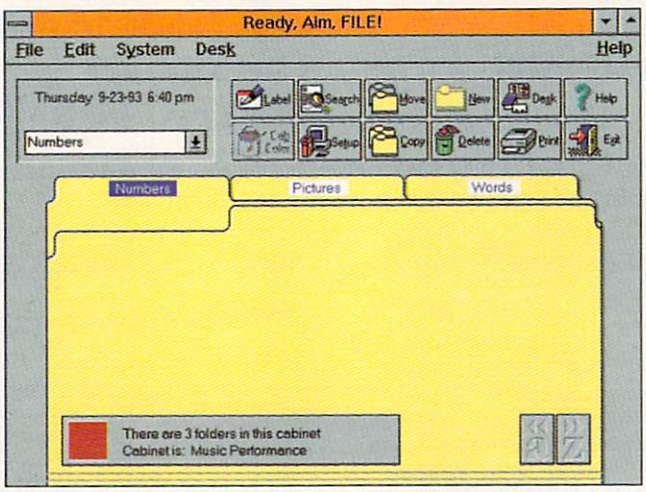
To its credit, RAF has an uninstall feature. Unfortunately, it doesn't go through your 256-character filenames prompting you to rename them to DOS names, so if you don't rename them before uninstalling, you're left with the strange, indecipherable filenames.

While RAF seems to be aimed at novices, inexperienced users are likely to get in trouble with it. VSoft offers a 30-day money-back guarantee, so you might want to give it a try and see if it fits your needs.

J. BLAKE LAMBERT

VSoft
(800) 845-4843
$99.95

Circle Reader Service Number 440



Ready, Aim, File! replaces long lists of obscure DOS filenames with folders and 256-character filenames.

AMERICANS IN SPACE

If you're a manned space flight enthusiast, Americans in Space is a must-have package for your multimedia PC. This comprehensive CD-ROM stylishly chronicles the U.S. manned space program from its beginnings to the present day space shuttle and the upcoming space station. Watching and listening to a riveting blend of still pictures, animation, and narration, you can either follow the progress of America's manned space projects across the historical time line or zoom directly in on a particular subject of interest.

Upon launching the software, you have three options. Beginners can consult the Pilot's Manual for usage information. Once you've been briefed on piloting the program, you can travel to Mission Control for access to over 500 photographs and over an hour of video and narration. Finally, the Express Tours selection offers overviews entitled The Race to the Moon, Turning Points, Disasters, Living in Space, and Cruising the Planet.

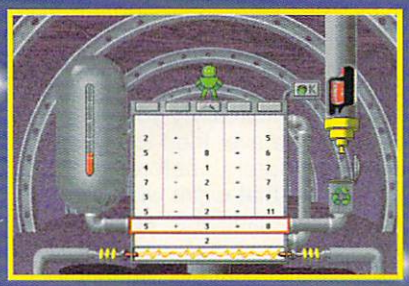
The Americans in Space user interface makes navigation a breeze. In both Express Tours and Mission Control, you choose options from a simulated control panel using the mouse.

There are eight selections in Mission Control: Prologue, Mercury, Gemini, Apollo, Skylab, Apollo-Soyuz, Space Shuttle, and Space Station. If you click on Apollo-Soyuz, you're given only one selection, since the program had only a single mis-

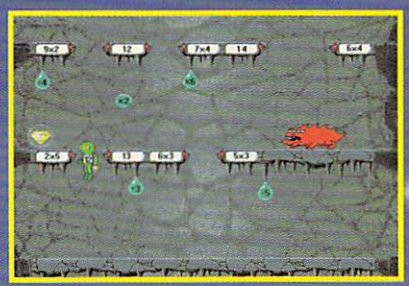
Boldly Go Where No Math Program Has Gone Before!

Over 1.5 million Math Blaster's sold! The world's best-selling math program just got better!

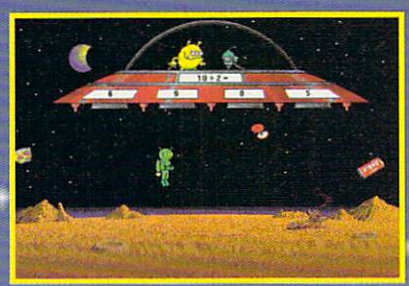
Oh no! The Trash Alien has captured Spot and left behind a trail of litter. In Trash Zapper, your mental math skills are needed to help clean up the mess.



The *Number Recycler* can convert trash into fuel but Blasternaut needs your problem-solving abilities to make it work. Recycle all the trash and you're ready to go!

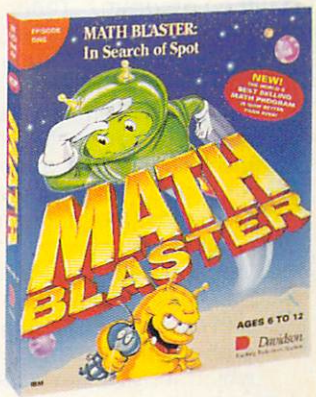


You've tracked the Trash Alien to his home planet. But you haven't saved Spot yet! Use your mental math skills to help Blasternaut calculate his way through the *Cave Runner* game.



Finally, Blasternaut and the Trash Alien are face to face in the *Math Blaster* game. It's a battle of the numbers and Spot's fate is in your hands—good luck!

Math Blaster:® In Search of Spot *launches the world's best-selling math program to a whole new level of learning and fun! Kids will join Blasternaut on an all-new action-packed adventure to rescue his robot pal Spot. As they search the universe, they'll boost their mental math and problem-solving skills into the stratosphere!*



IBM, Tandy and PC Compatibles
Windows version available Nov. 93

Ages 6 to 12

America's favorite math software for ten years running now gives parents and kids even more to love...

More math content than any other program!

Now with over **50,000** different problems available in nine key subject areas: Addition • Subtraction • Multiplication • Division • Fractions • Decimals • Percents—
Plus *two new topics:* Estimation and Number Patterns.

More fun than ever before!

Exciting new learning games, out-of-this-world VGA graphics, digitized speech, sound effects and music will keep kids so dazzled they'll never want to come down to Earth! And for even more variety, there are now two ways to play: focus on a single activity or take off on a mission that combines all four into one awesome learning adventure!

"Kids have always loved Math Blaster, and Math Blaster: In Search of Spot is no exception. It's even better than its predecessors–more fun and more educational."

Rob Bixby
Compute Magazine

Order Toll Free
(800) 545-7677 or (310) 793-0600

Suggested retail price:
$59.95 MS-DOS

Available at Babbage's, Best Buy, CompUSA, Egghead Software, Electronics Boutique, Software Etc. and other fine retailers.

Davidson.
Teaching Tools From Teachers
Circle Reader Service Number 151

sion. But if you choose Gemini, you're then able to select from any of the ten Gemini missions, as well as from a project overview. The overview summarizes the purpose and history of the selected program and can be printed for future reference. You can choose to watch a slide show or movie about the program. There are three Gemini movies: The Gemini Launch Sequence, Gemini-Agena Rendezvous Test, and Gemini Reentry and Splashdown. The high-resolution images are beautiful and finely detailed throughout the program.

When you select an individual mission, the mission patch is displayed along with descriptive text, and several options are presented which let you view mission statistics, astronaut profiles, or a slide show of the mission. All relevant facts such as mission dates are presented on the control panel.

The Express Tours selection presents narrated slide-show histories of various aspects of the space program. You can view a full-screen slide show, but there's no provision to stop and start the show when using this option. With the simple slide show, you view smaller pictures on the control panel at your own pace, and you can blow up pictures you're particularly interested in to full-screen size.

The Americans in Space package includes versions for both MPCs and Macintoshes. With over an hour of full-motion video, more than 500 images, and narration to accompany it all, this is a fascinating multimedia presentation. We can highly recommend this wonderful space program.

BRUCE M. BOWDEN and
MARGARET A. BOWDEN

Multicom
(800) 245-4525
$59.95
Circle Reader Service Number 441

FREDDY PHARKAS, FRONTIER PHARMACIST

If you drop everything to catch *Blazing Saddles* on the late show—for the 10th or 12th time—then Freddy Pharkas, Frontier Pharmacist is the game for you. Al Lowe, creator of the megahit Leisure Suit Larry series, straps on his spurs to give the Wild West a sharp and painfully funny poke in the ribs. Depending on your tastes and social sensibilities, this could be one of Sierra On-Line's most enjoyable graphic adventures yet.

Like Mel Brooks's classic western parody, Lowe's creation allows no saddlesore stereotypes to go unscathed. True to form, Lowe also manages to slap, tickle, and goose just about every ethnic, religious, and sexual persuasion on both sides of the Rockies. Although not as entirely adult themed as the Leisure Suit Larry games, there are many innuendos that may make you cringe applied to both man and beast. Authentic western outhouse humor also plays a role, showcasing Lowe's perennial sixth-grade disposition. It's all in great fun, and a solid new direction for this talented comedy writer.

The game gets off to a hilarious start with the sing-along "Ballad of Freddy Pharkas," describing how our hero gave up a career as a gunslinger for his first true love: pharmacy. Freddy sets up shop in a friendly, but very weird, gold-rush town, where he catches wind of a plot to destroy the tiny mudhole. To save the day, you must solve a sequence of puzzles involving everything from stampedes (of snails, no less) to outbreaks of terminal flatulence. Most solutions are object-oriented, merely requiring you to collect and combine various graphic elements. The fun isn't just in solving the puzzles but in jumping through increasingly outrageous hoops along the way.

The game's best challenges unfold in Freddy's backroom laboratory. Armed with the superbly written *Modern-Day Book of Health and Hygiene,* you must diagnose various maladies and correctly mix the prescribed remedy. It's a fun break from the action, and by happy coincidence, it also doubles as the game's copy protection. Other diversions include realtime gun duels, sly card sharks, cantankerous tinhorns, and a borderline-tasteless interlude with a sheep. What little free time you do have is spent courting the shy, lovely schoolmarm.

Fashioned with Sierra's new graphic interface, gameplay flows smoothly. You navigate the game with a series of western-related icons: cowboy boots (walk), wire-rimmed spectacles (look), a gloved hand (touch—or grope, as the case may be), and a saddlebag (inventory). Graphics are good, rendered with suitable cowpoke panache, slightly hampered by the use of low-resolution VGA. Ambient sound effects help accent the humor, but it would be nice to see (and hear) an all-talkie CD-ROM version.

Are you tired and run-down from the usual graphic adventures? Slinging sight gags and one-liners, Freddy Pharkas, Frontier Pharmacist delivers the cure for what ails you.

SCOTT A. MAY

Sierra On-Line
(800) 326-6654
$69.95
Circle Reader Service Number 442

COACTIVE CONNECTORS

The Coactive Connector box promises that the network device is "so easy, you can install each computer in five minutes. By yourself." If you've ever tried to network computers before, you'll greet that claim with skepticism. But it's absolutely true.

The Coactive Connector for DOS and the Coactive Connector for Windows are networking products for small offices. Any combination of up to 32 DOS and Windows personal computers is possible. There is also a Coactive Connector for Macintosh which ties Macintosh computers and Apple LaserWriter printers into your DOS/Windows network—a handy way to get inexpensive cross-platform connectivity.

Physically, the Coactive Connectors for DOS and Windows are small units that plug into the parallel ports of your computers. The port can still host a printer. The advantages of the Coactive Connectors are ease of installation, simple setup and administration of the network, and low cost per computer networked. *Low cost* translates to $149.95 per DOS computer and $29.95 per Mac added to the network.

We extensively tested a three-computer Coactive

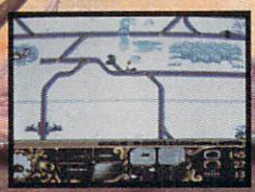
ARCTIC BARON

The year is 2022 and global warming is threatening the very existence of mankind. Scientists put "Operation Blind" into effect to reverse the process, but something goes seriously wrong! The Earth is plunged into a nuclear winter and the sun becomes permanently eclipsed.

Centuries after the disaster, a new world order has been established and the Viking Union hold the power. They dominate the rail network and the only source of money – coal – and aren't going to easily give up their monopoly.

You command a gigantic steam powered train and use it to journey to towns to trade in supplies, slaves and mammoths. Your raw instincts will help you pull your survival plan together from the information you obtain along the way. Your mission is vital: free the planet from perpetual winter and economic slavery.

Your quest for the sun is one of danger and excitement... become the Arctic Baron... free your people!



Available for IBM PC and Amiga

ReadySoft Incorporated
30 Wertheim Court,Suite 2
Richmond Hill, Ontario, Canada L4B 1B9
Tel: (905) 731-4175 Fax: (905) 764-8867

Silmarils

READYSOFT

Circle Reader Service Number 246

© 1992 Silmarils – All rights reserved. Distributed by ReadySoft Incorporated.

Connector network here, running two machines with Windows and one machine using just MS-DOS. The only difference between the Coactive Connector for DOS and Coactive Connector for Windows is the software.

Installation is easy. The manuals, entitled How to Hook This Stuff Up, are full of clear drawings showing step-by-step hookup. We transferred files from machine to machine, printed files from all computers on the network using a printer attached to just one computer, and ran programs installed on one computer from all the others on the network. No problems were encountered.

The Coactive Connectors are an excellent selection for a small office's first network. Larger networks cost hundreds of dollars more and require technicians to install. Some also need an additional computer to act as a file server, which is a computer dedicated to storage of programs and files available to everyone on the network. The Coactive Connectors eliminate the file server by sharing the resources of your present computers.

The major disadvantage is relatively slow speed. This is true of any peer-to-peer network which is sharing resources instead of using a separate file server. If your network usage calls for many users transferring vast amounts of data, go to a full-fledged, Novell-type network. Otherwise, the Coactive Connectors will have you networking literally in minutes.

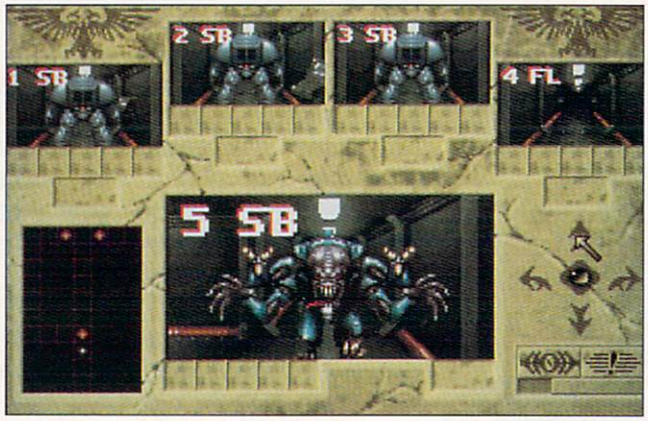
RALPH ROBERTS

Coactive Computing
(415) 802-1080
$149.95

Circle Reader Service Number 443

SPACE HULK

The Space Marines are looking for a few good men. So are the Genestealers, though admittedly not for the same purpose. Welcome to the dark, feral world of Space Hulk, a fast-paced, ultraviolent adaptation of the Games Workshop's popular tabletop game. Fans of the movie *Alien* will quickly identify the action as a bug-hunt supreme, playing space tag against the deadliest of prey. The winners move on to greater glory; losers decorate the walls with red.



Electronic Arts' Space Hulk is an ultraviolent blast-fest that's reminiscent of the action in the Alien *films.*

The manual sets up the savage story line about a race of superbeings bent on universal domination. Hidden in huge, abandoned ships known as Space Hulks, the Genestealers spread their mutated seed throughout the galaxies. Summoned by the Emperor, you play an Imperial Captain, charged with leading squads of elite Terminators on ship-to-ship missions to "cleanse and burn."

There's plenty here to keep you busy: five basic and nine advanced tutorials, 16 single and multisquad scenarios, and the exhausting 22-mission Deathwing Campaign. Mission objectives vary but usually require securing specific areas; retrieving artifacts; and, most importantly, getting them before they get you.

Your role is to direct the action from two distinct vantage points: first-person tactical and top-down strategic views. The first offers the standard 3-D look down dark, uninviting corridors of doom. You control one marine at a time but supervise or switch control between nine others via small closed-circuit monitors. Realistic lighting effects limit your forward vision, forcing you to rely on sometimes unreliable local-area scanners. Your best clues are often based on sounds: creaks and rattles, hissing steam, low throaty growls, and distant screams, all crisply digitized for maximum goosebump quotient. Sometimes you see the attacks coming, while often these fleet, multi-clawed creatures seem to jump right out of the bulkhead and into your face. As expected, you have outrageous short- and long-range weaponry at your side, with names like Lightning Claws, Heavy Flamer, and Storm Bolter. Victims explode with a sickly satisfying belch of blood and body parts that don't magically disappear but pile up like last week's garbage. It's demented, to be sure, yet irresistibly exhilarating when the action erupts in nonstop, heart-pounding carnage.

The realtime strategic planning screen offers an overall view of each mission. Here you can program movement and firing commands for each Terminator in your assigned squads. This multitasking feature is not only a tremendous boon to your mission success but also cranks up the intensity several notches. The Freeze Time tool momentarily suspends the action, allowing you to dry your palms and gather what's left of your wits.

Armed with a slick, streamlined interface and wondrously deranged special effects, Space Hulk is a bug blaster's nightmare come true.

SCOTT A. MAY

Electronic Arts
(800) 245-4525
$59.95

Circle Reader Service Number 444

ECCO Professional

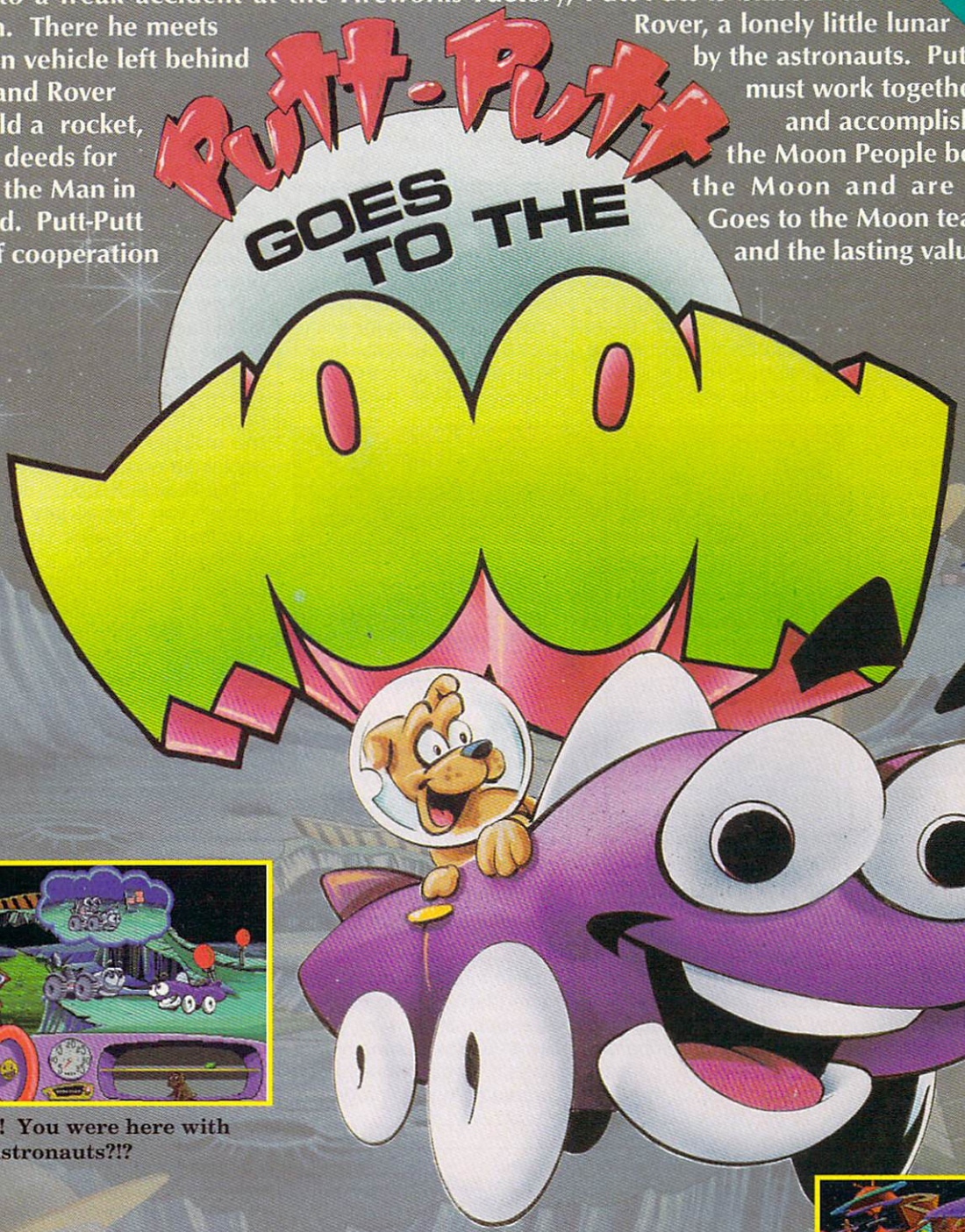
ECCO Professional is a Windows Personal Information Manager (PIM) that's also a database. Happily, though, it doesn't feel like a database most of the time.

ECCO is intuitive throughout, with three basic views: PhoneBook, Calendar, and Outline. To create an appointment or action item with someone in your PhoneBook, simply drag that person's name from the PhoneBook to the Calendar or To-Do list. ECCO notes the ap-

Purple Car Lands on Moon!

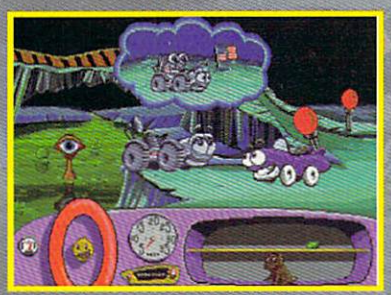
Due to a freak accident at the Fireworks Factory, Putt-Putt is blasted to the moon. There he meets Rover, a lonely little lunar terrain vehicle left behind by the astronauts. Putt-Putt and Rover must work together to rebuild a rocket, and accomplish a few good deeds for the Moon People before they meet the Man in the Moon and are homeward bound. Putt-Putt Goes to the Moon teaches the benefits of cooperation and the lasting value of friendship.

For a **FREE Demo**
IBM-PC or Color Macintosh
Call (206) 485-1212
*Offer good while supplies last



Ages 3–8

IT TALKS!



Wow! You were here with the astronauts?!?

Want to buy our rocket? It's for sale. Only 10 glowing moon crystals.

Hello! I'm Governor Moonbeam. And you must be?

HUMONGOUS Junior Adventures ENTERTAINMENT

Circle Reader Service Number 111

pointment in both places, inserting a note with the phone number.

Highlight a name and click on a Dialer icon, and an autodial window pops up, a Logged Call entry appears below the name in the PhoneBook, and logging begins when you dial.

You can import either tab-separated or comma-separated values files into the PhoneBook. Just show ECCO which fields in the import file match preset ones in the ECCO file and give names to fields that don't already exist in ECCO. (Sharp Wizard and HP 95LX owners can order a free data-transfer application; others may purchase a file-conversion program that supports numerous data formats.)

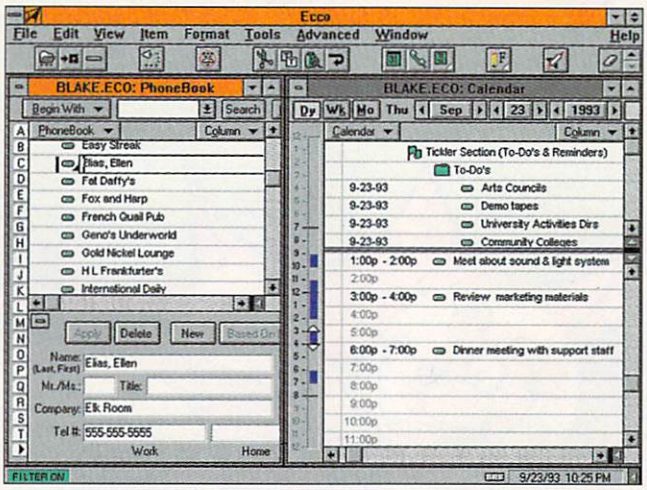
You can export your information for use in a mail merge or use the ECCO Shooter, an arrow icon that sticks to the title bar of the active window. The Shooter lets you exchange data with another Windows program as if you'd used the clipboard cut-and-paste functions by selecting a program from a pop-up list. ECCO also supports object linking and embedding.

ECCO makes linking information effortless. When you drag an item (person, appointment, outline, to-do) from one view to another, a copy remains in the original location. Edit any of these copies, and the others change, too. This way you can have several methods of accessing the information later.

You can view combinations of a personal-organizer page and a spreadsheet, with a fixed column on the left and scrolling columns on the right for extra information. You can navigate quickly in the views, and you can search, sort, and filter the items. Items in any view can be text or graphics.

The Calendar View provides daily, weekly, and monthly displays and also contains the Tickler (to-do list). You can also set simple or custom alarms and create recurring events.

has many more features than could be covered here. It takes a while to get used to some of ECCO's advanced features, but it's useful straight out of the box. If you're just looking for a simple day book, you might find Lotus Organizer or the shareware Time and Chaos



ECCO Professional combines the best features of PIMs and outline processors; a "lite" version is now available as well.

As with the other views, Outlines can display columns of dates, names, or other useful information. It's easy to change the color or style of all items on a particular level, and you can expand and collapse the Outline as you work.

Folders let you organize items that you want to keep together. Standard folders include the PhoneBook and Scheduling folders, but you can easily create your own. ECCO lets you drag items into a folder or drag folders into or out of outlines (to view or remove them).

ECCO includes templates to help you get started with specific uses: research, sales, legalities, and project management. It handles information and ideas well, produces nice printouts in handy organizer sizes, and a more economical choice. But ECCO's outline and database functions make it far more than a simple PIM. Arabesque is so sure you'll like it that the company provides a 60-day money-back guarantee on the program.

J. BLAKE LAMBERT

Arabesque
(206) 869-9600
$395

Circle Reader Service Number 445

GUINNESS MULTIMEDIA DISC OF RECORDS

The *Guinness Book of Records,* first published in 1955, is the world's best-selling copyrighted book. Now, with flair and a solid, well-thought-out design, the Guinness Multimedia Disc of Records brings that same popular content to your multimedia PC.

Installation is easy. The drivers for the program take up about 4MB of storage on your hard drive. The program is completely menu- and button-driven, and you're given many choices on how to navigate through the masses of information contained on the disc.

The Browse Records button lets you choose any record from "Acrobatics: Longest Inverted Flight" to "Zoos: Oldest." Many of the 3621 entries are fairly detailed. There's also the traditional *Guinness* inclusion of obscure knowledge among the more common facts. For example, in the "Words" category, you'll find the longest Icelandic word, *Haecstaretttarmalautningsmaour,* with 29 Icelandic letters (transliterating to 31 in English characters) and meaning "supreme court barrister."

Using the Word Search button, you can find records related to a specific subject. You can use *and, or,* and *not* operatives to narrow the search. For example, searching for *computer* brings up 30 matching records. These start with a reference to "Prehistoric Reptiles: Largest chelonians," which is listed because of a mention in the article of computed weight. In this case you could narrow the search by looking for *computer and machine.*

You can search by category using the Topic Index button, which brings up a list of 11 categories ranging from "Earth and Space" to "Sports and Games." Each of these has subcategories. "Science and Technology" provides 14 subcategories ranging from "Elements" to "Space Flight." If you choose "Elements," you're

A rift in the fabric of time and space, a deadly foe from the past and the judgment of all humanity await the crew of the Starship Enterprise™.

... the five year mission continues.

STAR TREK: JUDGMENT RITES™

Join Captain James T. Kirk and the crew of the U.S.S. Enterprise™ in all new episodes that place *you* in command. Beam down to alien worlds, communicate with new life forms and take the helm as you join the legendary crew of the Starship Enterprise™ in their continuing five year mission to explore the final frontier.

Interplay

17922 Fitch Ave.
Irvine, CA 92714
(714) 553-6678

Software © 1993 Interplay Productions, Inc. All rights reserved. Star Trek™,® and © 1993 Paramount Pictures. All rights reserved.
Star Trek is a registered trademark of Paramount Pictures.

Circle Reader Service Number 253

given three topics: "Matter," "Subnuclear Particles," and "The 109 Elements." Each of these selections provides more information than you'd expect from a database. Under "The 109 Elements," for example, you don't simply get a periodic table, but an actual reference to such things as which elements are most common, which are the rarest, which have the highest toxicity, and so on.

Half of the fun of the paper edition is just flipping through and randomly discovering information. The Random Record Explorer button will let you do this with the disc version. There's also a Superlatives Index button, which lets you select records by superlatives such as *best, worst, oldest, youngest, windiest, hottest,* and *widest.*

Select the Picture Index button to start with the same 11 categories as the Topic Index. From here you can access the 1062 images on the CD.

The Movie Index button gives you a total of 37 movies. This index, to our dismay, had only four categories: "Animals and the Earth," "Human Beings," "Technology and Space," and "Transportation." We found that most of these didn't have sound—not even the entry for the howling monkey! We did like the fact that movies can be advanced frame by frame, forward or backward, to examine details, but we didn't like the lack of sound or the jerkiness of the animations that did have sound.

Although a help reference booklet isn't included with the packaging, there's extensive help on the CD itself. In most cases, though, you won't need it; the program is very intuitively designed. Most of the information here is trivial, but it's often educational and always a lot of fun.

BRUCE M. BOWDEN and
MARGARET A. BOWDEN

Grolier Electronic Publishing
(203) 797-3530
$99

Circle Reader Service Number 446

The NCR 3150 sports a fast 25-MHz 486SX processor, available active-matrix color, and a front-mounted trackball.

NCR 3150

Two years ago, NCR established itself as an important player in the notebook market with the Safari 3170. This year, it's introduced another major machine—the 3150 notebook.

The 3150 is sleek, light, and fast. It's powered by a 25-MHz 486SX processor, and has a 9.5-inch screen, local-bus video, PCMCIA Type 2 slot, a 1.44MB floppy drive, and external trackball. The 3150 also comes with 4MB of RAM (upgradeable to 20MB), and a removable hard disk of 80-170MB capacity. Video options include monochrome, passive-matrix color, and active-matrix color. The monochrome and passive matrix displays can be upgraded to active matrix.

The review unit I tested featured active-matrix LCD, an 80MB hard disk (too small for a machine of this caliber), and 4MB of RAM.

Looking at the outside of the 3150 you'll find a sturdy, attractive case that's dark brown with putty details. Open the case and you'll see these same colors repeated with turquoise accents on important keys. Status information is provided by small LEDs directly under the display.

The 3170's keyboard is very good for a notebook. The layout is nearly full-sized, with an inverted T for cursor keys. There are also dedicated Page Up, Page Down, Home, and End keys, all of which are a plus.

As I mentioned above, there's a trackball which you can attach to the front of the machine. When I use a trackball, I prefer it to be on the side of the computer, and I found this front position to be awkward.

If you don't want to use the trackball, however, you can configure the cursor keys to do double-duty for mouse movement. I found this arrangement to work very well in Windows, but the key combination you have to use to switch back and forth between cursor and mouse takes some getting used to.

The 3150's active matrix screen is excellent. It's one of the best color displays I've seen on a notebook. The colors are sharp and saturated, and it's a joy to use.

This machine was built to run Windows and it shows. With the 486 processor and local bus video, Windows really moves. If you're used to laptops being sluggish with Windows, you'll really be surprised with the 3150.

The 3150 can use either nickel hydride (NiMH) or nickel cadmium (NiCAD) batteries. The computer senses which type of battery is attached, and batteries can be changed while the computer is on. Power-saving features are everywhere in this machine, but battery life is still about two hours for the color model.

The cost for the 3150 varies according to the screen and hard disk options, but prices range from $1,995 for the monochrome model with a 80MB hard drive to $3,805 for an active-matrix color model with a 170MB hard drive.

The 3150 is well-designed, well-built, fast, and stylish. With a removable hard drive, PCMCIA slot, upgradeable video, it's also modular and easy to en-

An AMTEX Pinball Classic ♦ Game #2

Deal.

This is what pinball was in the days of the classics. A flipper, a ball, and a few elusive targets. But don't be fooled by simplicity. This isn't a "luck of the draw" card game. When you have to shoot for the high hand, skill and strategy are the rule. Hit the cards out of order, and you're back where you started. It's a challenge that made Royal Flush one of Gottlieb's most popular drop target games. Now AMTEX takes you back to the old pinball arcade with the authentic sights, sounds and flipper sensation of the original. Learn to maneuver the ball through the open playing field for the ultimate score — "The White Joker". Odds are, you can bet on Royal Flush to keep you challenged. But don't gamble when it comes to computer pinball. Choose the proven winner. AMTEX.

AMTEX proudly announces their latest release in the Pinball Classic series! With the same award-winning technology that brought you Tristan™ and Eight Ball Deluxe™, AMTEX continues to reintroduce some of the greatest pinball games in history! Also look for FunHouse™ and the pinball construction kit, soon to be released. For PC and Mac systems.

Gottlieb
Pinball By Premier

Distributed By
Broderbund®

ROYAL FLUSH™

Coming soon at a suggested retail price of $49.95

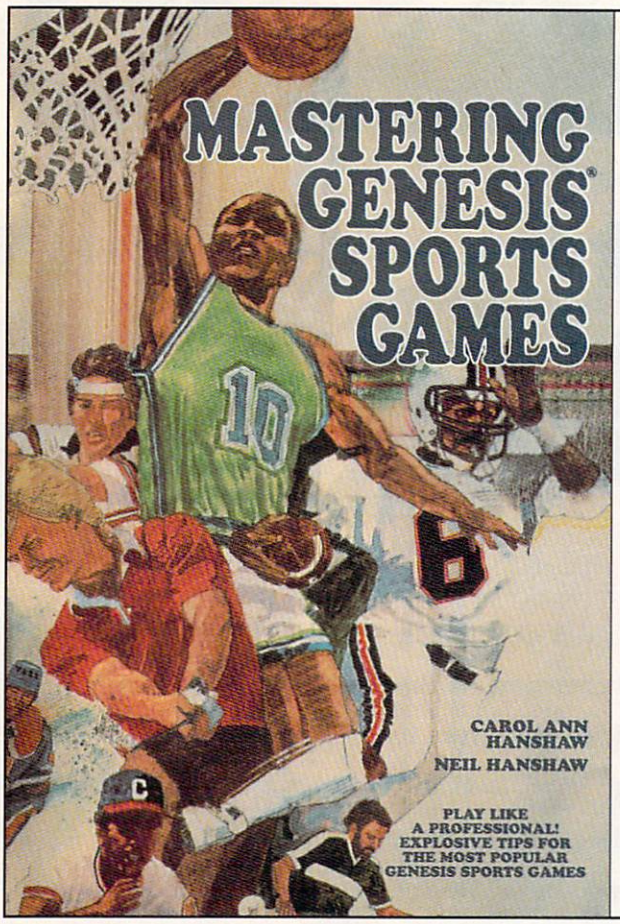
Circle Reader Service Number 157

AMTEX™

You can't get any closer than this !

For product information, send your name and address to:
AMTEX Software Corporation,
P.O. Box 572, Belleville, Ontario,
Canada K8N 5B2 or call
1 613 967-7900
Fax: 1 613 967-7902

All trademarks are the property of their respective companies.



Mastering Genesis™ Sports Games

Whether you play football, baseball, golf, or any other sports games on your Sega Genesis, you'll find the information and tips you need in this guide. Tips and strategies for 19 of the most popular Genesis sports games.

To order your copy send $9.95 plus $2.50 for shipping and handling (U.S., $4 to Canada and $6 other) to COMPUTE Books, c/o CCC, 2500 McClellan Ave., Pennsauken, NJ 08109. (Residents of NC, NJ, and NY please add appropriate tax; Canadian orders add 7% Good and Services Tax.) All orders must be paid in U.S. funds drawn on a U.S. bank. Mastercard and VISA orders accepted, please include full card number and expiration date. Orders will be shipped via UPS Ground Service. Offer good while supplies last.

Sega and Genesis are trademarks of SEGA.

REVIEWS

hance. You may pay more for this machine than a mail-order clone, but it might just be worth the investment.

CLIFTON KARNES

NCR
(800) 225-5627
$1995-$3805

Circle Reader Service Number 447

PRINCE OF PERSIA 2

Prince of Persia 2: The Shadow & the Flame will probably be called an action game by many players. Then why do I feel I've been on such a splendid adventure?

Choreographed by Jordan Mechner (who also designed the original), this sequel has everything that Prince of Persia offers and much more. At its heart, it's the same basic game: traditional sword fighting, taking baby steps up to ledges and giant leaps of faith beyond them, trap-evading, abyss-width estimating, ledge-grabbing, ledge-missing (oops), and of course the inevitable red-blotch-among-the-spikes-regarding. You'll be doing a lot of this last one in Prince of Persia 2.

Not to mention some head-scratching. Puzzles of timing and distance were built into the very structure of Prince of Persia, but puzzles for puzzles' sake seem to be more conspicuous here. For instance, it's quite possible to ostensibly complete a segment but then be utterly bewildered as to how to progress into the next because you haven't mastered a given mechanism or trick.

That said, there's a real sense of progression here; it's not just a series of caves with attitude. The action picks up from the moment the prince leaps through the palace window. It follows him across rooftops and as he dives for the stern of a departing ship, on a long trek through caves (familiar terrain from the original game), and on into a ruined palace—a place of disembodied heads that scream when they spot you.

The lifelike animation in Prince of Persia grabbed everyone's attention. Prince of Persia 2 is as realistic as ever (though maybe just a touch less fluid, perhaps on account of the complexity of the sumptuous VGA graphics), and not simply when the character is pulling himself up a ledge or long jumping. Realistic animation comes into play even as the prince plummets to his doom or raises a fiery, blackened hand from his lava tomb.

But while graphic enough to be nasty fun, those death scenes are never really grisly. Prince of Persia 2 has an exquisite sense of balance and proportion and never goes overboard. There's honestly not much in Prince of Persia 2 I'd change, save the shrieks the prince lets loose when he falls too far. (Die like a hero, you bozo.) This is not simply a worthy sequel but also a wonderful adventure in its own right. The old Prince of Persia has grown up, and Prince of Persia 2 is a true king.

PETER OLAFSON

Brøderbund
(415) 382-4400
$44.95

Circle Reader Service Number 448

FLASHBACK

Action-adventure games just don't get much hotter than Flashback, SSI's dazzling follow-up to last year's breakthrough hit, Out of This World. Far bigger and bolder than its predecessor, the title melds cinematic techniques with traditional puzzle-oriented, platform-style arcade fare.

The story unfolds in the year 2142, cast in the murky off-world tones of a novella by Philip K. Dick (whose

POSITRONIC BRIDGE

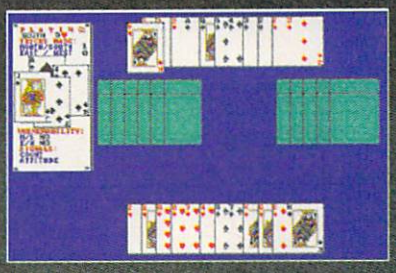
Artificial Intelligence Based

Artificial Intelligence now a reality!

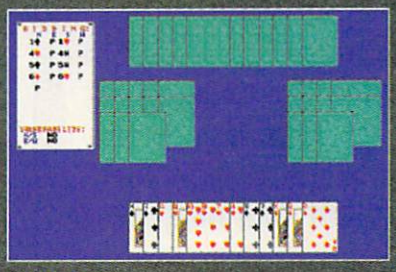
The challenge of computer bridge will never be the same with the introduction of Positronic Bridge, the first artificial intelligence based bridge game. Whether you are a beginner or expert, Positronic Bridge with its cutting-edge computing technology automatically improves its skill level as you improve yours, so the game always remains a challenge.

Included free with the program is the best-selling book "The Basics of Winning Bridge" that will have you playing bridge in just one hour. You can then improve your bridge skills using the practice mode and help keys.

Other features include: "No Cheat" gameplay (the computer doesn't look at your cards to make decisions), rubber or duplicate bridge, standard bidding, simple signaling, random deals or preset input, show/hide opponents cards.



Play Screen



Bidding Screen

Endorsed By Bridge Experts

"You can't outgrow Positronic Bridge. *Two thumbs up!"*
Mike Lawrence, Berkeley, CA, USA

"Positronic Bridge *will give you the battle of your life."*
Eric Kokish, Montreal, Canada

"The game you can teach to be as good as you are"
Tony Forrester, London, England

Positronic

READYSOFT

ReadySoft Incorporated
30 Wertheim Court,Suite 2
Richmond Hill, Ontario, Canada L4B 1B9
Tel: (416) 731-4175 Fax: (416) 764-8867

Circle Reader Service Number 163

For IBM PC and Compatibles

IS THERE ROMANCE IN YOUR FUTURE?

Live psychics reveal what the future holds for your love life.

LIVE! Specializing in questions of love

1-900 773-1002

$5 first min./$3 ea. addl. min.

Use the wisdom of psychic forces to guide you in money, career and happiness

1-900 773-OMEN

1-900-773-6636

$5 first min./$3 ea. addl. min.

TALK TO A LIVE PSYCHIC!

For entertainment purposes only. If you are under 18 years of age, please get parental permission. Live psychics are available 24 hours a day. Sponsored by Pet Inc., P.O. Box 166, Hollywood, CA 90078.

PH006

REVIEWS

work also inspired the films *Blade Runner* and *Total Recall*). You assume the role of Conrad Hart, a scientist who awakes in the synthetic jungles of Titan, Saturn's newly colonized moon. Robbed of your long-term memory and equipped with only a pistol, a Holocube, and the instinct for survival, you embark on a violent, wildly convoluted quest to regain your identity. The entire game boasts more than 200 screens, divided among six levels, for a total of 50 to 100 hours of realtime action. It's a demanding assignment that only the hardiest arcade gamers will survive.

The game's standout feature is undoubtedly its lifelike character animation, rotoscoped at a fluid, film-quality rate of 24 frames per second. This phenomenal technique, similar to that used in Jordan Mechner's Prince of Persia series, helps break the action free of its two-dimensional boundaries. It's so remarkable, in fact, that you might spend your first few sessions simply admiring the lead character's extraordinary range of physical movement: running, leaping, falling, tumbling, shooting, and other motions, both subtle and exaggerated.

Scattered throughout the game are more than 75 cinematic segues and noninteractive plot enhancements, designed to pull you into the dark, serpentine story line. The game successfully retains the free-form nature of its arcade roots, fashioned along a linear, sequentially structured series of challenges. In Titan's domed city of New Washington, for example, you must obtain a work permit and complete a series of progressively dangerous jobs, earning money for a trip back to Earth. Other highlights include a guest appearance on the lethal TV game show "Death Tower," a capture by mutant aliens, and an absolutely riveting final showdown with a superhuman power. Pass codes allow you to restart your adventure at the beginning of the last level reached.

Nice touches abound, like the explosive report and subtle recoil of your trusty revolver and the incredibly detailed spot animation that enlivens almost every scene. Controls are streamlined and highly responsive, whether you use the keyboard or joystick. The game has excellent support for the four-button Gravis PC GamePad. Three skill levels—increasing both the number and tenacity of your opponents—help keep the challenge fresh and the replay value high.

One of several recent technology milestones in PC arcade entertainment, SSI's Flashback invites and deserves enthusiastic praise.

SCOTT A. MAY

Strategic Simulations
Distributed by Electronic Arts
(800) 245-4525
$49.95

Circle Reader Service Number 449

LIGHTNING CD

Newcomers to the world of multimedia computing expect to be dazzled, and few are disappointed. Experienced users, however, know not to expect miracles from a CD-ROM drive. Although one of the most cost-effective means of data retrieval, with drives starting as low as $150 and discs capable of holding up to 650MB of information, CD-ROM drives are no speed demons. Even top-of-the-line CD-ROM drives find and transfer data at a speed about 15 times slower than the average hard drive.

Before you get discouraged, take a look at Lucid Corporation's excellent Lightning CD, a data-caching utility designed specifically for CD-ROM drives. The company claims speed increases of more than 1000 percent in best-case scenarios. Realistically, you can expect an average, consistent speed increase of 20-50 times. For many DOS and Windows/MPC applications, those little numbers can make a huge difference in the performance of your programs.

How does it work? Like all disk caches, Lightning CD analyzes and stores frequently used information in RAM. When a program asks for data from hard disk or CD, the computer first looks to its memory cache, and if the data is there it rockets this information to the CPU in a fraction of the normal access time. Caching won't eliminate disc access, but can substantially decrease drive activity. In the data-intensive world of CD-ROM, your computer needs all the help it can get.

Unlike some CD-caching products which store recently accessed data on your hard drive, Lightning CD caches directly from RAM. Of course, the more RAM you have, the more information you can store, which determines the overall effectiveness of the cache. If you can't afford at least a 2MB RAM cache—culled from either expanded or extended memory—you won't utilize the program's full power.

A cache works only with frequently repeated disk activities. Although Lucid clearly markets the product at multimedia game players, the linear structure of most CD-based games—such as role-playing or adventures—means the

NOW AVAILABLE IN BOTH PC/WINDOWS® AND MACINTOSH® VERSIONS

Now,

"I'm a Penthouse Photographer"

doesn't have to be just a pick-up line.

Introducing Penthouse Interactive's Virtual Photographers Studio.

So what if you've never held a camera. Penthouse Interactive's Virtual Photo Shoot™ puts you in control of three incredible Penthouse photo shoots. 90 minutes of full-motion (15 fps), high quality video images.

With it, you can use your computer controls to direct three gorgeous Penthouse Pets to a variety of poses, while you choose from multiple camera angles, including close-ups.

Snap pictures of your favorite pets and save them to your hard disk. Later, you can "develop" them by printing out high-resolution color or B&W copies (depending on your printer).

Wondering if you could really cut it as a Penthouse photographer? During the session, the Pets' comments will let you know. And Bob Guccione himself will critique your finished photos.

No matter how well Mr. Guccione says you're doing, you'll want to practice your photography skills diligently, because the game is equipped with hidden surprises to reward your dedication and curiosity.

But once you've exhausted your first three Pets, you can stimulate more interest with low-cost "Pet Packs" featuring new models that keep your shoots fresh and exciting.

Of course, just one taste of the allure of being a Penthouse Photographer is enough to start anyone thinking, "People get *paid* to do this?"

PC/Windows® Requirements: At least a 33mHz 386 with 4mb of RAM running Windows 3.1. A Video card that supports at least 256 colors (8-bit color). 16-bit color is preferred. A sound card, for example a SoundBlaster/Pro 16 or a Pro Audio Spectrum/16. Many modern computers are already equipped with sound cards, so be sure to check your configuration first. An MPC-compatible CD-ROM drive. A double speed drive (300kb/sec) is preferred.

Macintosh® Requirements: Any Macintosh® computer with an 8 bit (or better) color or grayscale display. A minimum of 5 megabytes of RAM running system 6.0.7 or 8 megabytes of RAM running system 7.0 or higher. A CD-ROM drive. A double-speed (300 KByte) drive is preferred. Apple system software 6.0.7 or higher. QuickTime 1.6 and HyperCard 2.1 are included in your PHI CD-ROM.

Please rush me the Penthouse Interactive CD-ROM:

$129.95 + $4.50 (shipping & handling) x _____ =$ _____ Total Orders =$ _____

Name _____ Address _____

City _____ State _____ Zip _____

❑ Check ❑ Money Order ❑ Visa ❑ Master Card Credit card holders call toll-free 1-800-466-9435

Card Acc't # _____ Exp. Date_____Signature_____

I certify that I am 18 years or older.

Check one: ❑ PC/WIndows ❑ Macintosh

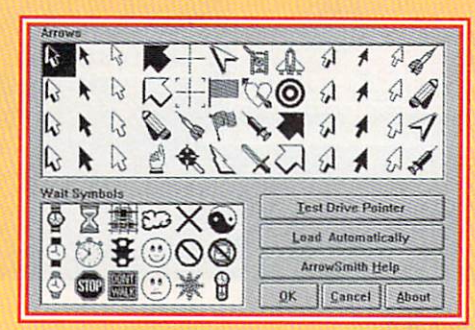
Payment must accompany order. Allow 4-6 weeks for delivery. CO401

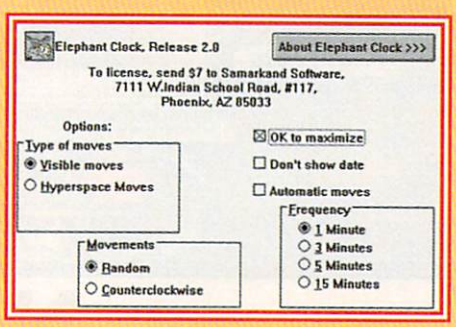
U. S. MAIL ORDER: PENTHOUSE VIDEO, INC., P.O. BOX 310173, NEWINGTON, CT. 06131

COMPUTE's ULTIMATE POWER DISK

Don't miss the dazzling, ready-to-run DOS and Windows programs on this issue's disk!

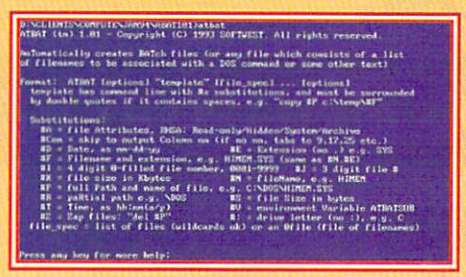
ArrowSmith
Banish Windows' mouse pointer and hourglass wait symbol from your system.

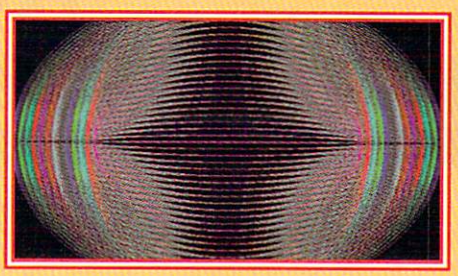




Elephant Clock
Your clock stays on top but out of the way with Elephant Clock.

ATBAT
ATBAT builds batch files that execute a repetitive command against a list of filenames.





Video Effects
Add eye-popping EGA/VGA video effects to your batch files with Video Effects.

Subscribe to COMPUTE's PC Disk, and every other month—six times a year—you'll receive a disk chock-full of great DOS and Windows shareware and freeware programs, including powerful applications, sleek utilities, and eye-popping graphics.

For Single Disks

YES! I want to power up my PC. Send me this issue's COMPUTE's PC Disk. I'll pay $9.95 for each 5¼-inch or 3½-inch disk plus $2.00 shipping and handling per disk.

Please indicate how many disks of each format you'd like:

_____ 5¼-inch disk(s) at $9.95 each
_____ 3½-inch disk(s) at $9.95 each
_____ Subtotal
_____ Sales Tax (Residents of NC and NY, please add appropriate sales tax for your area. Canadian orders, add 7% goods and services tax.)
_____ Shipping and Handling ($2.00 U.S. and Canada, $3.00 surface mail, $5.00 airmail per disk)
_____ Total Enclosed

Send your order to COMPUTE's PC Disk
324 W. Wendover Ave., Ste. 200
Greensboro, NC 27408

All orders must be paid in U.S. funds by check drawn on a U.S. bank or by money order. MasterCard or VISA accepted for orders over $20. This offer will be filled only at the above address and is not made in conjunction with any other magazine or disk subscription offer. Please allow 4–6 weeks for delivery of single issues or for subscription to begin. Sorry, but telephone orders cannot be accepted.
Disks available only for IBM PC and compatible computers.
Offer good while supplies last.

For Subscriptions

YES! I want to save even more! Start my one-year magazine and disk subscription to COMPUTE and COMPUTE's PC Disk right away.

_____ 5¼-inch $49.95 per year
_____ 3½-inch $49.95 per year

For delivery outside the U.S. or Canada, add $10.00 for postage and handling.

Name _____
Address _____
City _____
State/Province _____
ZIP/Postal Code _____
Total Enclosed _____
_____ Check or Money Order _____ MasterCard _____ VISA
Credit Card No. _____
Expiration Date _____
Signature _____
Daytime Telephone No. _____

Send your order to COMPUTE's PC Disk
P.O. Box 3244
Harlan, IA 51539-2424

Advertisers' Index

Reader Service Number/Advertiser	Page
194 Abacus	25
244 Access Software	66,67
252 Access Software	73,73
Adam & Eve	169
Adventure LearningWare	162
229 Amish Outlaw Shareware Co.	164
157 AMTEX Software Corporation	143
America OnLine	69
233 Arnie's Answers	160
137 Automap Inc.	105
Bare Bones Software	164
Best Personalized Books	163
173 Blue Valley Software	164
Boomerang Software	160
121 B.R.ROMS	169
167 CH Products	42
174 Citizen American Corp.	9
248 Colorado Spectrum	43
223 Colorado Spectrum	45
150 CompSult	168
240 Comptons NewMedia	89
122 Compuquest	49
155 Computer Associates	15
Computer Book Club	117
Computer Business Services	162
225 Computer Friends	166
204 Computer Gallery	164
ComputerWise Video	169
Comtrad	122,123
125 Creative Labs	3
144 CyberDreams	131
D & K Enterprises, Inc.	163
247 DataStorm Technologies	BC
151 Davidson	37
106 Davidson	135
161 Delphi Internet Services	44
131 DemoSource	161,169
208 Disk-Count Software	155
Dr T's Music Software	129
176 Electronic Arts	54,55
184 Electronic Arts	58,59
230 Fairbrothers	164
134 Fantazia concepts, Inc.	166
Fitness 1+	169
115 Free Spirit Software	151
198 HealthMax	35
117 Hollyware Entertainment	109
245 Home Automation Laboratories	168
111 Humongous Entertainment	139
IBM	5,53
183 Impressions	61
253 Interplay	141
222 Interplay	97
232 ISL Software Corporation	166
186 Jack Daniels	48
231 Jackson Marking Products Co. Inc.	162
Kid Secure of America	162
178 LACE	167
123 Logitech	13
199 Mallard Software	121
188 Mallard Software	119
206 Markle Foundation, The	150
158 Maxis	125,127
113 MECC	33
185 MediaVision	79
249 Megatech	39
119 MicroProse	65
MicroSoft	91
146 MicroTech	31
191 Needham's Electronics, Inc.	161
177 New World Computing	153
No-Frills Software	166
NRI/McGraw Hill	17i,133i
141 Odyssey OnLine	168
160 Origin	99
156 Pacific Microelectronics	165
168 Parsons Technology	19
221 PC Enterprises	164
237 PC Zone, The	29
250 PC-SIG	168
235 Pendragon Software Library	166
Penthouse Interactive CD ROM	147,157
107 Penthouse Modem	165
207 Pixel Perfect	132
224 Profit Group, The	167
243 Psygnosis	41
241 Psygnosis	113
226 Psygnosis	114
227 Psygnosis	81
Pure Entertainment	146
196 Quadra Interactive	47
Rain Forest, The	168
138 Ramco Computer Supplies	168
251 ReadySoft Inc	137
163 ReadySoft Inc.	145
246 ReadySoft Inc.	84
135 Revell CD	95
212 SafeSoft Systems Inc.	164
School of Computer Training	162
120 Serif PagePlus	11
116 SeXXy Software	168
Sierra OnLine	57i
261 Sierra OnLine	159
Sign Up	162
171 Sir Tech Software	51
109 Smart Luck Software	166
142 SMC/Software of the Month Club	160
126 SoftShoppe Inc.	166
210 Software Support International	164
Software Toolworks	IBC
145 SOMICH Enterprises	166
201 Spectrum Holobyte	IFC,1
154 Spirit of Discovery	23
203 Star Micronics	21
130 Starware Publishing	167
Stonehenge Viewpoint	169
179 SubLogic	82,83
202 Thinking Software Inc.	163
147 Thrustmaster	161
Time Warner	77i
193 Turtle Beach Systems	134
170 UNI-ROM	160
112 U.S. Robotics	27
127 Value Software Inc.	164
180 Velocity Development Corp.	93
132 Virgin Games	70,71
195 Virgin Games	62,63
172 Wedgwood Rental	166
128 Windows 900	165

Product Mart 160,161,162,163,164,165,166,167,168,169
Classfieds 170,171
Catalog Corner 169
104 COMPUTE Books 77,144,154,158

COMPUTE's Editor 900 Line	157
COMPUTE Free disk	133
COMPUTE's SharePak Disk Subscription	103
COMPUTE'S Ultimate PC Power Disk	148
Kathy's Exercise Video	77

CREDITS

Cover: Mark Wagoner; cover screen shot: Computer Support's Arts & Letters; page 6: E. Salem Krieger/The Image Bank; page 72: Molkenthin Studio/The Stock Market; page 73: Ron Chapple/FPG; pages 81–82, 84, 86, 88, 90, 92, 94: Rob Schuster; page 100: Mark Wagoner; page 106: Mark Wagoner; page 110: Mark Wagoner; page 115: Javier Romero Design/The Image Bank.

IMPORTANT NOTICE FOR COMPUTE DISK SUBSCRIBERS

COMPUTE offers two different disk products for PC readers: the SharePak disk and PC Disk. SharePak is monthly and has a subscription price of $59.95 for 5¼-inch disks and $64.95 for 3½-inch disks. A subscription to SharePak does not include a subscription to the magazine. PC Disk appears in odd-numbered months and has a subscription price of $49.95, which includes a subscription to COMPUTE. You can subscribe to either disk or to both, but a subscription to one does not include a subscription to the other.

COMPUTE LIBRARY CASES

Store your issues of COMPUTE in our new Custom Bound Library Cases made of blue simulated leather embossed with a white COMPUTE logo on the spine. It's built to last, and it will keep 12 issues in mint condition indefinitely. Each case has a gold transfer for recording the date. Send your check or money order ($8.95 each, 3 for $24.95, 6 for $45.95) postpaid USA orders only. Foreign orders add $1.50 additional for postage and handling per case.

TO: COMPUTE Magazine
Jesse Jones Industries
499 E. Erie Ave., Phila., PA 19134

CREDIT CARD HOLDERS
(orders over $15)
CALL TOLL FREE: 1-800-825-6690.

Or mail your order, clearly showing your account number and signature. PA. residents add 7% sales tax.

SATISFACTION GUARANTEED

[*Hillary not included.]

SimHealth gives you everything you need to re-make the American health care system—except the First Lady.

A unique new simulation software created by Maxis and brought to you by the Markle Foundation, SimHealth elects you leader. Now you can build a health policy in tune with *your* values, and watch it in action on a virtual "Main Street." Will you be re-elected? You'll certainly be more engaged, entertained and educated about our national debate than you ever thought possible. So why not give us a call? Because at $29.95—that's 25% off retail—SimHealth is just what the doctor ordered.

SIM HEALTH
A Democracy and Society Computer Simulation

1-800-U-CHANGE
1-800-824-2643

The Markle Foundation MAXIS™

Mail orders: SimHealth, PO Box 2096, Woodinville, WA 98072-2096. Requires an IBM or 100% compatible with DOS, a 386 microprocessor or greater, and a 256-color SVGA.

Circle Reader Service Number 206

REVIEWS

cache will be constantly flushed with new information, and therefore offer little benefit. Folks who use CD-based encyclopedias and other reference works, Photo-CD discs, and clip-art discs will see a more dramatic speedup than gamers. A game might seem a little snappier, but an encyclopedia search may go from 10 seconds to less than a second on subsequent accesses.

The manual does a good job of explaining the program's many command line parameters and configuration nuances. Besides speeding CDs, the program can also cache hard disks and floppy drives. Available options include a handy write-delay feature, memory lending, performance reports, write protection, and the ability to read ahead a user-defined number of sectors. This last feature is particularly useful for full-motion video.

The program performs flawlessly under both DOS and Windows, but doesn't support OS/2. The biggest problem most veteran users will encounter is simply finding room in the system configuration for another TSR. If your system has room, you can load the program entirely into upper memory.

No disk-caching program will magically transform a slow CD-ROM drive into a speed demon, nor will it perform similar miracles on slow video cards and ancient CPUs. For those with reasonable expectations, however, Lightning CD offers immediate rewards.

SCOTT A. MAY

LUCID
(800) 967-5550
$79.95

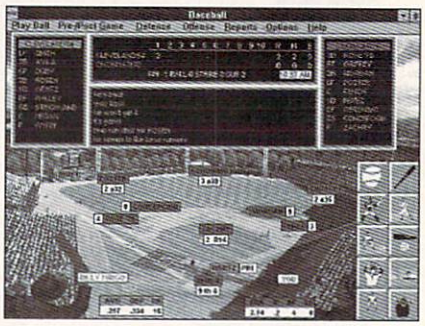
Circle Reader Service Number 450

BASEBALL FOR WINDOWS

Don't be alarmed: The sound of breaking glass you hear is merely another barrier broken in the field of Windows-based entertainment software. Miller Associates' Baseball for Windows, improved from the best-selling DOS version, is stunning in its scope and quality of presentation, setting a new standard for strategy sports games.

The program incorporates four distinct modules: Baseball (the game itself), Advanced Draft, League Manager, and StatMaster. The action is purely statistical yet still manages to stir considerable excitement with optional real-time play management and press-box play-by-play. Adding to the overall ambiance are several handsomely rendered 16- or 256-color ballpark background graphics.

Managerial, coaching, and statistical reporting features are overwhelming and simply too numerous to mention. Suffice it to say that every aspect of professional baseball, no matter how large or small, is here—from spring training to postseason. The program comes with three Old Timer team collections and is compatible with more than 50 season disks available by the publisher.



This game proves Windows is good for more than puzzle and card games.

Multitasking allows you to play two games simultaneously or manage league affairs while a game plays in the background. The computing price is a bit steep, requiring at least 3MB RAM and a fast CPU (a 386 running at 20 MHz is the bare minimum; a 486 is great). It's power well spent, however—for hardcore baseball fans, it doesn't get any better than this.

SCOTT A. MAY

Miller Associates
(800) 654-5472
$69.95

Circle Reader Service Number 451

B.A.B.Y.

If you're interested in starting a family or if you're expecting a child in the near future, you might find B.A.B.Y.: Birth and Baby Years to be a fun and informative way to pass the time before the birth of your baby and after your child is born.

The program starts with information on fertility and conception, analyzing your menstrual schedule to determine and graph peak days of fertility. Once you've found out you're pregnant, it's simple to get to the Timetable box and type in the date of your last menstruation. Instantly, the program calculates the dates for the beginning of each of the three trimesters, tells you how many days into the pregnancy you are and how many days are left and gives you your due date.

Once the dates are established,

Free Spirit Software CD-ROM

1-800-638-5757

Mon - Fri: 8am - 9 pm Sat: 7:30 am - 7:30 pm Sun: 9 am - 7:30 pm EST

International Orders: (317) 878-4738 FAX Orders: (317) 878-4751

Chestnut CD-ROMS

your choice $12 each

Bibles & Religion - New & Old Testaments, study guides, covers Judaism, Christianity, Islam
Clipart Goliath - Thousands of images for all uses, in PCX & TIFF format! For DTP programs
Encyclopedia of Sound - Over 250 sound files by the Music Factory in WAV format
Complete Bookshop - An entire bookshop. Includes: classics, poetry, humor, history, more!
Deathstar Arcade Battles - Exciting VGA space wars, shoot-em-ups, sports, & more
Dictionaries & Language - Dictionaries, thesaurus, word proc, style/spell checkers, foreign languages
HAM Radio v3.0 - Packet radio, satellite, freq lists, service, mods, SSTV, FCC regs, exams, more!
Our Solar System - Exciting NASA photos & planetarium programs, star/planet locators
Shareware Overload! - 600MB, all kinds of applications, ZIPPED! Lots of Windows progs, & games
Sound Sensations! - Sound Effects, voices, music, utils, for AdLib & SoundBlaster, & other cards
TechnoTools - C/C++, Basic, dBase, networking, Unix, OS/2, Windows, assembly, Pascal, more!
Too Many Typefonts - Countless typefonts in ATM, TrueType, Ghostscript, HP Laser, and more.
Windoware - Utilities, wallpaper, education, icons, font installers, games, and more for Windows.
World Traveler - Photos by Michael McGrath & Paul Elmendorf in PCX and GIF format

NEW! Chesnut CD-ROM Titles

Legal Guide - 500 legal forms form the authors of BBS Legal Guide
Gardening - Handbook for the home gardener with layout, planting instructions, etc.
Computer Reference Library - Step-by-step hardware and software tutorials.

CD-ROM Hardware

CD-ROM Drives

Mitsumi CD-ROM HH Internal	169.00
Texel DM3024 (drive only)	359.00
Toshiba XM-3401B (drive only)	379.00

Sound Boards

Pro Audio Spectrum 16	169.00
Sound Blaster Deluxe	89.00
SoundBlaster Pro	119.00
Soundblaster 16 ASP	209.00

CD Caddies

Sony Type

$5.00

CD *ROM* Multimedia Magazine Information on latest CD-ROM releases **$3.00**

$639 Intellect CD16 + MediaVision PAS16SCSI + Speakers + 1 Software Bundle
$599 Illuminate CD16+ MediaVision PAS16SCSI + Speakers + 1 Software Bundle
$529 Lumina CD16 + MediaVision PAS16SCSI + Speakers + 1 Software Bundle
$499 Educate CD16 + MediaVision PAS16LM + Speakers + 1 Software Bundle

Featuring Sony, Toshiba, Texel, Phillips LMSI, and Teac CD-ROM Drives
CD-Format : Audio-Combined, Mode 1 & 2 Data Discs, CD-Audio Discs, CD-ROM XA (pictures).
Audio compatibility: MPC and MS Windows with MultiMedia, AdLib, Sound Blaster, & Real Sound.

Software for Bundles Above (Please order by number)

1. MPC Software Toolworks Encyclopedia (Grolier's), MPC US Atlas, MPC World Atlas, MPC The Animals!, MPC Guiness Book Of World Records (1993)

OR

2. MPC Software Toolworks Encyclopedia (Grolier's), MPC US Atlas, MPC World Atlas, MPC The Animals!, Reference Library

OR

3. MPC Software Toolworks Encyclopedia (Grolier's), MPC US Atlas, MPC World Atlas, MPC Mavis Beacon Teaches Typing, MPC ChessMaster 3000

OR

4. The Secrets of Monkey Island (5 Languages), Sport's Best(3 games, 4 languages), MPC Wizard, CICA Windows Programs & Utilities, Jets and Props, World View

OR

5. The Secrets of Monkey Island (5 Languages), Sport's Best(3 games, 4 languages), Languages Of the World (Windows), CICA Windows Programs & Utilities, Kodak

Need more descriptions? Call for our latest catalog.

Over 1000 CD-ROM Software Titles in Stock!

Business

Am Business Ph Bk 93-94	29.00
Business Lists-on-disc	39.00
Business Tools	19.00
Business Library V1	45.00
Business Master	15.00
Career Opportunities	25.00
Essential Home & Bus Coll	12.00
Home Office Software	30.00
Intn'l Bus & Econ Atlas	15.00
M Beacon Teaches Typing	19.00
Microsoft Works	35.00
My Advncd Label Designer	39.00
9 Digit Zip Code Directory	25.00
North American Fax Book	25.00
PhoneDisc USA Business	69.00
PhoneDisc USA Residential	79.00
Pro Phone 1993 Mid-Year	119.00
Pro Phone Business 1993	25.00
Q & A	29.00
Secrets Executive Success	29.00

Clipart & Graphics

Animation Festival	19.00
Animals in Motion	39.00
Business Backgrounds	25.00
CD Cad 3.7	19.00
Classic Clips Trailers	25.00
Clipart Galore	24.00
Clipart Goliath	12.00
Clipart Heaven	15.00
Clipmaster Pro	29.00
Color Magic	19.00
Corel Art Show III	39.00
Deep Voyage	34.00
Desktop Pub Dream Disk	29.00
Electronic Lib of Art	24.00
Encyclopedia of Clipart	19.00
EPS Pro Vol 1	129.00
EPS Pro Vol 2	129.00
Fantazia Fonts & Sounds	25.00
Font Funhouse	29.00
Fontmaster 1	12.00
Fontmaster 2	15.00
Fonts for Pro Publisher	27.00
Fractal Ecstacy	39.00
Fractunes	29.00
Full Bloom	34.00
Gallery of Dreams	15.00
GIFS Galaxy	19.00
GIFs Galore	12.00
Hot Stuff 1	17.00
Hot Stuff 2	24.00
Jets & Props	19.00
Just Fonts	19.00
Kodak Photo CD Access	14.00
Made in the USA	29.00
Mega Clip CD	19.00
MPC Wizard	14.00
Mother Earth 2	33.00
Mother of All Clip Art	12.00
Nautilus Best of Photography	19.00
Pixel Perfect	15.00
Publishers Paradise	19.00
Publish it 2.0 (DOS)	15.00
Publish it 3.0 (Win)	54.00
Quicktoons	19.00
Reel Clips	24.00
Resource Library Graphics	14.00
So Much Screenware	25.00
Space, Time & Art	64.00
Tempra Access	12.00
Video for Windows	35.00
View from Earth	59.00
VGA Spectrum 1	12.00
VGA Spectrum 2	15.00
Worldview	15.00
World of Flight	25.00
World of Trains	20.00

Educational

American Journey:1896-1945	39.00
Animals! (San Diego Zoo)	18.00
Apollo (Space Series:)	25.00
Audubon Birds or Mammals	17.00
Barney Bear School	14.00
Barney Bear Space	14.00
Berlitz Think & Talk: French, German, Italian, or Spanish	104.00
Carmen San Diego	19.00
Creepy Crawlies	49.00
Cute & Cuddlies	49.00
Dinosaurs M/M Encyc	24.00
Dinosaur Adventures	24.00
Distant Suns	49.00
Education Master	15.00
Electricity & Magnetism	39.00

Kid's Can Read:
Cinderella
Paperbag Princess
Scary Poems For Rotten Kids
Tale Of Benjamin Bunny
Tale Of Peter Rabbit
...and more!
Your Choice $19.00 each

Languages of the World	25.00
Learn Speak Spanish	49.00
B Bear's Learning At Home	29.00
Let's Play	12.00
Macmillan Dict for Children	19.00
Microsoft Dinosaurs	65.00
Monarch Notes	54.00
Multimedia Computer Tutor	12.00
Nat Geog Mammals	24.00
Playing w/ Language: English, French, German, Japanese, or Spanish	25.00
Space Shuttle	22.00

Entertainment

Aegis Guardian Fleet	54.00
Arthur's Teacher Trouble	18.00
B-17 Fortress/Silent Svc	39.00
Battle Chess	19.00
Blue Force	45.00
Chess Maniac Nat Lampoon	35.00
Chessmaster 3000	18.00
Conquest of the Longbow	54.00
Curse of Enchantia	24.00
Cybergenic Ranger	12.00
D & D Fantasy Empire	49.00
Dracula Unleashed	53.00
Dune	38.00
EcoQuest	19.00
Eric the Unready	39.00
Eye of the Beholder 3	49.00
F-117A Stealth Fighter	49.00
F-15 Strike Eagle III	49.00
Fatty Bear's Birthday Surp.	49.00
Fatty Bear's Fun Pack	39.00
Flight 642	55.00
Funny (Jokes CD)	39.00
Game Master	15.00
Game Pack II	39.00
Games 1993	19.00
Gameware Collection	19.00
Gunship 2000	24.00
Guy Spy	15.00
House of Games	15.00
Inca	49.00
Indiana Jones Fate Atlantis	42.00
Jones in Fast Lane	15.00
Jutland	49.00
PC Karaoke	59.00
King's Quest 5	15.00
King's Quest VI	34.00
L Bow 2: Dagger Amon Ra	24.00
Links Collectors	39.00
Legend of Kyrandia	45.00
Loom	14.00
Lord of the Rings	49.00
Manhole	29.00
Mad Dog McCree	45.00
Maniac Mansion: Day Tntcle	40.00
Mantis	15.00
PC Gameroom	15.00
PC-SIG Games	12.00
PC SIG World of Games	54.00
Ringworld	18.00
Pentomino	54.00
Putt Putt Joins the Parade	19.00
REBEL ASSAULT	54.00
Sci-Fi Fantasy	29.00
Scooter's Magic Castle	19.00
Scrabble Deluxe	15.00
Secret \ Luftwaffe	45.00
Secret Monkey Island	15.00
Seventh Guest	15.00
Sherlock Cons 1	42.00
Sherlock Cons 2	49.00
Sherlock Cons 3	15.00
Space Quest IV	35.00
Sporting News Pro Ftball Gd	15.00
Stellar 7	

Victor, Vector & Yondo
Last Dinosaur Egg
Hypnotic Harp
Vampire Coffin
Cyberplasm
Just $39.00 Each

Strike Commander w/Tact M	59.00
Wacky Funster	25.00
Who Killed Sam Rupert?	25.00
Willy Beamish	15.00
Wing CMDR 2\Sec Missions	39.00
Wing CMDR 2\Ult Undrwrld	49.00
Wrath of the Demon	18.00

Literature

Aesops Fables	30.00
Beauty & the Beast	14.00
Desktop Bookshop	12.00
Electronic Home Library	24.00
Greatest Books Collection	39.00
Hound of Baskervilles	35.00
Interactive Storytime V1	15.00
Interactive Storytime V2	59.00
Interactive Storytime V3	18.00
Just Grandma & Me	39.00
Library of the Future	36.00
Magazine Rack	39.00
Mixed Up M Goose	25.00
Reader's Library	15.00

Miscellaneous

1001 Utilities	19.00
CD Speedway	14.00
Jewel Cases	57.00
Lightning	1.00
Nautilus Bac Pac V1	59.00
Nautilus Bac Pac V2	39.00
Nautilus Mini Subscription	39.00
Romware Magazine	24.00
PC Medic	12.00

Music & Sound

9000 Sounds	15.00
Composer Quest	15.00
Dr of Sound	14.00
Grammy Awards	34.00
Jazz History	49.00
Killer Trak CD	12.00
MIDI Music Shop	15.00
MS Musical Instrument	55.00
Microsoft Stravinski	55.00
Microsoft Beethoven	55.00
Mozart	25.00
Resource Library Audio	14.00
Sound Effects Library	15.00
Sounds for Windows	15.00
SoundWAV	24.00
Vivaldi	17.00
Win CD	29.00

Programming

ADA Programming	29.00
C Users Group Lib	29.00
Garbo	12.00
Hobbes OS/2	29.00
Programmers ROM	13.00
Resource Lib Lang Operations	25.00
Simtel 20	19.00
Source C CD	13.00
Sprite	19.00
X11R5\GNU	19.00

Reference

Aircraft Encyclopedia	24.00
Bible Library	25.00
Cinemania	55.00
Compton Upgrade & Switch	89.00
Consumer Information	19.00
Cookbook Heaven	14.00
Dict Living World	34.00
Healing Fds Elect Cookbook	35.00
Encyc Win 1.0/Dos 5.0, S.T.	39.00
Family Doctor	19.00
Great Naval Battles	59.00
Guiness 1993	20.00
Health & Medical Directory	109.00
History of the World	59.00
Holy Bible & Christian Shware	15.00
Home Designer DOS/WIN	29.00
Illus Facts:How Things Wrk	35.00
Illus Facts:How World Wrks	35.00
JS New Prague Cookbook	25.00
King James Bible	19.00
Languages of World	25.00
M S Bookshelf 93	35.00
Map Expert w/Str AtlasUSA	249.00
Mayo Clinic	19.00
Microsoft Encarta	249.00
M/M Animals Encyclopedia	35.00
Murmurs of Earth	45.00
Oxford English Ref Lib	94.00
Plant Doctor	27.00
Prescript. Drugs	29.00
Reference Lib. S.T.	15.00
Tony LaRussa Baseball 2	55.00
Total Baseball 1993	19.00
USA State Factbook	29.00
USA Wars: Civil War	29.00
USA Wars: Korea	29.00
USA Wars: WW2	29.00
USA Wars: Vietnam	29.00
US History	25.00
World Factbook	15.00

Shareware

ASP Advantage	24.00
All American M/M Shrware	19.00
Amsoft World Ham Radio V2	29.00
California Collection	12.00
CICA Windows	12.00
Doctor of Games	14.00
Doctor of Shareware	14.00
Doctor of Windows	14.00
Gigabyte Gold	29.00
Hacker Chronicles	24.00
Ham Call April 1993	47.00
Libris Britannia	37.00
Monster Media '93	29.00
Night Owl 10	29.00
Original Shareware	9.00
PC SIG 12	15.00
Phoenix 4.0	15.00
PowerPak Gold	18.00
RBBS in a Box	25.00
Shareware '93	24.00
Shwre Explorer Quad Pak	59.00
Shwre Extravaganza (4 disks)	39.00
Shareware Heaven	14.00
Software Vault 1	12.00
Software Vault 2	14.00
Software Vault Gold Coll.	19.00
So Much Shareware 2	15.00
So Much Shareware 3	19.00
Top 2000+ Shwre	19.00
Ultimate Shwre Coll	12.00
Up All Night	15.00
Window Master	18.00
Windows 1993	24.00
Windows Shareware Gold	18.00
WIN Platinum	14.00
Wizpack	12.00

Travel

Adventures	34.00
Aloha Hawaii	19.00
Britain at its Best	19.00
Digital Tours/USA Tours	29.00
Global Explorer	89.00
Great Cities V1 or V2	19.00
Great Wonders World	29.00
Hong Kong At Its Best	19.00
Hospitality Index	25.00
National Parks	19.00
New York at its Best	19.00
The Orient	39.00
Street Atlas USA	89.00
US Atlas w Automap	19.00
Washington at it's Best	19.00
World Atlas 4.0	22.00
World Atlas US/Atlas Combo	19.00
World Vista	39.00

Many more titles available *(including Adult)*

Order with Check, Money Order, Discover, VISA, MasterCard, American Express, or COD. Order by phone, mail, or fax. There is no surcharge for credit card orders. For the contiguous U. S., CD-ROM software shipping is $5.00 per order (not title); or $9.50 if COD. Alaska, Hawaii, Puerto Rico, Mexico and Canada add $8.00 per CD-ROM software order for shipping. Costs for shipping hardware, or orders to foreign countries not mentioned, are quoted at time of order. Indiana residents add 5% sales tax. Not responsible for typographical errors. Please research your product purchases as all sales are final. All products are covered by manufacturer's warranty. Prices and availability are subject to change without notice.

Free Spirit Software, Inc. - PO Box 158 - 109 W Pearl Street - Trafalgar, IN 46181 Phone (317) 878-5348

you'll be able to take a week-by-week look at your baby's development. You can view animated displays of the changes your body will go through, and you can read in detail how your baby is developing, how much it probably weighs, and how large it is in inches.

B.A.B.Y. also covers diet, exercise, and childbirth classes. For instance, under the Pregnancy Menu, the Tracker option graphs your weight gain/loss for you. Simply type in your weight each week. The software calculates what your caloric intake should be based on your prepregnancy weight. Then B.A.B.Y. gives diagrams of good prenatal exercises and provides a calendar to keep track of your childbirth classes.

As your due date approaches, you'll want to check out the phases of labor and the animated delivery sequence. You'll learn what you might experience in recovery and what tests your newborn will undergo and what the results mean.

Most expectant parents will find the views of the baby's stages of development fascinating. Some features are more useful that others, however. Discovering your baby's due date is exciting and fun, but attempting to schedule your newborn's feeding times (is there such a thing?) may be impossible. B.A.B.Y.: Birth and Baby Years is a fun and informative way to track fertility and pregnancy, even if you're too busy after the baby is born to take advantage of its other features.

PAM PLAUT

Software Marketing
(602) 893-3377
$59.95

Circle Reader Service Number 452

ICON MAKE-IT

Thanks to the efforts of third-party software makers, the Windows environment is slowly loosening up and having fun. Moon Valley Software's Icon Make-It is a perfect example. The program puts you in the director's chair of a full-featured icon animation studio.

Moon Valley's Icon Make-It puts you in the director's chair of a full-featured Windows icon animation studio.

Like a mini movie studio, the program is divided into several modules, each specializing in various stages of production. Visit the icon editor to design your own 16-color creations on a 32- × 32-pixel grid, or import 1 of the 200 icons from the built-in clip art book. You can create or modify icons with a full set of standard drawing tools plus effects such as image shifting, borders, and frame advance. You can also create animated cursors, but I found them to be more annoying than entertaining. The editor interfaces directly with the animation studio, where you script your movies with up to 20 icon frames using VCR-style controls, variable-speed playback, and a preview screen. Choose from 19 special visual effects such as zoom, dissolve, shatter, melt, colorize, rotate, mirror, and paint. Still want more? Try combining two movies—one in the foreground and another in the background—for a complex, multilayered effect.

Once assembled and recorded, animated icons are easily assigned to programs via a scaled-down version of Moon Valley's Icon Hear-It, which allows you to attach sound samples to your icons. Also included is a handy working demo of MCS Stereo Digital Recorder, a component-style Windows WAV sound recorder, player, and editor from Animotion Development.

Icon Make-It's greatest limitation is its incompatibility with shells other than Windows' Program Manager. It has limited success with Norton Desktop—animated icons must be reloaded with each new Windows session—and it doesn't work at all with such proprietary shells as Vitesse's Salvation. These are problems Moon Valley should quickly address, since alternative Windows shells are becoming more popular.

While it may not improve your productivity, Icon Make-It is undeniably fun to play with and adds some needed motion to a static Windows workplace.

SCOTT A. MAY

Moon Valley Software
(800) 473-5509
(602) 375-9502
$69.95

Circle Reader Service Number 453

WAYNE'S WORLD

Wayne's World is excellent! NOT!

Then again, it didn't make me want to blow chunks, either.

This graphic adventure from Capstone uses an updated version of the game system used in the company's The Dark Half. It finds Wayne and Garth setting up a pizzathon to raise $50,000 to prevent the Community Access Television station which airs their Mom's-basement talk show from going off the air.

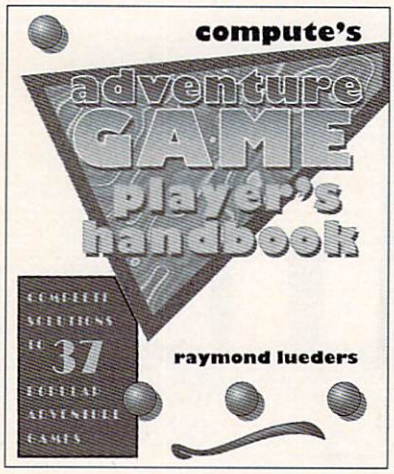
No way! As if anything built on the same engine as The Dark Half could be good, dude. Way! Wayne's World really is not all that bad. You can switch between these two dubious cultural icons. The interface now has a series of icons fea-

PREPARE

NEW WORLD COMPUTING, INC®
1-800-325-8898

Circle Reader Service Number 177

THE ULTIMATE GUIDE TO ADVENTURE GAMES



Includes thousands of hints and tips and more than 300 game snapshots, digitized images, and maps. 500+ pages.

Alone in the Dark
Amazon
Conquests of the Longbow
The Dagger of Amon Ra
Dark Seed
EcoQuest
Eric the Unready
Freddy Pharkas
Gobliins 2
Heart of China
Inca
Indiana Jones
King's Quest V
King's Quest VI
Leather Goddesses of Phobos 2
The Legend of Kyrandia
Leisure Suit Larry V
Les Manley in: Lost in L.A.
The Lost Files of Sherlock Holmes
Lost Secret of the Rainforest
Martian Memorandum
Mixed-Up Fairy Tales
Monkey Island 2
Police Quest 3
The Propehcy
Quest for Glory III
Rex Nebular
Ringworld
Rise of the Dragon
The 7th Guest
Space Quest IV
Space Quest V
Spellcasting 301
Star Trek
Ultima Underworld
Ultima Underworld 2
Willy Beamish

To order your copy send $21.95 plus $2.50 for shipping and handling (U.S., $4 to Canada and $6 other) to COMPUTE Books, c/o CCC, 2500 McClellan Ave. Pennsauken, NJ 08109. (Residents of NC, NJ, and NY please add appropriate tax; Canadian orders add 7% goods and services Tax.) All orders must be paid in U.S. funds drawn on a U.S. bank. Orders will be shipped via UPS Ground Service. Offer good while supplies last.

REVIEWS

turing their goofy faces. You can make either of the two the active character. Capstone even added an Extreme Closeup! command. The map mechanism is a delightful computery thing. The game sets up the quests nicely right at the outset. Samples from the movie, such as "ex-squeeze me?" surface here and there.

I mean, what else do you want? This isn't the most ambitious game around. The graphics aren't too fancy. The intro's rather crude. There's no pretense here of doing anything but having fun, and Wayne's World is rather good at that.

And, happily, Capstone doesn't seem to have sanitized the material at all, so the richly stupid humor of Wayne and Garth comes through from the get-go. Anyone who saw and enjoyed the movie will doubtlessly get some fun out of this. Everyone else: Just party on.

PETER OLAFSON

Capstone
(800) 468-7226
$49.95

Circle Reader Service Number 454

MEGA-LO-MANIA

What traits are most important in a computer-game god? Good judgment? Perhaps unquestioning benevolence? No, a powerful cybernetic deity is only a deity at all because he or she can and will conquer unbelievers by mashing the poor pawns into submission. If a deific crunch-fest is what you're in the mood for, Mega-lo-Mania might provide just the tonic you need.

Set against a backdrop of sweeping space, a young planet is born, populated with primitive human life which is in serious need of some guidance. Enter a rough-and-tumble bunch of deities, each wanting the world for his or her own. So how is the decision made? By war of course, using the malleable and gullible humans as pawns.

You start the game by choosing one of four rival deities, and you must battle through 27 islands of conflict, until the 28th, the "mother of battles" is reached. If you emerge victorious, you're given dominion over the planet.

The islands are played in sets of three, with each set representing an epoch of time. You start play in the Stone Age and end with nuclear and spaceflight technology. For each battle you're allocated a pool of men from the bank, 100 per epoch (but more may be accumulated by underpopulating the lower level conflicts and bringing the balance forward). Choose a home sector, and you're ready to go off to fight some battles.

Each island varies in size, terrain type, and which enemy deities must be tackled. To win, you must completely wipe out the men your rival diety controls. You've got to use your men, the natural resources in your sector, and your tactical acumen to design and implement successful defensive and offensive capabilities.

The earliest battles are fairly easy: It's easy enough to research the rock weapon and set up an all-offensive force that will go out and hurl rocks at your opponent's fortifications. In the later epochs, resource management and defensive posturing become important. But you shouldn't forget that he who throws the first rock usually wins.

Mega-lo-Mania is an attractive game with a rather obtuse icon interface. Once you master the icons (with little help from an exceptionally poor and hard-to-read manual), the game plays very smoothly.

Unfortunately, Mega-lo-Mania isn't the strategic challenge it first appears to be. Basically, being the first to develop weapons and deploy them is tantamount to invincibility. To be first, you must have your strategy figured out before the play for a given island begins. The speed of weapon development is dictated by two things: manpower and resources. Manpower is under direct player control, but the resource-generating ability of a sector is only discovered during actual play. A dry-run peek at a sector will tell at a glance whether it will perform well or not, and if not, quitting the sector and moving on isn't a bad option.

In a strange quirk of blindness during development, Ubi Soft neglected to factor in any way to leave the game—you can't quit back to DOS! Your only option is to reboot the computer to escape the crazed god-struggle of the nether universe.

While Mega-lo-Mania suffers from a lack of depth and sloppy quality control, the game does offer an interesting gaming experience. Perhaps my favorite aspect of the game is the varying tech levels which can be present at any one time: You can make a biplane attack on a castle defended with archers, and you may be forced to use catapults to fend off an incoming jet fighter. As a nonbenevolent, no-brainer game, Mega-lo-Mania delivers.

PAUL SCHUYTEMA

Ubi Soft
(415) 332-5011
$49.95

Circle Reader Service Number 455

DISK-COUNT SOFTWARE

Lowest delivered prices with great customer service.

800-448-6658

HOURS: M-F 9 AM- 8 PM SAT 10 AM- 3 PM EST

PRODUCT INFO & OTHER BUSINESS: 908-396-8880

DISCOVER · American Express Card · MasterCard · VISA

NO SURCHARGE

SHIPPING IS ONLY $4.00 PER ORDER, NOT PER ITEM

HARDWARE INCLUDED!!!

C D ROM

Aegis Guardian 49.95
Aesops Fables 33
Aladdin Lamp 33.95
Alone in the Dark 45
Amer Bus. Phnbk. 39
Arthur Teacher Trbl 41
Autodesk Explorer 119
Barney Bear Goes to School 26
Barney Bear Goes into Space 26
Battlechess 34
Beauty & Beast 49
Beethoven Ninth 59
Berlitz Think & Talk French 105
Berlitz Think & Talk Spanish 105
Bloodnet 41.95
Blue Force 39.95
Buzz Aldrin Race 59
Carmen World Dlxe 65
Cautious Condor 45
C D Game Pack 55
C D Speedway 57
Chess Maniac 34.95
Christmas Carol 33
Clipart Goliath 30
Conan Cimerion 36
Creative Kids 36.95
Curse of Enchantia 25.95
Dark Sun 49.95
Deathstar Arcade 30
Dictionaries & Lang 30
Dracula Unleashd 49.95
Dune 45.95
Education Master 32
Electronic Cookbk 75
Elect. Home Library 49
Encarta Encyclpd 249.95
F-15 39.95
F-117A 43.95
Family Doctor 39
Fatty Bear 43.95
G Force 19.95
Gateway II 35.95
Geekwad Games 22.95
Gettysburg:MM Hist 43
Gofer Winkles Adv 33
Golden Immortal 28
Gunship 2000 37.95
Guy Spy 32
Hell Cab 62.95
Hi Tech Aircraft 42.95
Humans 25.95
Inca 35.95
Indiana Jones 39.95
Inspector Gadget 37.95
Interactive Old Test 52
Intro Games Fr/Sp 79
Iron Helix 59.95
Its a Wonderful Life 48
Jazz:Multimedia Hist 69
Jets & Props 55
Jones in Fast Lane 37
Just Grandma & Me 36
Jutland 44.95
King Quest 6 26.95
Land Of Lore 34.95
Languages of World 99
Learn to Speak Spn 59
Leisure Suit Larry 37
Libry of Art:Renaisn 65
Loom 39
Lost Treasure 49
MacMillian Child Dict 49
Mad Dog McCree 32.95
Man Enough 45.95
Manhole 49
Maniac Mansion 39.95
Mantis 45.95
Mario is Missing 47.95
Mavis Beacon 39
Mayo Clinic 49
Mixed Up Moth Gs 30
Monarch Notes 75
Monkey Island 39
MM Music: Mozart 33
MM Music: Vivaldi 33
Our Solar System 29
Penthouse Interact 79.95
Pool Shark 19.95
Prcision Map 84.95
Protostar 39.95
Rebel Assault 39.95
Reference Library 59
Return of Phantom 37.95
Return to Zork 45.95
Rotor/Airball/Time 25
San Diego Zoo 49
Science Advntr II 47.95
Secret Weapons 59
Seventh Guest 59
Sherlock Holmes 39
Sherlock Holmes 2 42
Sherlock Holmes 3 49
Sleeping Beauty 37
Sound Works 35
Space Quest 4 37
Space Series-Apollo 49
Space Shuttle 29.95
Spellcasting Party 29.95
Spirit of Excalibur 37
Star Trek Enhanced 49
Stellar 7 30
Strange Deadfellow 39
Street Atlas 89.95
Strike Commandr 57.95
Talking Classic Tale 75
Talkng Jungle Safari 75
Time Table Science 59
Ultimate Shareware 59
USA Wars:Civil War 49
USA Wars:Korea 49
USA Wars:Vietnam 49
USA Wars: WW II 49
Voyage Planet ea 69
Who Killd Sam Rup 25
Willy Beamish 37
Win CD 32
Wing Comm & Miss 45
Wing Com/Ultima 6 45
Wing Comm 2 57
W C 2/Ulti. Undrwld 57
Wolfpack 37.95
World War II Pak 37.95

Adults Only- 21 Yrs.

Animation Fantasy 65
PC Pix Vol 1 or 2 65
Porkware 65
Private Collection 65
Priv. Pictures 1 or 2 65
Seedy Vol 1-7 ea. 65
Storm 1 or 2 65
Visual Fantasy 65

Caddies 7.95ea. 3/$ 19

SOFTWARE

A Train Construction Set 39
Across the Rhine 47.95
Aces Over Europe 44.95
Aces of the Pacific 42.95
Aces of the Pacific Mission Disk 19.95
AD&D Collect 2 42.95
AD&D Starter Kit 42.95
AD&D Unlimited 37.95
Adlbou&Junior #1 34.95
Air Bucks 34.95
Air Bus A320 45.95
Air Duel 33.95
Air Force 39.95
Air Warrior SVGA 35.95
AJ World Discvry 29.95
AlgeBlaster Plus 30
Alone in The Dark 35.95
Alphabet Blocks 29.95
Amazon 38.95
Amazon Trail 34.95
Ambush 37.95
Ancient Art War Sky 35
Ancient Empires 30
Animal Adventure 47.95
Animation Studio 75
Arcade for Wind 29.95
Ashes of Empire 35.95
A.T.A.C. 35
Auto Insight 49
Automap 44
Automap Wind 59
Automap Europe 74
Autoworks 39.95
B-17 Flying Fortress 19
Bailey's Bookhouse 29.95
Bane Cosmic Forge 36
Batman Returns 39.95
Battle of Destiny 35.95
Beat the House 29.95
Betrayal of Krondor 39.95
Betty Crocker Cook Call
Bloodnet 37.95
Blue & Gray 35.95
Blueforce 39.95
Body Illustrated 47.95
Bodyworks 42
Bug Bunny WrkShp 31
Buzz Aldrin 39.95
Caesar 35.95
Car and Driver 27.95
Carrier Strike Expansion Disk 19.95
Carriers at War 2 42.95
Cash for Kids 31.95
Castle 2 35.95
Castle of Dr. Brain 30
Challnge 5 Realm 33.95
Champions 35.95
Chemistry Works 38
Chessmaster 29.95
Children Writ & Publ 39
City Streets 59.95
Civilization 37
Civilization Deluxe 45.95
Civilization Win 41.95
Clash of Steel 39.95
Coaster 35.95
Cobra Mission 39.95
Comanche Mission Disk 25.95
Compan of Xanth 35.95
Computer Works 46.95
Cohort 2 19.95
Conquest of Japan 35.95
Contraption Zak 25.95
Crusader Drk Savnt 39.95
Cuckoo Zoo 31.95
Cyber Space 34.95
Darklands 37.95
Darkseed 39
Darkside of Xeen 39.95
Dark Sun 47.95
Daughter of Serpnt 31.95
Deja Vu 1 & 2 37.95
Design your Railrd. 35
Detroit 35.95
Diet Pro DOS/Win 25/36
Dino Park 35.95
Dino Quest 31.95
Dinosaur Adventure 34
Discovering Amer 35.95
Distant Sun 39.95
Dog Fight 37.95
Doom! 42.95
Dr Floyd Desktop 19.95
Dr Jam Window 59.95
Dr. Quandry 31
Dragon Knight III 45.95
Dragon Lair 3 39.95
Dreadnoughts 40.95
Dune 2 36
Dungeon Master 29.95
Dynamix Bundle 42
Eagle Eye Mystery 31.95
Eco-Quest 1 or 2 29.95
Eight Ball Delx 35.95
El Fish 35
Empire Deluxe Scenario Disk 35.95 19.95
Entrmt Pak Win (ea.) 28
Eric the Unready 35.95
Eternam 35.95
Eye Beholder Tril 49.95
EZ Cosmos 42
Ez Language Series Fr,Gr,It,Sp,Jp,Rs 31.95
F14 Fleet Defend 44.95
F 15 III 44
F117a Stealth 29.95
Falcon 3.0 45
Oper Fight Tiger 25
Mig 29 Data Disk 34.95
Family Tree Maker 42
Fantasy Empire 42.95
Farm Creativity Kit 18
Fatty Bear Birthday 31.95
Flashback 32.95
Flight Simul ATP 28.95
Flight Simulator 5 43.95
Air Trfc Cntrlr 34.95
Arcft/Scen Dsgn 28
Aircraft Adv Factry 25
685 17
701 17
Airport Facty Loc 17
California 37
East USA Scen 39.95
Great Britian 37
Hawaii 19
Instant Facit Loc. 19
Japan Scenery 19.95
New York 29.95
Paris 29.95
Pilots Pwer Tools 24.95
Rescue Air 911 17
San Fransisco 29.95
Scenery St A or B 37
Scenery Enhn Ed 25
Sound & Graphic 25
Tahiti 19
Washington DC 29.95
West USA Scnry 39.95
West Europe 19
Freddy Pharkas 39.95
Front Page Pro 45.95
Fun School:Fred Frog Sam Spy,Teddy Br 17
G-Force 19.95
Gabriel Knight 39.95
Gateway II 35.95
Gearworks 29.95
Geekwad Games 22.95
Gobblins 1 or 2* 22
Grand Slam Bridg II 32
Great Naval Admrl 48.95
Super Ships 20.95
Great Works 30.95
Gunship 2000 29.95
Scenario Disk 24
Hardball 3 35
Data Disk (ea.) 17.95
Harrier Assault 34.95
Headline Harry 37
Health & Diet Pro 26
High Command 42.95
Hired Guns 35.95
Hong Kong Mahjong 32
Hoyles 1,3 or 4 29.95
Humans 25
Inca 34.95
Inca 2 39.95
Incredible Machine 29.95
More Inc Mach 29.95
Indiana Jones 4 37
Inspector Gadget 35.95
Island of Dr. Brain 29.95
Isle of the Dead 35.95
Jetfighter 2 39
Adv Mission Disk 19
John Madden 2 31.95
Johnny Quest 29.95
Jump Jet MPE Version 38.95 48.95
Kye Deluxe 30.95
Kid Cad 29.95
Kid Cuts 35.95
Kid Desk 25
Kid Pictures 19.95
Kid Pix 35.95
Kid Pix Companion 25
Kid Works 2 35.95
Kids Zoo 33.95
Kings Ransom 34.95
King's Quest 6 45
Kronolog 38.95
Land Of Lore 34.95
Legacy 39
Legacy Necromncr 19.95
Legion's of Krella 37
Lemmings 2 35.95
Lethal Weapon 35.95
Links 25
Links 386 Pro 39
Course Disk ea 16
386 Courses ea 19.95
Lord of Rings 2 37
Lost File Sherlock 27.95
Lost Treas Infocom 42
Lost Treasures 2 29.95
Lost Vikings 29.95
Maelstom 39.95
Magic Candle 3 37.95
Maniac Mansion II 35.95
Mantis 39
Speech Disk 17
Mario is Missing 35.95
Mario Teach Type 25
Master of Orion 37.95
Math Blaster Plus Mystery 29.95 29.95
Search of Spot 35.95
Math Blaster Wind 36
Math Rabbit 29.95
Mathology 29.95
Mavis Beacon 29.95
Mechwarrior II 45.95
Mental Math Games 37
Metal & Lace 29.95
Michl Jordon Flght 37.95
Micro Cookbook 4. 31
Microsoft Golf 39
Midnight Rescue 35
Mig 29 (Stand Alone) 47
Might & Magic 4 40
Might & Magc 5 39.95
Millies Math House 31
Mind Castle 35.95
Mixed-Up Fairy Tal 30
Mixed-Up Mother Gs 30
Money/Clocks Wrk 19
Monkey Island 1/2 23
Monopoly Deluxe 34
More Vegas Game 19.95
Mortal Kombat 35.95
Mutanoid Challenge 31
Mystery at Museum 35.95
NFL Challenge 59
NFL Coaches Club 33
NHL Hockey 42.95
Nigel's World 31
Omar Shariff Bridge 37
Open Dialog 44.95
Operation Neptune 35
Orbits 29.95
Oregon Trail Delx 34.95
Origin FX 25
Out of This World 36
Outnumbered 30
Pacific Wars 47
Paladin 2 35
Patriot 24.95
PC Study Bible 42
Peppers Adventure 29.95
Perfect General 36
Pinball Dreams 29.95
Pirtate's Gold 38.95
Playroom 2.0 30.95
Police Quest 4 39.95
Pool Shark 19.95
Prince of Persia 2 39.95
Print Shop Deluxe Graphic Coll. (ea) 45 30
Print Shop, New Graphics (ea) 35 22
Print Shp Compion 31
Privateer Speech Disk 47.95 17.95
Prophecy 25.95
Protostar 39.95
Putt Putt Parade 32
Putt Putt Fun Pack 26
Quarter Pole 29.95
Quest Glory 3 or 4 39.95
Rags to Riches 35.95
Reach for Skies 19.95
Reader Rabbit 35.95
Reader Rabbit 2 35.95
Ready for Letter 35.95
Ready Set Read 29.95
Reading Adv in Oz 36
Reading Comp 32
Ready Set Read 29.95
Realms of Arcadia 35.95
Red Baron Mission Disk 39 17
Red Crystal 35.95
Remind Me 34.95
Return Of Phantm 33.95
Rex Nebular 37
Ring World 34.95
Robosports Wind 25.95
Rock & Bach Studio 35.95
Rodney Fun Screen 31
Rome 29.95
Rule Engagment 2 39.95
Sam & Max hit Rd 35.95
Science Adventure 42
Scooter Magic Castl 32
Scrable Delx 32
Seal Team 37.95
Scrt Weapn Luftwf 29.95
Tour of Duty ea. 20
Seven Cities Gold 38
Shadow President 39.95
Shadowcaster 47.95
Shadowlands 29.95
Sierra Action Five 25
Sierra Award Winner 47
Sierra Family Fun 32
Sim Ant 29.95
Sim Ant French 35
Sim City Classic 2000 25.95 39.95
Sim Earth 29.95
Sim Life Dos/Wind 39.95
Simon the Sorcerer 29.95
Sing a Long Wind 31.95
Snap Dragon 32
Snoopy Game Clb 29
Solitaire Window 29.95
Solitaires Journey 35
Space Ace 2:Borl 36
Space Adventure 42
Space Hulk 37.95
Space Quest 5 39.95
Spear of Destiny 39.95
Special Forces 29
Spectre 35.95
Speed Racer 35.95
Spellbound 31
Spellcasting 301 35
Spell-it Plus 30
Sports Adventure 33
Star Control 2 35.95
Star Trek 25th Aniv. 37
Judgemnt Right 35.95
StarTrek AudioClip 34.95
Next Generation 38.95
StarTrek Screen Sav 37
Stickybr Math Tutor 30
Stickybr Pre-School 30
Stickybr Read Tutor 30
Stickybr Spell Tutor 30
Storybook Weaver 29.95
Strike Commander 45.95
Speech Disk 17
Strip Poker 3 32
Data Disk (ea) 17
Stronghold 37.95
Studyware for ACT GMAT,GRE,SAT 30
Studyware Biology, Calc.,Chem.,Econ., Physics, Statistic 25
Studyware LSAT 37
Syndicate 37.95
Take a break X-Word 29
Pinball * 29.95
Task Force 1942 37.95
Admiral Edit 43.95
Terminatr Rampage 39.95
Tesserae 17.95
Trmntr 2 Cybrchess 35
Tetris Classic 31
Tie Fighter 39.95
Time Riders Amer. 35
Tony LaRussa Base. 17
Tony LaRussa II 37.95
Expansion Disk 19.95
Top Class Series ea 16
Tornado 45.95
Treasure Cove 35
Treasur Math Storm 35
Treasure Mountain 35
Treehouse 35
Tristan Pinball 29.95
Turbo Science 30
Ultima 7 47.95
Forge of Virtue 17
Silver Seed 19.95
Ultima 7 Part 2 47.95
Ultima Trilogy 37.95
Ultima Trilogy 2 47.95
Ultima Underworld 47.95
Part 2 47.95
Ultrabots 37.95
Uninvited Window 37.95
Unnecessry Rough 35.95
U.S. Atlas DOS 31
Utopia 29.95
V for Victory (ea) 42.95
Victory at Sea 42.95
Vista Pro 73.95
Vocabulary Devl 32
Wacky Funsters 19.95
War in Gulf 29.95
War in Russia 45.95
Warrior of Legend 19.95
Wayne Gretzky 3 35
Waynes World 29.95
What's My Angle 30
When2Worlds War 35.95
Where Crmn SanDiego America Past 34.95 30
Where Crmn SanDiego Europe 30
Where Crmn SanDiego Space 44.95 30
Where Crmn SanDiego Time 30
Where Crmn SanDiego USA 30
Where Crmn SanDiego USA Deluxe 44.95
Where Crmn SanDiego World Deluxe 44.95
Wild Science Arcad 35.95
Ween:Prophecy 34.95
Wing Comandr 2 47.95
Wing Com Acadm 31.95
Wizardry Trilogy II 35.95
World Circuit 34.95
World Tour Tennis 32.95
World War II 35.95
X Wing 39.95
Mission Disk 19.95
Yobi Spelling Trick 29.95
Zoo Keeper 36

Sound Cards

AIT Stereo F/X 139
StereoF/X CD 147.95
Covox Voice Blstr 64.95
Gravis Ultra Sound 129
CD-ROM Kit 298.95
Media Vision
CDPC XL 1159
Pro Audio 16 179.95
Pro Audio Studio 209.95
Pro Movie Audio 339.95
Logitech Audioport 134
Soundman 132.95
Sound Blaster 85
SB Midi Kit 59.95
SB Pro MCA 259
SB 16 Basic 128.95
SB 16 MCD 159.95
SB 16 MCD ASP 189.95
SB 16 SCSI 174.95
SB 16 SCSI ASP 208.95
SB Discovery 16 I 459
SB Edutanmnt 16 549.95
SB Omni Drive 314.95
SB Portblaster 149
SB Video Blaster 349
SB Video Spigot 419.95
SB Waveblaster 174.95
Roland RAP-10 459.95
SCC-1 GS 375
SC-7 315
SC-55 549.95
MA-12C ea 105
SPEAKERS
CS-150 Shielded 28
CS-550 Shielded w/3 band Equilizer 35 45
CS-800 49.95
CS-1000 84.95
Altec Lansing 200 219
ACS 300 299

MIDI Interface

Midiator 101 Serial 95
PC Midi Card 79
2 Port SE 149.95
Hello Music 277.95
The Miracle 325

MIDI Software

Ballade Windows 79
Band in a Box 69
Cadenza 125
Cakewalk 95
Cakewalk Win 129.95
Cakewalk Pro 169
Cakewalk Win Pro 240
Encore 379
Jammer Pro 125
Laser Music Proces 79
Master Tracks Pro 249
MCS Stereo 55
Midiscan 269.95
Midisoft Studio 159
Music Bytes Vol 1 65
Music Mentor 79
Music Printer Plus 419
Music Time 169
Piano Works 99
Quick Score Deluxe 99
Songwright 5 89.95
Trax for Windows 60

CD DRIVES

Toshiba
3041 Internal 489.95
3041 External 594.95
Texel America
3021 Internal 349
3028 Dbl Spd 389
3024 Business 679
3024 Education 604
3024 Home 569
3024 Multimeda 844
5024 Dbl Spd 495
5024 Business 769
5024 Education 729
5024 Multimed 969

Modem & Fax

US Robotic Sportster 2400 Int. 99.95
14.4 v.42bs 162.95
w/ S/R Fax 183.95
14.4 v.42bis Ext 183.95
w/ S/R Fax 213.95

Joysticks

CH Flightstick 37.95
CH Game Card 3 31
CH Mach 3 28.95
CH Virtual Pilot 65
Eliminator Card 26
Gravis Analog Pro 39
Gravis Joystick 32
Gravis PC GamePad 21
Kidz Mouse 30.95
Kraft KC3 Joystick 28
Maxx Flight Yoke 69
Maxx Pedal 39
Quickshot Game Cd 14
Quickshot Warrior 18
Suncom Command 19.95
Thrustmaster
FCS 69
FCS Pro 109
Game Card 29.95
Weapons 2 95.95
Rudder Pedal 109
UPROM Chip 29.95

Multimedia

Aitech
Audio Show 369
Pro 256 280
Pro Color Plus 529
ProVGA TV 459
Pro PC/TV Plus 249.95
Pro VGA/TV + 659
VideoSurge 659
VideoSurg SVHS 729
Wave Watcher 419
TV/GRX TV 269

Skins & Pads

Dust Covers 15
Grounded Wrist Strp 9
Keyboard Skins 15
Static Pads Large- System 15
Wrist Pads 8
Stax (Dust Repellent) 5
Statx Complete Cleaning System 15

Store: 1060 Randolph Ave. Rahway N.J.

TERMS AND CONDITIONS

Master Card, Visa, American Express & Discover Accepted. No Surcharge on Credit Cards. By mail: P.O. Box 3, Carteret, N.J. 07008. All Sales Are Final. NO REFUNDS! Exchange on defective merchandise with the same item only. No exceptions. All Products are new from manufacturer. All claims and guarantees are from the manufacturer. Call for current price and availability. GOVERMENT AND SCHOOL P.O.'s WELCOMED. For your protection, we will only ship to the address the credit card company has on file, therefore shipping to Ak., Hi., PR., P.O. Boxes, APO/FPO extra. International orders call for shipping charges. N.J. Resident add 6% sales tax. 20% restocking fee for all refused items.

DAUPHIN DTR-1

The Dauphin DTR-1 (Desktop Replacement-1) is about 50 percent PDA and 50 percent laptop. It comes with Pen Windows and the Ascend personal information manager built in, along with a special spreadsheet optimized for pen use and a group of demonstration programs to show how the system could make itself indispensable for a doctor, nurse, or public safety officer.

The system boasts a 25-MHz 486SLC CPU, 4MB of RAM (expandable to 6MB), and a 40MB hard disk (expanded by DoubleSpace to 73MB). The 5- × 9-inch case sports a pen-sensitive backlit passive-matrix monochrome VGA display (640 × 480), a video output port (800 × 600 with 256-color Super VGA), parallel and serial ports, and a Hayes-compatible modem (the modem and serial port are set to the same interrupt, so they can't be used simultaneously). There's also an Ethernet connector, but while the connector is standard, the Ethernet hardware is not—it's an option that you have to order separately for around $300. The keyboard is in a separate, similar-sized unit (5½ × 9½ inches).

Since the reviewed computer had no floppy drive (an external floppy drive is available from Dauphin for $199, and external hard disks and removable hard disks will probably be available by the time this appears) nor any PCMCIA slots, all programming and documents must be managed through the modem or through InterInk. The machine can be operated without the keyboard through the use of a special pen, which also serves as a mouse in Windows. Provided applications are set up to make sense of pen input, though my pen input was translated into a Doonesburian gobbledygook that was at first amusing, then troublesome, and finally infuriating. Did I once say that I would carry a pen-based computer someday? Is it too late to eat my words?

Pen input can be made simpler through an onscreen keyboard, but using this keyboard requires phenomenal control because, on the tiny screen, each key is about an eighth of an inch square. So to write this review, I relied on the regular keyboard. Finding it difficult to type on the keyboard because of its size, and wanting to be fair, I asked my wife to give it a try because her hands are about half the size of mine. "Too small," she agreed. Not only that, but it feels funny. The keys are stiff and insensitive, so unless you really press, driving the keys all the way down, your typing doesn't register.

Even more troublesome than the keyboard is the unit's tendency to crash. It locked up on me three times while I had it, each time when I was using the pen as a mouse in Windows. This might be a software problem with Pen Windows. I wasn't able to figure out what was causing the crashes.

The unit folds up neatly in a zippered plastic case. One might think that having the screen and keyboard separate would be a good idea, but it isn't. The screen flops all over the place, making it difficult to hold on your lap. Even on a desktop, I had to prop the screen up against something and pull the keyboard completely out of the case to type (the zipper gets between you and the space bar). A sort of stand is built into the screen half of the case, so you can prop the screen up if the unit is sitting on a flat, rigid surface. The keyboard is held in its half of the case by Velcro.

The power supply is about the size of an electric shaver, and it's very light—it doesn't get in the way or weigh you down like a lot of external power supplies. The unit will run for two continuous hours on a battery charge without the keyboard attached. If the keyboard is attached, it will run for an hour and a half. A beeper warns you when you're down to about five minutes of battery power.

The stated purpose of the DTR-1 is to replace a deskful of documents and notebooks. It's enough computer to do that, and it represents the state of the art of pen-based computing, but it needs a better keyboard and a way to physically attach the keyboard to the computer. The pen input needs to get smarter before I can see replacing anything with this computer.

ROBERT BIXBY

Dauphin Technology
(708) 971-3400
$3,195

Circle Reader Service Number 456

WACKY FUNSTERS

What could be more fun than an irreverent send-up of five and a half arcade favorites? The real things, to be perfectly honest. Tsunami's self-described "geekwad's guide to gaming" offers a campy collection of minigames, spoofing such standards as Asteroids, Pong, and Street Fighter. Unfortunately, the designers forgot the first rule of parody: Be as good as the subject you're ridiculing. These caricatures simply can't muster the addictive quality of the original games they're based on.

COMPUTE

SPEAK UP!

WE at COMPUTE strive to provide you with the latest and most useful home, business, and entertainment computer news and information.

Now we offer the **COMPUTE EDITOR LINE**—a direct link to our editorial staff that lets you truly participate in the shaping of COMPUTE magazine.

The **COMPUTE EDITOR LINE** offers a unique opportunity for you to voice your opinion and let our editors know exactly what is on your mind. The **COMPUTE EDITOR LINE** is our way of staying in touch with you and all your informational needs.

We hope to hear from you soon.

1-900-285-5239

.95¢ per minute.

PET Inc., Box 166, Hollywood, CA 90078.

Must be 18 or older. Touch-tone phones only.

"You are the photographer while three Penthouse Pets cavort and pose in 30 different situations. No question about it - it's astounding."
Forbes F.Y.I.

"Finally something that you may have dreamed about."
WCBC-TV

"Users can ask their pets to take off articles of clothing and perform erotic acts."
Daily News

"What will they think of next?"
Dan Rather, CBS

Find out what the critics are raving about. Experience Penthouse Interactive's Virtual Photo Shoot™. Ninety minutes of full-motion (15 fps), high quality video images. It's so simple. Just snap pictures of your favorite pets and save them to your hard disk. "Develop" them by printing out high-resolution color or B&W copies (depending on your printer). Remember, the sooner you order, the sooner you can stop dreaming and start living the life of a real Penthouse Photographer.

NOW AVAILABLE IN BOTH PC/WINDOWS® AND MACINTOSH® VERSIONS

PC/Windows® Requirements: At least a 33mHz 386 with 4mb of RAM running Windows 3.1. A Video card that supports at least 256 colors (8-bit color). 16-bit color is preferred. A sound card, for example a SoundBlaster/Pro 16 or a Pro Audio Spectrum/16. Many modern computers are already equipped with sound cards, so be sure to check your configuration first. An MPC-compatible CD-ROM drive. A double speed drive (300kb/sec) is preferred.

Macintosh® Requirements: Any Macintosh® computer with an 8 bit (or better) color or grayscale display. A minimum of 5 megabytes of RAM running system 6.0.7 or 8 megabytes of RAM running system 7.0 or higher. A CD-ROM drive. A double-speed (300 KByte) drive is preferred. Apple system software 6.0.7 or higher. QuickTime 1.6 and HyperCard 2.1 are included in your PHI CD-ROM.

Please rush me the Penthouse Interactive CD-ROM:

$129.95 + $4.50 (shipping & handling) x _____ =$ _____ Total Orders =$ _____

Name _____ Address _____

City _____ State _____ Zip _____

❑ Check ❑ Money Order ❑ Visa ❑ Master Card Credit card holders call toll-free 1-800-466-9435

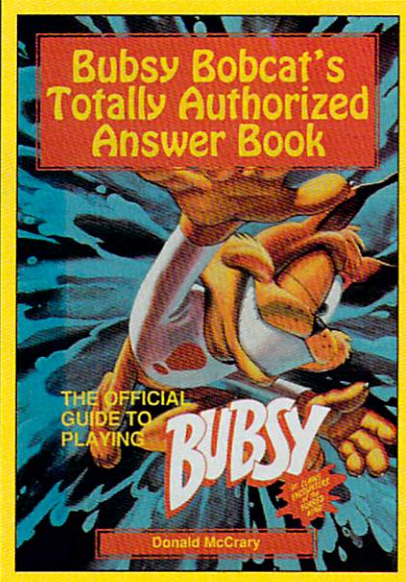
Card Acc't # _____ Exp. Date_____Signature_____
I certify that I am 18 years or older.

Check one: ❑ PC/Windows ❑ Macintosh

Payment must accompany order. Allow 4-6 weeks for delivery.

U. S. MAIL ORDER: PENTHOUSE VIDEO, INC., P. O. BOX 310173, NEWINGTON, CT. 06131

CO401A



WHOA!

A BOOK ABOUT BUBSY BOBCAT!

Here's the official guide to both the Sega and SNES game *Bubsy In: Claws Encounters of the Furred Kind*. It's packed with all kinds of secret stuff you can't find anywhere else—like how to score the most points and find all the secret locations, yarn balls, crates, and other goodies.

Ask for *Bubsy Bobcat's Totally Authorized Answer Book* at your favorite bookstore or computer software store or order direct from COMPUTE by sending $12.95 plus $2.00 for shipping and handling (U.S., $4 to Canada and $6 other) to COMPUTE Books, c/o CCC, 2500 McClellan Ave., Pennsauken, NJ 08109. (Residents of NC, NJ, and NY please add appropriate tax; Canadian orders add 7% goods and services Tax.) All orders must be paid in U.S. funds drawn on a U.S. bank. Orders will be shipped via UPS Ground Service. Offer good while supplies last.

The Official Guide to ROGER WILCO SPACE ADVENTURES

Second Edition

The complete guide to Space Quests I–V. Includes maps, screen shots, and solutions to all five Space Quest adventures.

To order your copy send $16.95 plus $2.50 for shipping and handling (U.S., $4 to Canada and $6 other) to COMPUTE Books, c/o CCC, 2500 McClellan Ave., Pennsauken, NJ 08109. (Residents of NC, NJ, and NY please add appropriate tax; Canadian orders add 7% Goods and Services Tax.) VISA and Mastercard accepted: be sure to include your account number, expiration date, and signature. All orders must be paid in U.S. funds drawn on a U.S. bank. Orders will be shipped via UPS Ground Service. Offer good while supplies last.

REVIEWS

The biggest problem is the games being lampooned—most are far too old and rudimentary to interest today's audiences. Add to this below-par graphics, crude animation, and action that stresses gag content over gameplay. The program's most inspired moments, including a hilarious satire on software copy protection, actually have little to do with the games. The CD-ROM version also features more than 26 minutes of music and comedy sketches.

Clever in concept, Wacky Funsters takes broad aim at its intended targets but completely misses the mark.

SCOTT A. MAY

Tsunami
Distributed by Accolade
(800) 245-7744
$29.95

Circle Reader Service Number 457

BLOODSTONE: AN EPIC DWARVEN TALE

Role-playing adventures are a dime a dozen these days. (They may even be down to a nickel.) So what distinguishes Mindcraft's Bloodstone: An Epic Dwarven Tale from the scores of RPGs crowding software shelves? Unfortunately, very little.

Following an annoyingly slow installation process, Bloodstone rewards with fluid, easy-to-learn, mouse-driven gameplay. But an efficient, Ultima-like overhead view of the characters is marred by the game's seemingly low-resolution graphics; the terrain is crisp but the characters themselves appear as small, indistinguishable color blobs.

Still, Bloodstone is not without its positives. Sound effects are sparse but superb, and the game engine features a diverse collection of magical objects and spells. Most importantly, combat is challenging and lots of fun; it'll take more than a little hacking and slashing to see your party through a monster ambush. Fortunately, Bloodstone does include the obligatory save-game feature so you can try, try again.

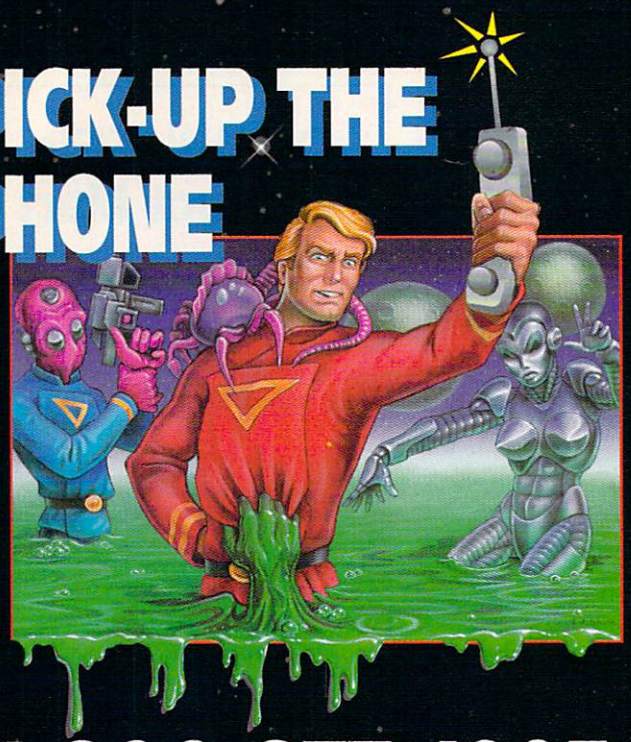
RPG die-hards will enjoy Bloodstone's expansive landscape and exciting melees, but overall this well-done game has little to make it stand out from a crowded pack.

RICK BROIDA

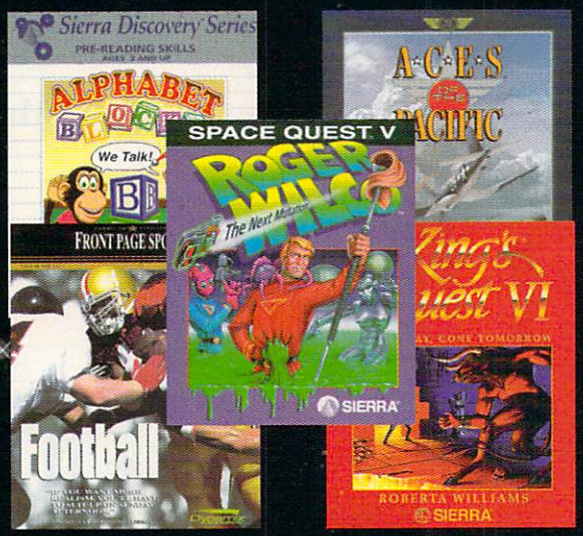
Mindcraft Software
(800) 525-4933
$39.95

Circle Reader Service Number 458 ❐

PICK-UP THE PHONE



AND PICK TWO GAMES FREE!



1-800-877-1995

Choose any Two Sierra Games when you switch to Sprint

Sprint long-distance service just became more valuable - up to $159.95 more! Now, when you switch your home long-distance service to Sprint, you can select any Sierra game, free! And after enjoying six months of high-quality long-distance, you'll receive a second Sierra game or one month of free long-distance service.*

Only Sprint can offer you a nationwide 100% digital, fiber optic network that provides the long-distance quality and reliability you need. Experience for yourself Sprint's "fiber optic" clarity that makes both your long-distance calls and PC data transmissions crystal clear and error free.

But unsurpassed call and data clarity is just one of the many benefits you will enjoy as a Sprint customer...

"The Most℠" A Unique Calling Plan

Sprint offers an unprecedented long-distance calling plan called "The Most℠" available now for all customers. The Most will save Sprint customers 20 percent on already low rates on their calls each month to whomever they talk to the most, including international calls–even if the called person is with a competitive long-distance carrier.

The Most will also provide automatic 20 percent discounts on all calls to Sprint's millions of customers, anytime and anywhere.

When the most frequently called number in a given month is a Sprint customer, Sprint will combine both discounts for an effective overall savings of 36 percent on calls to that number.**

Save on Long Distance When You're away from home too!

Sprint's FONCARD℠ travel card lets you continue to take advantage of clear calling and savings even when you're away from home. Plus the FONCARD is free, with cards available to every member of your family.

The Service You Deserve

At Sprint, we make no compromises when it comes to dependable, personal service - we do it all; operator services, directory assistance, customer service, even instant credit for wrong numbers. And we do it 24 hours a day!

No Risk Guarantee

Your satisfaction is guaranteed: we'll pick up the cost of switching your long distance to Sprint, and will even pay to switch you back if you are not completely satisfied. (Some restrictions apply.)

So why not sign up for Sprint and receive the clarity, savings and service you want while getting two Sierra games you enjoy?

Sprint®

SIERRA®

* Offer valid only in the U.S. and for new Sprint customers. Not valid for FONCARD - only orders. Certain restrictions apply. Free month is up to $25 usage on 4th month invoice. To qualify for a second game or free month of long-distance the customer must bill $20 per month in 3 of the first 6 months.

** THE MOST discounts apply to intra-state calls only where authorized.

Circle Reader Service Number 261

Raging Games

FOR IBM & COMPATABLES

Throw yourself into the Catacombs and Dungeons in a world of Crazed Dragons, Monsters and Magic.

BECOME A TRUE ADVENTURER

BUY ALL 6 FOR THE PRICE OF 5

Check The Boxes Below For The Hottest Thrillers...

Hottest

- ☐ MORAFF'S WORLD
- ☐ COMMANDER KEEN
- ☐ KINGDOM OF KROZ II
- ☐ HUGO'S HOUSE OF HORRORS
- ☐ DUKE NUKEM
- ☐ QUATRIS

all require 640K, EGA/VGA monitor, HD or greater

To Order:

Send This Ad With $2.89, Check or Money Order, for Each Game, Plus $1.00 Shipping for 1st. Game & .50¢ Each Additional Game. (if you order all 6, figure cost & shipping for only 5) 1 - 3 Weeks For Delivery.

"FREE Listing with your order."

– or –

Send $1.00 Cash, Check or Money Order For A Full Listing of all Our Heart Stopping Adventures & Major Discounts.

Only $2.89 ea.

BOOMERANG SOFTWARE

6047 TAMPA AVE., #305
TARZANA, CA 91356
Fax Orders (818) 881-1046

Shareware programs require separate payment if found useful. IBM is a registered trademark of International Business Machines, Inc.

FREE Catalog!

Call 1-800-862-2457
For FREE CD-ROM Catalog

Nightowl 10 $39
Mad Dog McCree $43
New Grolier MPC Encyclopedia $239
So Much Shareware 3 $39

Many Titles In Stock!

Adult Titles Available

UNI-ROM
5694 Mission Ctr. #449,San Diego, CA 92108

MasterCard (619) 279-1139 VISA
FAX (619) 279-8543

Circle Reader Service Number 170

AMIGA • IBM • MAC • WINDOWS

GENERAL INTEREST • CLIP ART • GAMES • FONTS

You Are Invited
to sample the world's finest selection of leading software. Presented by the world's largest distributor of shareware. Call for information.

SMC
Software of the Month Club®
5816 DRYDEN PLACE • CARLSBAD, CA 92008
PH: 619•931•8111, EXT. 509
FAX: 619•929•1163

Arnie's Answers

presents..."A Better Mouse Trap"

Keeps the "Mouse" out of the way when not in use, and the tail out of the way when it is in use. Made of Stainless Steel, with mar free contact surfaces, approx. 16" tall. Three mounting styles; pedestal, clamp, or screw mount. Your choice $23.95 + $4.50 shipping.

VISA / MC 1-800-301-3435
or send check or money order to:
P.O. Box 2216, Cedar Park, TX 78630-2216

Circle Reader Service Number 233

COMPUTE's Product Mart

is a special advertising section designed to benefit you, the PC direct marketer, by letting you advertise directly to the readers that buy. We offer:

- **Marketing Assistance**
  Each ad receives a complementary reader service number that generates a targeted sales lead mailing list.
- **Qualified Readers**
  Our readers search the Product Mart for quality hardware, software, and peripheral products they can *buy*.
- **Guaranteed Audience**
  Our rate base is guaranteed at 275,000 per issue, with an actual monthly circulation of over 300,000.
- **Cost Effectiveness**
  Ad sizes range from 1/9 (2 1/8 × 3) to 2/3 page, and you can request frequency rates of up to 12 times per year. B/W, 2/color and 4/color availability.

Space closing: The 15th of the third month preceding issue date (e.g. May issue closes February 15th). Space limited to a first-reserved, first-served basis.

For ad specifications or more information call

Lucille Dennis
(707) 451-8209
Fax (707) 451-4269

Call now to reserve your space!

What Do PC Jet Jockeys Want?

Hair-Raising Sorties
Death Defying Maneuvers
Heroics
Victory
Realism
HOTAS™
And...

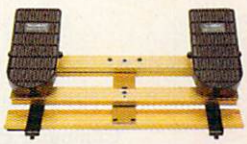
ThrustMaster® Controls

10150 S.W. Nimbus Ave. Suite E-7 Tigard, OR. 97223 PHONE (503)639-3200 FAX (503)620-8094

NEW PRODUCT

The Mark II WCS™ (Programmable Throttle; Also Allows you to Program your Joystick)

FCS™ (Joystick)



RCS™ (Rudder Pedals)

Circle Reader Service Number 147

Device Programmers

Connects to PC parallel printer port

48 PIN ZIF

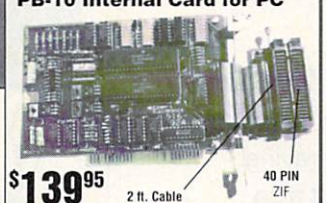
$449.95 EMP-20

SA-20 8 Gang Eprom

20 X 4 Line LCD Display

$750.00 20 Key Keypad

PB-10 Internal Card for PC



$139.95 2 ft. Cable 40 PIN ZIF

- Easy to use software, on-line help, full sceen editor
- **Made in USA**
- 1 & 2 Year Warranty
- Technical Support by phone
- 30 day Money Back Guarantee
- FREE software upgrades available via BBS
- Demo SW via **BBS (EM20DEMO.EXE) (PB10DEMO.EXE)**
- **E(e)proms** 2716 - 8 megabit, 16 bit 27210-27240, 27C400 & 27C800,
- **Flash** 28F256–28F020, (29C256–29C010 (EMP-20 only))
- **Micros** 8741A, 42A, 42AH, 48, 49, 48H, 49H, 55, 87C51, 87C51FX, 87C751,752
- **GAL, PLD** from NS, Lattice, AMD-**16V8, 20V8, 22V10** (EMP-20 only)

FOR MORE INFORMATION CALL

NEEDHAM'S ELECTRONICS, INC.

4539 Orange Grove Ave.
Sacramento, CA 95841
(Monday-Friday, 8 am-5 pm PST)

MasterCard VISA
C.O.D.

(916) 924-8037
BBS (916) 972-8042
FAX (916) 972-9960

Circle Reader Service Number 191

Voice Mail Cash Machine

Press 1 for sales, 2 for service, 3 for live operator *

Make thousands of dollars effortlessly by installing a *BigmOuth* voice package in your 286/386. Use it to answer your home-office phone, rent pocket-pagers, advertise products, or operate a pay-per-call service using major credit cards, passwords or a nationwide 900 #.

To get started, order our $25 **PC Opportunity Toolkit.** It contains all the information you need & its cost is applied to all future purchases.

A Few Home-Based Ventures Featured In Our $25 Toolkit!

- **BigmOuth** voice/fax/pager rentals $295. (Demo $25)
- **QuickLine** write programs in QBasic $1745. (Demo $25)
- **ClientCaller** outbound prospector $1450. (Demo $25)
- **KinderChek** latchkey child monitor $2250. (Demo $25)
- **Rise'n'Shine** wake-up & reminder service $1995. (Demo $25)
- **TollBridge** sell long distance time $1995. (Demo $25)

DemoSource℠
The Voice Application Superstore

TRY our demoline! 818 718-9560

8345 Reseda Bl, Ste 202
Northridge, CA 91324 USA

To order, call 24 hours:
800.283.4759

Trademarks belong to their publishers

Circle Reader Service Number 131

FREE 486 Computer Color Monitor, Printer

FREE CBSI 486 SX Computer

You can earn $2,000 to $10,000 per month from your kitchen table providing needed services for your community. Computer Business Services needs individuals to run a computer from their home. If you purchase our software, we will give you a FREE 486 computer, VGA color monitor, 120 meg hard drive and a printer. If you already have a computer, we will give you a discount. The industrial revolution is over but the service revolution is just starting. Rather than setting up offices all over the U.S., we are showing individuals and couples how to provide our services and letting everyone involved in this service revolution reap the benefits. Our way of training our new service providers and their success rate is the talk of the computer industry. Call or write for a free 3 hour cassette tape and color literature and find out how easy it can be for you to earn money in your spare time and help your community. Begin part-time and still retain the security of your present position.

Call toll-free:

1-800-343-8014, ext. 303

(in Indiana: 317-758-4415) Fax to: (317) 758-5827 *Or Write:*

Computer Business Services, Inc., CBSI Plaza, Ste. 303, Sheridan, IN 46069

Trick Your Kid Into Learning Math!

Adventure LearningWare™
presents
Treasure Hunt Math™

"Treasure Hunt Math is a good example of how educational software can be downright fun for kids." —Shareware Magazine. "This is a great game, my 6-year old can multiply, level 2; my 9-year old will actually sit and do fractions!" —J. Stevenson, MD.

Includes **MathTris™**, the addictive, falling-blocks style math game!

Perfect for your kid; makes a thoughtful gift too.

- *Non-stop action game featuring colorful, animated graphics and sound presents elementary math for grades 1 through 6.
- *Over 1000 math facts covering addition, subtraction, multiplication, division, decimals and percents.
- *Features record keeping, math problem editor, high score list and printing of certificates of achievement.
- *School lab packs & site licenses available.

Requires IBM® PC or compatible with EGA or VGA graphics.

~~$39.95~~ Sugg. List Price. **Only $19.95 + $2.95 postage**
(California residents add $1.65 sales tax)

Order with Visa/MC: (800) 829-5519, 7 days a week.
Fax (408) 224-4455. Inquiries (408) 224-5519.
Or, send check or money order to: Adventure LearningWare
5667 Snell Ave. #236 • San Jose, CA 95123

Our 30 day money back guarantee:
Your complete satisfaction or your money back.

LEARN COMPUTERS!

Home study. Learn the personal computer for a better career and an easier home life. Exciting, easy to follow. **Free booklet.**

CALL 800-223-4542

THE SCHOOL OF COMPUTER TRAINING

6065 Rosewell Road
Dept. KA68002, Atlanta, GA 30328

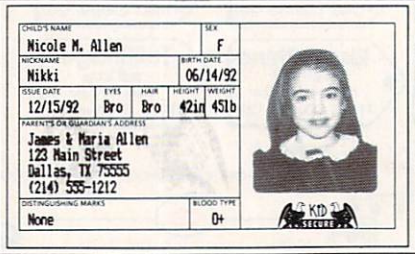
KID SECURE OF AMERICA

This extraordinary program provides a sense of "security" by providing a complete identification of a child should an emergency occur.

- A Business You Can Be Proud Of
- Full or Part Time
- Continued Dealer Support
- Turnkey Package - Computer, printer, software, ID system supplies and training just $6995.00

CALL TODAY for FREE INFORMATION

214-248-9100
3216 Commander Dr.
Suite 101 • Dept 27
Carrollton, TX 75006



Sign Up

Start your own Vinyl Sign Making Business for as little as $2995

- In-store or mobile locations
- No Experience
- Glass etching and Metal engraving equipment also available
- Start part-time from home

CALL TODAY!
1-214-248-9100
D & K Enterprises, Inc.
3216 Commander, Suite 101, Dept 27
Carrollton, Texas 75006

Use your laser printer to make SIGNS AND RUBBER STAMPS

for your own use or a profitable sideline business

Self-Inking and traditional knob handle stamps can be made for less than $1. Retail prices will start in the $10+ range.

Informational signs, nameplates, control panels, name badges, and hundreds of other signage items can be made for pennies per square inch.

FANCY SIGN

Complete systems are less than $2,000

JACKSON MARKING PRODUCTS CO., INC.
Brownsville Rd., D-200, Mt. Vernon, IL 62864
Phone: 800-STAMPCALL Fax: 800-STAMPFAX

MAKE MONEY WITH A COMPUTER

With Best Personalized Books own a lifetime license for a patented product that will please adults, delight and educate children, and return high profits on a minimal investment. That's the sure-fire success formula that Best Personalized Books offers to distributors who are building strong, easy to run, highly profitable businesses.

As the leader in the industry Best Personalized Books has exclusive licensing agreements from Mattel Toys Inc. for Barbie™, from Warner Bros. for Bugs Bunny™ and The Looney Tunes™ and from the National Football League (N.F.L.™).

Best Personalized Books become instant favorites because the child is the star of each story and friends and relatives join in on every adventure. An extensive array of titles appeal to a wide range of ages and tastes, and includes well-written stories on religious and ethnic themes that reinforce family values.

No computer experience is necessary to create Best Personalized Books. A comprehensive training manual shows you how to personalize a book in just minutes. And with Best's strong marketing program, you'll find selling options are limitless. You can work at home, on location at malls, craft fairs, flea markets, home parties, or in conjunction with local businesses or fund-raising groups.

Strong dealer support is a priority, as is the commitment to helping you make even bigger profits with other popular personalized products including clocks, audio cassette tapes, birth announcements, calendars and stationery for teens and adults.

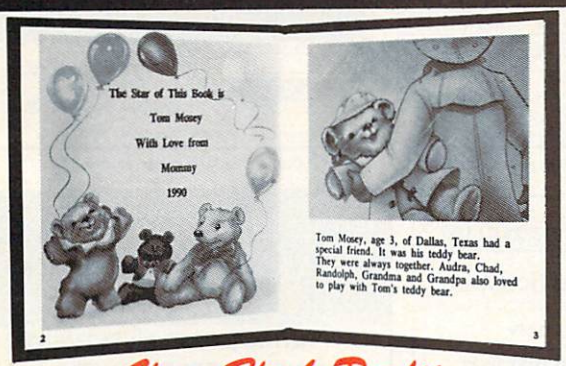
For just $1495 start your own highly profitable business creating personalized children's books with a computer.

Best Personalized Books Inc.
475 Best Personalized Plaza • 4350 Sigma Drive • Dallas, Texas 75244

(214) 385-3800
Call or write for free sample book and information kit

Best Personalized Books holds US patent 5213461 to produce personalized books. Barbie™, Bugs Bunny™, The Looney Tunes™, the N.F.L.™ and associated trademarks are owned and used under exclusive licenses from Mattel Toys, Inc., Warner Bros. and the National Football League.

PERSONALIZED CHILDREN'S BOOKS



Very High Profit

- With our process and a computer you can instantly produce the highest quality personalized children's books and stationery on the market today.
- All books are hardbound with full color illustrations and laser quality printing. Ideally suited for home based business, malls, department stores, fairs or mail order.
- Very simple to operate and highly profitable.
- Only a limited number of dealerships available.

For a complete information packet call today.

(214) 248-9100

D&K ENTERPRISES, INC. • 3216 COMMANDER DRIVE SUITE 101 • DEPT 27 • CARROLLTON, TEXAS 75006

EARN $5000 PER MONTH
With your home computer!

Spending too much on your computer? Now its time to let it earn good money for you! Our two successful Software Packages, MoneyMaker Volume-1 and MoneyMaker Volume-2 will give you all the insider information you need to start your own PROFITABLE BUSINESS Part-Time at home!

Your cost for all this extra income?
Only $29.95 for MoneyMaker Volume-1!

For BOTH VOLUMES NOW send just $39.95 !!!!
Includes FREE Talking Expert System Demo and 3 BIG Catalogs full of more Money Making ideas!

3 Catalogs & Demo Disk - Send your check for $5
We always pay postage

Please specify disk size or we ship 3.5"
- Check, American Express, or P.O. to:
BUSINESS COMPUTER SYSTEMS, INC.
46-16 65TH PLACE DEPT. COM-17
WOODSIDE, N.Y. 11377 *PHONE (718) 898-3126*

Circle Reader Service Number 202

LIQUIDATIONS CLOSEOUTS & BARGAINS

If you think you can't afford quality commercial software ... think again! Although we carry the top 100 software hits and a full line of accessories for your IBM compatible, we specialize in closeouts, liquidations and CD ROM software at rock bottom prices! Let us do the bargain hunting for you! Find out why thousands of computer users choose us as their one stop software supplier.
We publish one of the best catalogs in the industry. Call or write for your free copy!

CD -ROM Examples For Your PC

The Animals	$19.95
CICA Windows	$15.95
Cookbook Heaven	$16.95
Compton's Encyclopedia	$89.95
Dinosaur Adventure	$24.95
Family Doctor	$20.95
Mammals	$22.95
Monster Media '93	$22.95
Shareware Explorer	$39.95
Sound Sensations	$14.95
Too Many Typefonts	$14.95
VGA Spectrum v2	$17.95
Willy Beamish	$17.95
After Dark Trilogy XXX	$34.95
Best of Vivid XXX	$34.95
Hidden Obsessions XXX	$39.95

SOFTWARE Support

Software Support International
2700 N.E. Andresen Rd.
Suite #A-10
Vancouver Wa 98661
(206) 695-1393

CALL TOLL FREE TODAY! **1-800-356-1179**
Major Credit Cards Accepted.
Above examples don't include S/H charges. Call or write for details.

Circle Reader Service Number 210

Digital Orchestra

Musical instruments for your PC or Amiga
PC - 8 Bit, 8K WAV files **Amiga** - 8SVX IFF files

SA01 Bass Guitars - Slap Bass, Fretless, Picked, etc.
SA02 Brass - Tuba, Trombone, Trumpet, French Horn, etc.
SA03 Reeds - Clarinet, Oboe, Saxophone, Bassoon, etc
SA04 Strings - Violin, Viola, Cello, Orch Hits, etc.
SA05 Guitars - Acoustic, Electric, Lead, Jazz, etc.
SA06 Pianos - Pianos, Electric Piano, Honky-Tonk, etc.
SA07 Latin Percussion - Timbale, Conga, Bongo, etc.
SA08 Drums 1 - Bass Drum, Snare, Tom, Cowbell, etc.
SA09 Drums 2 - Hi-hat, Guiro, Agogo, Cymbal, etc.
SA10 Percussion - Steel Drum, Taiko, Bell, Woodblock, etc.
SA11 Organs - Cathedral, Electric, Bandoneon, Reed, etc.
SA12 Ethnic - Sitar, Koto, Bagpipe, Kokyu, Banjo, etc.
SA13 ChrPerc - Marimba, Xylophone, Celesta, etc.
SA14 Pipes - Flute, Piccolo, Recorder, Whistle, etc.
SA15 Ensemble - Orch Hit, Strings, Voice, Solo Choir, etc.
SA16 Choirs - Three or more harmonious singing voices.
SA17 Piano Chords - Major, Minor, 6th, 7th, 9th, etc.
SA18 Guitar Chords - Major, Minor, Min7th, 7th, etc.
SA19 Organ Chords - Church Organ and Electric Organ
SA20 Synthesized - Calliope, Square Wv, Saw Wv, etc.
SA31 More Chords - Accordion, Honky-Tonk Piano
SA32 Organ2 Chords - Sounds of the Cathedral Organ
SA33 Voice Organ - Unique Voice + Elec Organ chrds
SA34 Harp - White keys, Black Keys, single tones.
SA35 SynthSounds - Fantasia, SpaceVox, Sweeps, etc.
SA36 SynthSFX - Electric Cat, Ghost, Stratosphere, etc.
SA40 Foreign - "Hello", "Yes", "1,2,3", etc. in 8 languages

Disk or CD!

The Socerer's Apprentice
2201 Cocquina Drive, Reston, Virginia 22091
Tel (703) 758-8478, Fax (703) 820-4779
1-800-469-6737 (orders only, please).

Each disk, $5.95, 3 for $4.95@, ten for $39.95, Complete collection for $69.95. **NEW - Digital Orchestra on CD - $59.** Also available MED music construction kit & sound sampler. Send for free complete listing. Shipping $3, ten or more disks $5. Add $4 for COD, UPS 2nd Day Air. Canada- $6 shipping, add 30% if paying in Canadian dollars. Canadian checks accepted. Overseas, add $8 shipping. Visa/MC/Check/Money Order.

Circle Reader Service Number 230

PHOENIX FIRE . . . a kind of high-tech Ouija Board. $39.95.

THE MAGIC MIRROR . . . a toolbox for your mind. E. Kinnie, PhD., Clinical Psychologist. $39.95.

MERLIN . . . an apprenticeship. $29.95.

I CHING . . . ancient Chinese wisdom and prophecy. $29.95.

THE MAGIC MOUNTAIN . . . a journey into another reality. Not for children. Male and female versions. $39.95.

Blue Valley, 29 Shepard St., Walton, NY 13856

MasterCard/Visa 1-800-545-6172

Circle Reader Service Number 173

The Amish Outlaw

Shareware Company
3705 Richmond Ave. Staten Island, NY 10312

The Amish Outlaw 10 Most Wanted

1. **Solar Winds**-a unique combination of fast paced arcade action and an outer-space role playing game, with 256 color VGA animated graphics. (JOYSTICK) (VGA) (SB)
2. **Major Stryker**-an excellent shoot'em up game from Apogee, Major Stryker's mission is to destroy the evil aliens and return home to the beautiful Yoshira. (VGA) (SB)
3. **Zone 66**-an ultra high tech 32-bit arcade game for 386 &486 PC's. You pilot your fighter jet through a 360 degree scrolling combat zone that's jam packed with enemies & terrain. (VGA) (Sound Blaster) (Joystick) (HD) (2 Meg RAM)
4. **Monster Bash** - Help Johnny Dash save his dog from count chuck. The most animated game apogee has created to date.(Sound Blaster) (VGA)
5. **Overkill** - an excellent graphic shoot 'em up game in which you destroy planet after planet gaining power as you progress from planet to planet. (VGA) (SB)
6. **Space Chase**- Jason Storm battles the forces of evil for control of a vast city! 10 massive levels. (EGA-VGA) (HD) (SB) (286 OR BETTER)
7. **Catacomb Abyss 3D**- Battle mages, skeleton warriors and zombies as explore the catacombs. (PC-13)(588k of free ram) (EGA-VGA) (Hard Drive) (Sound Blaster)
8. **Bio Menace**-Total action, Duke Nukum-style, shoot-everything-that-moves adventure. (Sound Blaster) (EGA-VGA)
9. **Megatron**-enter the labyrinth combat zone and hunt down the adversary, experience the highest level of virtual reality combat available in shareware to date. (2 can play by modem) (VGA) (Hard Drive) (mouse optional) (2 disks)
10. **Gateworld** -Captain Klondike meets the G.O.R.G. machine in an asteroid in this great arcade action game.(VGA) (Sound Blaster)

3.5" AND 5.25" SAME PRICE 1-9 DISKS $3.00 10& UP $2.50
$3.00 SHIPPING & HANDLING

CALL: 1-800-947-4346
FOR FREE CATALOGUE

Circle Reader Service Number 229

SALE! Unbelievable CD-ROM Price Breakthrough!

Make Your Own Bundle - Select 3 Titles

Any three for $79.95	Any three for $59.95
• Loom	• World Atlas
• Secret Weapons of the Luftwaffe	• US Atlas 3.0 (MPC)
• Battlechess	• Family Choice
• Space Quest IV	• Jones in the Fast Lane
• Monkey Island	• Languages of the World
• Wing Commander & Ultima VI	• Stellar 7 (space battle)
• Kings Quest V	• Time Table History
• Where in the World is Carmen Deluxe	• Mavis Teaches Typing
• Authur's Teacher Trouble	• Sherlock Holmes
• Total Baseball 93	• Sports Illustrated Almanac (MPC)
• Dinosaur Adventure	• Sleeping Beauty
• Chessmaster 3000	• CD Storytime

Many Additional Titles Available. Call or Write for Our Free Catalog

To Order Call: (419) 874-0288 or Fax: (419) 874-2944 or Mail to:
Computer Gallery
P.O. Box 409, Perrysburg, OH 43552

$5.00 S&H per order. Visa, MC, Personal Check or Money Order Accepted. Add $5.00 for 2nd Day or $10.00 for Overnight Delivery.

Circle Reader Service Number 204

IBM PC, PCjr XT, AT, & Tandy Users

Not everyone needs the fastest computer money can buy. Run Lotus 1-2-3, WordPerfect, dBase, and most other software without buying a new computer! We specialize in hardware products that allow older computers to run the latest software.

Call for information and free catalog!

You don't have to buy a new Computer to run the Latest Software!

(800) 922-7257

PC ENTERPRISES
2400 Belmar Blvd.
PO Box 292
Belmar, NJ 07719

Computer Upgrade Specialists Since 1984

Circle Reader Service Number 221

VALUE SOFTWARE "CHECK" US OUT

The Best Shareware On The Planet

- ✓ *Windows/Games/Fonts*
- ✓ *Multimedia/Graphics*
- ✓ *Educational/Utilities*
- ✓ *Desktop Publishing*
- ✓ *Business Applications*
- ✓ *New User Start Up Kits*

IBM Compatible/Virus Free/ASP Member

***FREE* Catalog, Call 800-824-0413**

Circle Reader Service Number 127

Games Too Expensive?

Consider Pre-owned Software

- Save big $$$ over new
- Original disks and manuals
- IBM - AMIGA - C64
- Hard-to-find classics plus all the latest releases
- Call or write for free catalog (specify computer)

Bare Bones Software
940 4th Ave #222 Huntington WV 25701
1-800-638-1123
Customer Service: 304-529-0461
BBS for complete list: 304-529-7050

REMOVE HARDWARE LOCKS

PROTECT YOUR INVESTMENT!
MAINTAIN PRODUCTIVITY!
Software utility that allows for the removal of hardware locks.

Available for most major CAD/CAM and PCB software programs

Easy - Simple - Guaranteed

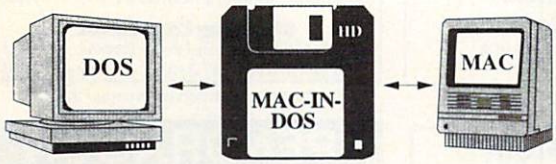
Programs start at $99.00 U.S.
Visa and Mastercard Welcome
Call or Fax for more Information

SafeSoft Systems Inc. PH (204)669-4639
201 - 1111 Munroe Ave. FAX(204)668-3566
Winnipeg, Mb. Canada R2K 3Z5

Circle Reader Service Number 212

MAC-IN-DOS

Software breakthrough lets PCs read, write, and format Macintosh high-density diskettes.



Call 1-800-628-3475 today.

Pacific Micro

201 San Antonio Circle, C250, Mountain View, CA 94040

Circle Reader Service Number 156

Circle Reader Service Number 128

ORDER YOUR LIMITED-EDITION PENTHOUSE ONLINE 9600 DATA/FAX MODEM TODAY AND SAVE!

A CUSTOM, LIMITED EDITION PENTHOUSE ONLINE 9600 DATA/FAX MODEM FOR LESS THAN $170!

Penthouse magazine has teamed up with U.S. Robotics to offer a top-grade 9600-bps data/fax modem for only $169 (internal board) or $179 (external). These high-speed V.32-compatible modems feature V.42/MNP 2–4 error control, V.42bis/MNP 5 data compression, and throughput of up to 38.4. The external model (shown) has a custom, limited-edition black case with the famous Penthouse Key symbol.

Features include autodial and -answer, frequently called number storage, nonvolatile RAM (stores all modem settings), summary of current modem setting display, speaker with volume control, onscreen call progress reporting, five-year parts and service warranty, an extensive owner's manual, and a quick-reference card. The internal modem comes on a 10-inch board that fits all IBM PC bus-compatible computers, and can be addressed on COM ports 1–4.

ORDER YOUR CUSTOM MODEM TODAY!

Plus, you will also receive the BLAST® FAX PC™ fax software, which lets you send or receive faxes from your computer. Compatible with all G3 machines, BLAST® FAX PC™ allows transmission scheduling, hot-key faxing from within applications, background operation, and much, much more.

Circle Reader Service Number 107

FREE
IBM & MAC SOFTWARE CATALOG
32 Pages! ASP Member

SOFTSHOPPE, INC.
P.O. Box 247
ARTESIA, CA 90701
Tel: (310) 802-1333
FAX: (310) 802-1494

Toll-Free—24 Hrs.
1-800-851-8089

Circle Reader Service Number 126

Islamic
Software for DOS/Win/Mac
Qur'an, Hadith, Islamic Law

The Alim™ lets you search and study the Qur'an, Hadith, Fiqh, Islamic history, biographies, commentaries, dictionaries, concordances, and more! All in one inexpensive integrated package with both Arabic and English support!

(800) 443-3636
(713) 893-0805 or (713) 893-0558 fax
ISL Software Corporation
2037 Featherwood Street, Dept CM-1193
Silver Spring, MD 20904-6645 USA

Circle Reader Service Number 232

Save BIG $$$ on printing costs

Jet-Master
Re-usable jet-printer recharge kits, Single and Multicolor.
Buy kit once, then just buy ink as needed. Costs as low as $1 per recharge. **from $29.95**

WaterProof Ink Available

Re-ink your ribbon cartridges for less than 5¢ with the famous MacInker™
Over 210,000 sold

Beautiful printing and longer printhead life.
Avg. cartridge can be re-inked 60-100 times.
Universal cartridge model **79.95**
Epson MacInker **49.95**
Multicolor Adapter (4-band ribbons).....**40.00**

Computer Friends, Inc.
14250 NW Science Park Drive - Portland, OR 97229
To Order **1-800-547-3303** Tel. **(503) 626-2291**

Circle Reader Service Number 225

WIN LOTTO!
GAIL HOWARD'S
SMART LUCK® LOTTERY SYSTEMS

Won 39 Lotto Jackpots Worth $79.2 Million Dollars!

The ONLY Software with *Documented* Jackpot Winners

ADVANTAGE PLUS™ — COMPLETE histories for ALL 59 Lotto games FREE • No other software has more scientific tools for picking winners • Over 50 valuable charts & reports • 86-page manual on disk shows how to identify winning patterns • Automatic SMART PICKS™ • A $295.00 value. Special Offer Limited Time Only $79.95 + $3 S/H

COMPUTER WHEEL™ — Has 252 Lotto Wheeling Systems with specific win guarantees. All flawless. If one system fails its win guarantee you get DOUBLE your money back! $39.50 + $3 S/H

BOTH for only $99.95 + $3 S/H
(IBM/Comp. 5.25 or 3.5)

USE THIS SYSTEM AND YOU WILL TRASH ALL YOUR OTHER LOTTERY SOFTWARE!

A *PROVEN* WINNER! • DON'T SETTLE FOR LESS.

VISA **1-800-876-4245** MasterCard
SMART LUCK® SOFTWARE
Dept. C-12, P.O. Box 1519 • White Plains, NY 10602
1-800-876-GAIL (4245) or 914-761-2333

Circle Reader Service Number 109

NEW and Challenging

From **NO-FRILLS Software**

SNOSAE
Save the earth – *and yourself* – from the reptilian alien — A classical text adventure game (on-line hints): $15.00

***XXTICS* I**
Test your word abilities to the max with these 50 Crostics Puzzles: $11.00

Requires IBM or compatible and HD; sent on 5¼", 360K floppies.
Send name, address, check or money order to:
NO FRILLS SOFTWARE
P.O. Box 44608, Dept. C
Eden Prairie, MN 55344
MN residents add 6½% sales tax.
Allow 4 to 6 weeks for delivery.

PENDRAGON Software Library

Public Domain/Shareware for IBM & Compatibles
ASP Member

No Viruses * Latest Versions

Over 2500 Programs

FREE 80 page Catalog

We also carry **CD-ROM** discs

Premier Shareware CD - 1 Gig - $24.00
Desktop Publishers Dream Disk + Book
650 Megs of Fonts and Clipart - $36.00

PO Box 56
E.Greenwich, RI 02818

1-800-828-DISK

Circle Reader Service Number 235

Computerfun
Home Entertainment Organizer

Computerize your Video, Audio, and Book Libraries with this advanced database software for IBM. Search by multiple criteria. Instantly change sort order. Then print personalized labels or reports with a keystroke. Indispensable for the serious video or audiophile.

Now only $49.95 + $3. S&H.
30 Day FREE TRIAL
Pay only after you test drive HEO on your own computer, or return it for full credit.

To order call 1-800-238-2154 *anytime.*

Circle Reader Service Number 145

2000 Fonts
Fantazia Fonts and Sounds

Over 2000 TrueType and Adobe Fonts on CD-ROM
Hundreds of Bonus Sound Files
Included is a FREE 102 page book with a sample printout of all the fonts.

Icons, Wallpaper and More for Windows
5000 Icons and 800 Pieces of Wallpaper
Includes a FULL color book of the icons and wallpaper
*50 Free Fonts *Bonus Sound Files

Order either of these Quality CD-ROM's for $49.95
Or get both AMAZING collections for only $79.95

1-800-951-0877

Fantazia Concepts, Inc.
35143 Vine Street
Eastlake, Ohio 44095
Fax 216-951-9241

Circle Reader Service Number 134

Ready . . . for our extensive selection of software at low, reasonable rates

Set . . . for thousands of titles for your IBM, Amiga, Atari, Mac, CD Rom & Genesis?

Go . . . Call now for a free listing

1-800-433-2938

Wedgwood Rental
5316 Woodway Drive
Fort Worth, Texas 76133

Circle Reader Service Number 172

FREE CD-ROM DISC!

Mega Demo & Test contains 350 Megs of PC Shareware & PD software. Including Special CD-ROM Benchmark and Test Utilities written by our programming staff, & NOT available on any other CD-ROM Discs. Our Special Test Utilities measure throughput as well as access time in a reliable and consistent manner for a meaningful real-world benchmark for CD drives. The Disc and Interface Software are fully functional (Even for BBS Use) and not crippled in any way. When purchased separately Mega Demo and Test is $14.00 plus $6.00 for S&H However for a Limited Time This Demo and Test CD-ROM Disc is Free with any CD Disc purchase.

These are the Only Shareware & PD CD-ROM Discs with both a DOS, and a Windows 3.1 "Hypertext" Retrieval Interface. Plus All CD Discs are BBS Ready, and Include files.bbs plus our BBS Door with "Remote User" Mouseable Pull-Down Menu Interface.

PROFIT PRESS, 824 E. Ft. Lowell, Tucson, AZ 85719 - Info (602) 770-0000
FAX (602) 770-0005 - BBS (602) 770-0008

The prices listed above do not include shipping and handling. Special shipping and shipping to foreign countries is available.

MasterCard VISA

S.R.P. $79.00 ea. **New! JUST RELEASED! New!** S.R.P. $79.00 ea.

Mega CD-ROM³ PC Shareware Spectacular

650 Megs 1 Plus Gigs Uncompressed! Our Newest in The Mega CD-ROM Series. Contains Utilities of All Types, Word Processors, Data Base, Communications, Graphics Tools, CAD, Business, Education, Programming, Hobby, Games, Sports, Sound Files, 256 Color GIF's, FLI's, Bibles, Fonts, Windows Programs, BBS, Plus Much More!

Mega Windows² Windows Shareware / Public Domain

Our Newest in the Mega Windows Series. This Disc Contains Windows Utilities of All Types, Windows Application Programs of All Types. Windows Communications Programs, Windows Games, Windows Fonts, Windows 256 Color Graphics .BMP, Windows Sound Files .WAV, Windows Drivers and Icons, plus OS/2 Shareware, and Much Much More!

Mega Games¹ PC Games, Graphics & Sounds

Contains PC Games from Shareware Companies such as Apogee, and Epic, plus many many others. Game Bytes Electronic Magazine, with file categories that include Arcade, Adventure, Puzzles, Mind & Strategy, War Games, Card Games, RPG Games, Plus 256 Color GIF's, FLI's of all types & Includes Sound Files, .MOD, .ROL, .WAV & .VOC

Publisher Direct Price **$29.00 ea.** Or All 3 New Mega Fantastic MEGA CD-ROM Discs for Only! **$59.00**

Genuine SONY Caddies $3.50 each with ANY $49.00 CD-ROM Disc Purchase Limit of 10 Per Customer

ForBidden Subjects! This Disc Contains Hacking, Phreaking, Tone Box Information, Anarchy, Subculture, Magic, Internet & Computer Security Secrets, Bomb Plans, FBI & Police Net Files, Virus Code, Sick & Twisted Graphics, UFO, Occult, Even Ham Radio Files, Plus Much Much More! Everything Fun and Interesting That Absolutely No One Wants You to Know About Includes MegaSearch for those Fascinating Late Night Text Searches. & (if You Dare) for BBS there's files.bbs Plus MegaDoor and MegaTerminal.

Our Exclusive! Special Price **$39.00** S.R.P. $79.00 ea.

fao Gold "The Best of the Best" $39.00 each The Full Set All 3 Only!

Volumes 1, 2, & 3 "Best of the Best" **$99.00 SET**

For Adults Only "GOLD" "Wife Proof Labels" Each Over 600 MegaBytes Many Not On FAO 123 - 256 Color SVGA Gif's with NO BBS Logos! Plus Animated FLI's, GL's, & DL's, Includes Games, and Fantasy Text Files. S.R.P. $79.00 each.

fao 3 Disc Set 1,892 Megs contains over 16,000 Files! All 3 Only!

Volumes 1, 2, & 3 **$69.00 SET**

For Adults Only "Wife Proof Labels" 256 Color SVGA GIF's, Plus Animated FLI's, GL's & DL's Includes Games, & Fantasy Text Files. 3 Disc Set 1,892 Megs - 16,000+ Files! S.R.P. for this Set of 3 Discs $199.00.

ORDERS ONLY! CALL TOLL FREE
1-800-843-7990

Circle Reader Service Number 224

FREE!

Download the HOTTEST & SEXIEST Images from our ADULT On-Line Magazine - FREE!

LACE is an Adult On-Line Magazine that offers you:

- **ORIGINAL** Adult GIF Images not available on any other BBS!
- **GORGEOUS,** Sexy & Exotic Models both Amateur and Professional !
- **QUALITY** Adult GIF Images and VGA Movies produced by professionals !
- **HIGH SPEED** access available on ALL lines (14.4k down to 1200 baud).

Set your Modem to 8-N-1 and your terminal to ANSI Graphics and dial:

(818) 709 - 4275

Questions? Call our voice line at (818) 709-3795.

LACE

the on-line adult magazine

Must be 18 Years of Age or Older • Limited Offer

I'm Christy, the Systems Administrator and part time Glamour Model on LACE. Come & see my images & visit with me On-Line.

Circle Reader Service Number 178

FREE TECH SUPPORT

CD-ROM BIG BANG THEORY

Ask about our new CD-ROM CLUB

THE AL BUNDY
Our tribute to the everyday guy! 3-Some includes Hooter Heaven, The Adventures of Seymore Butts & Paradise Club Interactive for Windows or Digital Dancing for Mac Users. To make it a 4-Way, just add Nightwatch Interactive.

TRY A 3-SOME OR A 4-WAY
Take a look at our super 3-Somes & 4-Ways and let us help you build your personal library.

NOT FOR CABLE TV 2
3-Some bundle has Cat & Mouse - The Movie, New Wave Hookers and Nightwatch Interactive. For excellent 4-Way action, add Traci I Love You.

NOT READY FOR HOLLYWOOD
Let Porn's biggest stars sizzle your screen & blow your sound card. 3-Some includes Wicked - The Movie, Traci I Love You, and The Mark of Zara Photo CD. 4-Way action? Add Legends of Porn 2.

1-800-354-5353
ORDER FAX LINE: (305) 426-9801

STAR WARE PUBLISHING CORPORATION

Department 268 • P.O. Box 4188
Deerfield Beach, FL 33442

MUST BE 21 YEARS OLD

FOR COUPLES ONLY
Porn with a plot? We're close with our 3-Some including Cat & Mouse - The Movie, Betrayal and Sleeping Beauties. Swing into 4-Way with Double Play II.

HOT MAGAZINE HONEYS
3-Some includes the much anticipated Penthouse Interactive (counts as two) and Wicked Photo CD starring Playmate Teri Weigel. Add Hooter Heaven & make it a 4-Way.

SUPER VGA #2
Forget GIF disks!! In our 3-Some, you get The Mark of Zara Photo CD, Cat & Mouse Photo CD and Double Play I. 4-Way special bonus – add Wicked Photo CD with free Kodak Access software.

Test Drive Our CYBEROTICA BBS (305) 428-0012
Adult Rated GIFs, JPEGs and Movies
Chat with Hostess Sin-D
Multi-Player Game
On-Line GIF Viewing
Thronet, Fidonet and Internet

ALL 3-Somes only $168
4 - Way action only $208

SHIPPING INFORMATION
Fax and Mail Orders receive free 2nd day shipping upgrade
• UPS Ground - $4.50 • 2nd Day - $7.25
• Next Day - $16.25 • Foreign Express - 22.00
• 4-Ways slightly more

MasterCard VISA

FREE 1 Year Subscription to CD-ROM Multimedia Magazine with every purchase of a Starware 3-Some or 4-Way

Circle Reader Service Number 130

PRODUCT MART

SeXXy Software™
SeXXy DISKS™

SeXXcapades™ . . . The GAME
The First Adult Game with TRUE SOUND and 256 Color VGA Graphics

The game everyone has been waiting for. For that evening you won't forget with a loved one or group of very close friends. Fulfill your sexual desires. Find our how your partner would really like to make love. I Over 80 Color VGA Scenes • Real Voices Guide the Action • Foreplay Option • Play with 2-8 Close Friends. Now supports SoundBlaster™ cards!
$79 – Special Offer: $69 with purchase of any CC disk. / VGA and hard disk required - shipped on high density disks.

CONNOISSEUR COLLECTION ALL NEW! In 256 Color VGA!!

ALL movies have sound - play thru standard speaker or SoundBlaster™

SeXXy Disk #CC1 • ★ YOU BE THE STAR ★ The FIRST CUSTOMIZABLE movie allows you to write the dialog and the title.
SeXXy Disk #CC2 • THE FIRST SOUND MOVIE! The first computer movie with SOUND. See the incredible 256 color VGA graphics while hearing the actual dialog. OURS EXCLUSIVELY!
SeXXy Disk #CC3 • THE BEST MOVIE! The best computer movie available. Only for the serious collector. 256 stunning VGA colors.
SeXXy Disk #CC4 • VOLUPTUOUS MOVIE with Sound! See and hear a symphony of exceptionally proportioned women.
SeXXy Disk #CC5 • ODDITIES MOVIE with Sound! See men of incredible proportions and women with unique abilities - UNBELIEVABLE!

Prices: 1 Movie $29. 3 Movies $65. 5 Movies $94

Now You Can Have Your Own GIRLFRIEND™ . . . a sensuous woman living in your computer!

GIRLFRIEND is the first **VIRTUAL WOMAN**. You can watch her, talk to her, ask her questions and relate with her. Over 100 actual VGA photographs allow you to see your girlfriend as you ask her to wear diffrent outfits, and guide her into different sexual activities. As a true artificial intelligence program, **GIRLFRIEND** starts with a 3000 word vocabulary and actually GROWS the more you use it. She will remember your name, your birthday an your likes and dislikes. **GIRLFRIEND** comes with the base software and **GIRLFRIEND LISA.** Additional girls will be added. This program requires 7-10MB of free space.

SG3 GIRLFRIEND - Special Introductory Price $69. FREE - Second GIRLFRIEND Just Added.
NEW! SG7 GIRLFRIEND TERI - 300+ PICTURES Price $89.

ORIGINAL SeXXy DISKS™ - 6 disk set with movies, pictures, games *$32*

ADD $4 S/H • 3.5" Or FOREIGN ORDERS ADD $2/DISK • IN PA ADD TAX • MUST STATE AGE OVER 21 YEARS.

VISA/MC Orders Only: 800-243-1515 Ext. 600FM / 24HRS / 7 DAYS
FAX (215)997-2571 • Or CK/MO to: Sexy Software, P.O. Box 220, Dept. 600FM, Hatfield, PA 19440

SeXXy Software™
SeXXy CD-ROMS™

FREE $99 Shareware CD-ROM

with purchase of any 3 CD-ROMS. Not a cheap demo disk – contains thousands of valuable programs in all catagones – games, windows, business, education

SeXXy FLIX

Full Length Digital Movies - Ours Exclusively!

KING DONG – The dirtiest dinosaur movie ever made - CRYSTAL HOLLAND stars with prehistoric monsters, cannibals, and lots of special effects.
TOO NAUGHTY TO SAY NO – HARRY REEMS and GINGER LYNN star in an erotic daydream in a boarding school for girls – from CABALLERO HOME VIDEO, dir. SUZE RANDALL.
SEX GAMES – When a hacker taps into a computer dating service he is able to program the wildest fantasies of its sexiest member – SAUNA GRANT stars.
SeXXcapades . . . The MOVIE – See incredible uses of a mouse and a joystick as a group of friends play our popular SeXXcapades game.

NO HARD DISK SPACE REQUIRED – WINDOWS NOT REQUIRED

SeXXy CD-ROMS

SeXXy CD #1 the premiere adult XXX collection – 680 MB of action with: 5268 VGA pictures, 87 movies, 674 stones, games DARE TO COMPARE!
SeXXy CD #2 an exclusive collection containing over 900 Super VGA pictures (1024 x 768 x 256) and over 400 VGA pictures (640 x 480 x 256) These are pictures that cannot be found anywhere else! The women and the quality are stunning
SeXXy CD #3 another collection of over 650 MB of the hottest pictures available. Over 5,000 VGA pictures, movies and utilities that will have you spending days just trying to see it all!

MENU DRIVEN VIEWING - NO DUPLICATION

MIX & MATCH CD-ROMS / SeXXy PIX™

BUSTY BABES • ECSTACY • ASIAN LADIES • HOT PIX 2, 3, 4 & 5 • STORM 3 • TROPICAL GIRLS EXOTIC GIRLS • 7TH HEAVEN • ADULT PALETTE • DIRTY TALK • ANIMATION FANTASIES 1 & 2 • AMATEUR MODELS • SOUTHERN BEAUTIES • ADULT REF. LIBRARY • NIGHTWATCH INTERACTIVE • SEYMOUR BUTTS

ALL CD-ROMS: First 3: $99 each or 3 for $199 (Plus FREE Shareware CD-ROM)
Then: $69 each or 3 for $149

Circle Reader Service Number 116

Where Adults Come To Play!

The Choice For HOT MODEM FUN!

- HOT CHAT Live W/Thousands of Ladies & Gents in Groups & Private!
- Tons Of Sizzling Hot Message Areas, Shareware Files and Adult GIFs!
- Matchmaker With "DATING-BASE"!
- Straight and Gay Sections!
- Live Competitive Tournament Gaming!
- Unlimited Connect With One Low Price!
- Local Numbers In Over 800 Cities!
- Plus Much Much More!

Now With Our Exclusive FANTASY Area!

ODYSSEY BBS

For Modem Signup or More Info Call:
818-358-6968

Over 18 (BNI)

Circle Reader Service Number 141

The Rain Forest ONLINE!

14 Systems to Choose from!

Business Beat	Rain Forest
Magick	W.D. System
Mac National	Trading Pen
JewelLink	Religious
SportsLink	CoinLink
CollectLink	ComicLink
The Educator	Alternatives

Local Access From Most Major Cities!

New Sign-ups Call! 1(813)943-8000

Customer Service: 1(813)943-0113

COLOR RIBBONS & PAPER

COLORS: BLACK, RED, BLUE, GREEN, BROWN, PURPLE, YELLOW

Ribbons Price/Each	Black	Color	T-Shirt
Brother 1109	$5.50	$6.50	$7.50
Citizen GSX140/240, 4-CLR	$4.00	$10.00	$15.00
Epson MX-80	$3.25	$5.00	$6.75
Epson LQ 500/870	$4.50	$6.50	$7.75
Okidata 182/192	$4.00	$7.50	
Panasonic 1180/1124	$4.25	$7.50	
Panasonic KXP 2123 4-CLR	$6.50	$12.50	$15.00
Star NX1000 4-CLR	$3.50	$6.25	$10.00
Star NX1020 4-CLR	$6.00	$11.50	$15.00
Star NX2420 4-CLR	$6.00	$12.50	$15.00

COLOR LASER TONER/COLOR INK JET REFILLS

COLOR PAPER: 200 SHTS/ BRIGHT PK. $10.90
PASTEL PK. $7.90 BANNER PAPER 45 FT. RL. $9.95

CUSTOM T-SHIRT, DESIGN YOUR OWN

- HEAT TRANSFER RIBBONS/ LASER TONER
- TRANSFER PAPER FOR DOT MATRIX/INK JET/ LASER PRINTERS

Min. Orders $25.00, Min. S&H $6.00, Prices subject to change!

RAMCO COMPUTER SUPPLIES
P.O. Box 475, Manteno, IL 800-522-6922 or 815-468-8081

Circle Reader Service Number 138

CLOSEOUTS
For IBM/MS-DOS:

$10 MICROPROSE DEALS
MILLENIUM, DR. DOOM'S REVENGE, AMAZING SPIDERMAN, LIGHTSPEED, COVERT ACTION -or- TWILIGHT 2000

$15 MICROPROSE DEALS
KNIGHTS OF THE SKY, FLAMES OF FREEDOM, RED STORM RISING, ALLIED FORCES, MEGATRAVELLER 1

LAND, SEA & AIR BUNDLE!! ONLY $19.50
Includes: Pirates!, Airborne Ranger & Gunship. 5.25" only.

MICROPROSE SPECIAL
Your Choice $25 each
GUNSHIP 2000
F-117A STEALTH FIGHTER

SIERRA $10 SPECIALS
CAMELOT, POLICE QUEST 2, -or- COLONEL'S BEQUEST.

SIERRA DEALS $20 EACH
3 or more, ONLY $15 EACH
KING'S QUEST 1, 2, 3 -or- 4, HEART OF CHINA, RISE OF THE DRAGON, LEISURE SUIT LARRY 1, 2, 3 -or- 5, ZELIARD, QUEST FOR GLORY 1 -or- 2, POLICE QUEST 1 -or- 3, SPACE QUEST 1, 2 -or- 3.

A-10 TANK KILLER, HEART OF CHINA & STELLAR 7 BUNDLE
ALL 3 SIERRA GAMES...$30

MORE SPECIAL DEALS

V for VICTORY: D-DAY UTAH BEACH	$15
STAR TREK 5: FINAL FRONTIER	$20
SEX VIXENS FROM SPACE	$14.50
B.A.T., by UBI-SOFT	$10
NIGHT HUNTER, by UBI-SOFT	$5
MUTANOID WORD CHALLENGE	$15
MUTANOID MATH CHALLENGE	$15
MONTY PYTHON'S FLYING CIRCUS	$5
BATTLECHESS 2, by INTERPLAY	$15

CREDIT CARD ORDERS $25 MINIMUM.
1-800-676-6616
Orders Only, please!!

COMPSULT
P.O. BOX 5160
SAN LUIS OBISPO, CA 93403

WE ALSO CARRY APPLE, MAC, C64/128, AMIGA, ATARI & MORE
To order, send check or money order to the above address. California orders must include 7.25% sales tax. All orders must include shipping charges of $5 for U.S.A., $8 for Canada, or $15 for International. For our complete catalog send $2 in U.S. postage stamps or cash. A catalog is sent FREE with any order. Be sure to specify your computer type & disk size when ordering. For all inquiries & additional information, call (805) 544-6616.

Circle Reader Service Number 150

Get Into CD-ROM from PC-SIG

World of Windows CD-ROM $19.95
Over 900 TrueTpe Fonts, 400 ATM Fonts, 10,000 icons 350 Shareware Windows appliactions. Text and programs reviewed in July/August issue of Shareware Magzine also included..

World of Games CD-ROM $19.95
This new disk is jammed with over 550 games. Arcade, Adventure, Sports, Cards, Trivia, and more. Articles and programs reviewed in May/June issue of Shareware Magazine also included.

PC-SIG 1030-D E. Duane Ave.
Sunnyvale, CA 94086
1-800-245-6717 or 408-730-2107 (Fax)
VISA, MasterCard or COD

Circle Reader Service Number 250

COMPUTERIZE YOUR HOME

DYNASTY FOR WINDOWS

CONTROL & MONITOR

- SECURITY SYSTEMS • LIGHTS & APPLIANCES
- AUDIO / VIDEO EQUIPMENT
- TELEPHONES & INTERCOMS

HAL
HOME AUTOMATION LABORATORIES
5500 Highlands Pkwy. Suite 450
Smyrna, GA 30082
Call 1-800-HOME-LAB for a FREE Catalog

Circle Reader Service Number 245

COMPUTE CATALOG CORNER

B. R. ROMS

C D ROMS
ALL CATEGORIES
BUSINESS-GAMES-CLIPART-GRAPHICS
RELIGION-EDUCATIONAL-HEALTH-
LARGE ADULT LIBRARY (OVER 21)
DISCOUNT PRICES
CALL FOR LATEST LISTINGS
1-800-757-7778
VISA-MASTERCARD-MONEY ORDER
MOST ORDERS SHIPPED 24 HRS.
P.O. BOX 216, LAFONTAINE, IN 46940

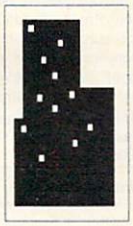
Circle Reader Service Number 121

We need you.

American Heart Association

They'll never know you're home based!

Appearance.



Reality.

Introducing *SuiteTalker*, our revolutionary mini voicemail system for MS-Windows. Designed just for small and home-based offices, our software accepts mailorders, sends faxes or records messages from only $1195. Even when you're working from a garage, you'll sound like a Fortune 500. Ask about our $25 Opportunity Toolkit loaded with a variety of voice ventures!

Try our 24 hr demo! Record your voice! Call:
818-718-9560

You'll get a $5 rebate on your long distance call upon purchase. For live sales support, call 800 283-4759. All major credit cards accepted.

Authorized Reseller

DemoSource sm
The Voice Application Superstore
8345 Reseda Bl Ste 202 Northridge CA 91324 USA

Circle Reader Service Number 131

STONEHENGE VIEWPOINT

GLASTONBURY TREASURES	$8.00
EXPLORING ROCK ART	$8.00
STONEHENGE SCROLLS	$8.00
CELTIC SECRETS	$8.00
CROP CIRCLE SECRETS	$8.00
FULL MEASURE	$8.00
THE DIFFUSION ISSUE	$8.00
AMERICA'S 1ST CROP CIRCLE	$8.00
MEGALITHIC ADVENTURES	$8.00
THE ECLETIC EPIGRAPHER	$9.00
THE LINEAR VISION	$9.00

"The future is here, don't miss it!"
FREE Catalog, (805) 687-9350
STONEHENGE VIEWPOINT
2261 Las Positas Road, Dept. OM
Santa Barbara, CA 93105

Adam & Eve

Our fantasy-filled catalog, packed with sensual products, videos and more, is an arousing adventure not to be missed! Satisfaction guaranteed!

Over 3 million customers have enjoyed our discreet, shop-by-mail service for over 22 years. Send now for your **FREE** catalog and receive a 50% discount coupon and free video offer. Must be 21 years of age.

800-274-0333
Adam & Eve
Dept. CMP2, P.O. Box 200, Carrboro, NC 27510.

FITNESS 1+

GET IN THE BEST SHAPE OF YOU LIFE... in just **30 days!** Power Fitness One's **"Military Workout"** will *burn off* your excess fat, increase your strength and stamina and give you a body to be proud of.

There's no need for expensive gym memberships or elaborate exercise equipment. All you need is the *desire* to improve the way you look, the way you feel and you can do it all in the privacy of your own home. Our program does the rest.

Our proven military style techniques are easy, fun and best of all... they work! The program is easily adaptable to each individual and everyone will enjoy the immediate results. Don't wait another day to experience the confidence and good health that you deserve! Order today! Send $12.95 and $2 p & h to:

FITNESS 1+
2920 Ave R, Suite 357
Brooklyn, NY 11229

Learn By Video Tape
Learn Faster with Better Retention

Windows 3.1

Get the most from your Windows Apps
Learn Windows 3.1 Guaranteed*

WindowsWise™
Complete Windows 3.1
Video Learning System

Used by
• Corps •
• Colleges •
• Government •
Nationwide

INTRO OFFER

*30 day money-back guarantee

$29.95 EACH TAPE

Both Tapes for Only $49.95
(Reg price is $49.95 Each Tape)

Order #: 20-1. Vol. 1-Beginners–83 min. incl. Installation, Prog. Mgr, Write, Cardfile, Installing Windows Apps & much more.

Order #: 20-2. Vol. 2-Intermed. to Advanced–93 min. incl. File Manager, Paintbrush, Control Panel, PIF, OLE & much more.

SPECIAL BOOK OFFER This dynamic book on DTP, details proven methods for getting new customers. Any one of many foolproof ideas can make you thousands of dollars. Also reviews & recommends the best DTP hardware & software and gives you shortcut tips on how-to-incorporate your business. Your DTP business can't afford to be without this!

$19.95

Call our 24-Hour Credit Card Hotline
VISA MC AMEX **1-800-243-1996**
or send check to: Computer Wise Video
P.O. Box 145-C1, Haworth, NJ 07641
Please add $4. S&H—NJ Res. add 6% tax.

For ad information or order placement
Please contact: **Yvonne Marie**, National. Direct Marketing Mgr. at: Phone 212-496-6100 Ext. 1542, 1543, Fax 212-580-3693 or write to **Yvonne Marie** c/o OMNI Magazine 1965 Broadway, New York, New York 10023-5965

CLASSIFIEDS

BATTERIES

COMPUTER BATTERIES & MORE

Sanyo, Tadiren, Panasonic, Eveready, Gates, Lithium, Lead Acid, NI-Cad, Alkaline & Chargers. We Stock batteries for laptop/notebook, Camcorders, cordless phones, drills, Norelco shavers, RC Cars & invisible Fence. Call & ask. Wholesale! MC/VI/PO

Battery Express
713 Gladstone St., Parkersburg, WV 26101
1-800-666-2206 Fax: 304-428-2297

Circle Reader Service Number 317

BUSINESS OPPORTUNITIES

HOW TO MOONLIGHT WITH YOUR COMPUTER
Free Information. Must reading for everyone wanting their own business.
AICTC, Box 2615, Pasadena, CA 91102
1-800-422-1722

WE'LL PAY YOU TO TYPE NAMES AND ADDRESSES FROM HOME. $500.00 PER 1000. Call 1-900-896-1666 ($1.49 min/18 yrs.+) or Write: PASSE-XC194, 161 S. Lincolnway, N. Aurora, IL 60542

$975.00 DAILY POSSIBLE WITH A PC? YES! All from home, safe, easy! LOW COST manual reveals exact methods. Free details.
CNB-COMPUTE, 153 Princeton Ave., Dover, NJ 07801

$25,000 A YEAR PART TIME servicing computers. Easy to learn video training package. Free information. 1-813-528-2747 24hr recorded message.

MAKE $95 PER HOUR
doing simple computer repairs and upgrades.
Complete training and marketing materials.
For free information. 908-232-1007

CABLE TV

CABLE TV DESCRAMBLERS
Converters & Accessories
STOP RENTING!!
SAVE MONEY! OWN YOUR EQUIPMENT
All Major Brand Names • Lowest Prices!!
FREE 30 Day Trial • FREE CATALOG
Add-On Cable Co. 1-800-334-8475

Circle Reader Service Number 320

CABLE TV DESCRAMBLERS
1-800-233-9388
FREE CATALOG
GUARANTEED BEST PRICES • IMMEDIATE SHIPPING
APPLE ELECTRONICS
3389 Sheridan St. • Suite 257
Hollywood, FL 33021

Circle Reader Service Number 319

FREE CATALOG
• CABLE T.V. BOXES - ALL TYPES •
• LOW PRICES • DEALER PRICES •
ACE PRODUCTS
1-800-234-0726

Circle Reader Service Number 321

CABLE TV

★★★★ PRESENTING ★★★★
CABLE TV DESCRAMBLERS
★★★★★ STARRING ★★★★★
JERROLD, HAMLIN, OAK
AND OTHER FAMOUS MANUFACTURERS
• FINEST WARRANTY PROGRAM AVAILABLE
• LOWEST RETAIL / WHOLESALE PRICES IN U.S.
• ORDERS SHIPPED FROM STOCK WITHIN 24 HRS.
• ALL MAJOR CREDIT CARDS ACCEPTED
FOR FREE CATALOG, ORDERS & INFORMATION **1-800-345-8927**

PACIFIC CABLE CO., INC.
7325½ Reseda Blvd., Dept. 1117
Reseda, CA 91335

Circle Reader Service Number 322

CABLE TV
• Jerrold® • Oak
• Zenith • Hamline
• Tocom • Pioneer
• Scientific Atlanta
EXCELLENT PRICES!
1-800-826-7623
INTERNATIONAL B&B BUY BRAND SAVE
3584 Kennebec, Eagan, MN 55122
30 DAY TRIAL • 1 YR. WARRANTY
VISA MC AMEX DISC COD

Circle Reader Service Number 318

CABLE TV CONVERTERS
Why Pay A High Monthly Fee?
Save $100's A Year
• All Jerrold, Oak, Hamlin, Zenith, Scientific Atlanta, and more.
• 30 Day Money Back Guarantee
• Shipment within 24 hours
• Visa/MC and C.O.D.
No Illinois Orders Accepted
Purchaser agrees to comply with all state and federal laws regarding private ownership of cable TV equipment. Consult local cable operator.
L&L ELECTRONIC ENGINEERING
1430 Miner Street, Suite 522
Des Plaines, IL 60016
Free Catalog 1-800-542-9425
Information 1-708-540-1106

Circle Reader Service Number 323

COMPUTER REPAIR

AUTHORIZED COMPUTER REPAIRS: C64/128, 1541/1571, SX64, 128D & Amiga. Selling DTK-comp computers. Quick service-30 day warranty
MOM & POP's Computer Shop. 114 N. 16th, Bethany, MO 64424 (816) 425-4400

Closing date for February classifieds is November 15.
Call/Fax your ad (516) 757-9562

COMPUTER KITS

PC-BUILD COMPUTER KITS, THE RECOGNIZED LEADER in build-it-yourself PC's. Rec'd by PC-Upgrade and Pop. Science. Used in schools and training programs nationwide. Free catalog 1-800-798-6363

GAMES/ENTERTAINMENT

WORD-PUZZLE CONTESTS
$5 brings schedule and samples.
Vanity Lock, Box 129, Genoa City, WI 53128
U.S. residents only–void where prohibited

MARKETING

EVTEK
Evolved Technologies represents proprietary computer software/hardware solutions to the scientific, business and industrial community of the North East. 609-859-8333

MISCELLANEOUS

SKELETON KEY
FITS MOST LOCKS
(boltlocks, doorlocks, & some padlocks)
Amaze Your Friends
With A Lock Picking Demonstration.
You get 3 sized metal tension keys, the slide pick, precise instructions **& more.** Note: this device is to be used for demonstration purposes only! **Satisfaction Guaranteed or Full Refund;** 2 weeks delivery.
To get this exciting device, Send Now ONLY $8.95 + $2 S&H to:
Safe Marketing * 90 W. Montgomery Av No.366E * Rockville Md 20850

VOICE CHANGER TELEPHONE

SIXTEEN DIGITAL VOICE CHANGING MODES are built into this standard desktop telephone. Change your voice from male to female, female to male, adult to child, child to adult & "cartoon" voices. Use as regular voice phone or switch to Voice Change Mode *(lighted mode indicator).* Tone/pulse, last number redial, hearing aid compatible, **FCC registered**, UL & CSA listed, warranty. Precise & realistic voice masking is ideal security for women & children home alone, as a home/business "screening" device, and discourage annoying callers. *Money back guarantee,* $89.00 (each add'l $80.00) + $5.00 shipping per address.
DutchGuard, Dept. CP1, P.O. Box 411687, Kansas City, MO 64141. Send Checks/money orders or MC/Visa & COD order TOLL FREE (800) 821-5157.

Circle Reader Service Number 324

COMPUTE Classified is a low-cost way to tell over 275,000 microcomputer owners about your product or service.

Additional Information. Please read carefully.

Rates: $40 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 bold face words, or $50 for the entire ad set in boldface (any number of lines.)

Terms: Prepayment is required. We accept checks, money orders, VISA, or MasterCard.

General Information: Advertisers using post office box number in their ads must supply permanent address and telephone number. Orders will not be acknowledged. Ad will appear in next available issue after receipt.

CLASSIFIED DISPLAY RATES
Classified display ads measure 2¼" wide and are priced according to height. 1" = $285; 1½" = $420; 2" = $550.

HOW TO ORDER
Call Maria Manaseri, Classified Manager, COMPUTE, 1 Woods Ct., Huntington, NY 11743, at 516-757-9562.

CLASSIFIEDS

POSITION WANTED

HOME TYPISTS,
PC users needed.
$35,000 potential. Details.
Call (1) 805 962-8000 Ext. B-30033

EASY WORK! EXCELLENT PAY!
Assemble Products at home.
Call Toll Free
1-800-467-5566 EXT. 11315

SHAREWARE

SHAREWARE SALE
Free catalog. Over 3000 programs.
High quality, low price + bonuses
DATA MATE, PO Box 2811, Dept. B
Lake Ronkonkoma, NY 11779

Circle Reader Service Number 325

FREE IBM SHAREWARE CATALOG!!
Latest programs--low as $1.99 per disk--ASP vendor.
Games--business--Windows--spread sheet--and more!
Call Nibbles & Bits Software at 202-563-2359

IBM & COMMODORE SHAREWARE 18 areas Education, Business, Adult. .99 per disk. Free catalog. Robofx graphic BBS 4 gigs on-line 614-871-5055. Personalized hard backed Books $9.95, (20) different titles. H.O.S. P.O. Box 282008, Cols, OH 43228 614-863-4484 Visa/MC accepted

SOFTWARE

BEST VALUE - IBM-APPLE SHAREWARE & PD
CHOOSE FROM OVER 1000 DISKS.
FREE CATALOG OR $2.00
FOR CATALOG/DEMO (SPECIFY COMPUTER)
MC/VIS ACCEPTED. NEXT DAY SHIPPING AVAILABLE
CHRISTELLA ENTERPRISE, P.O. BOX 82205
ROCHESTER, MI 48308-2205

Circle Reader Service Number 326

Computer Shareware/ASP Vendor
FREE ON-DISK-CATALOG*FREE Disk Offers
We also carry CD-ROM
IkeaMo Ent., 0255W 300N, STE 11, Howe, IN 46746
Voice 219-463-5246 Fax 219-463-8454

ADULT-ORIENTED SOFTWARE
For IBM VGA, Color Mac, and Amiga.
Check out our huge collection of X-citing Adults Only Software.
Free lists (You must be over 18).
CLEARLIGHT SOFTWARE, Dept. CO
P.O. Box 1411, Milwaukee, WI 53201
(414) 962-2616

Circle Reader Service Number 327

IBM - COMMODORE 64 & 128 - AMIGA
1000's of PD/Shareware programs on 100's of disks. Free listing or $1 for large descriptive catalog (specify computer). DISKS O'PLENTY INC., 8362 Pines Blvd., Suite 270B, Pembroke Pines, FL 33024

SOFTWARE

The *ONLY* Lottery Systems With PROVEN JACKPOT WINNERS are those in Gail Howard's SMART LUCK® SOFTWARE
Call Toll-Free 1-800-876-G-A-I-L.
(See Her Ad in Product Mart.)

Circle Reader Service Number 328

UNIQUE SOFTWARE!
Outstanding IBM software selected specially for Home and Office use.
• 1000's of programs • ASP Member •
• Lowest Prices Anywhere! •
• Money-Back Guarantee! •
• FREE DETAILED CATALOG •
THE PC ARCADE
14 Moreland Ave. Oakville CT 06779

Circle Reader Service Number 329

WITH EMISOFT'S **PASSWORD BYPASSER** YOU eliminate annoying passwords. Disk Volume 1 only $34.95, or purchase separately only $5.00. Min of two per order. Call today 813-841-8769. **FREE S/H**

BUY/SELL USED SOFTWARE! LOWEST PRICES! FREE LIST. Specify 64/128, Amiga or IBM. Centsible Software, PO Box 930, St. Joseph, MI 49085. Phone: 616-428-9096 BBS: 616-429-7211

FREE! IBM PD & SHAREWARE DISK CATALOG
Low prices since 1988! ASP Approved Vendor. Finto Software, Dept. M. Rt. 2, Box 44, Rosebud, TX 76570 or Voice/FAX (817)583-2151. VISA/MC accepted.

NOT JUST SOFTWARE, ICA SOFTWARE
100's OF IBM AND IBM COMPATIBLE SOFTWARE
FREE CATALOG, VOICE/FAX 800-331-3065
P.O. BOX 1011-354, TRUMBULL, CT 06611

*****FREE CATALOG**–48 PAGES 2800+ PROGRAMS***
IBM COMPATIBLE–100% VIRUS FREE–NO MINIMUM
NO GIMMICKS–ALL CATEGORIES+ ADULT
$.99 PER (5.25) DD PH. TOLL FREE **1-800-755-6795**
HG SHAREWARE, P.O. BOX 515, EAGLE CREEK, OH 97022

IBM SHAREWARE
Free catalog or $2 for sample & catalog (refundable). Specify computer. CALOKE IND (B), Box 18477, Raytown, MO 64133

Circle Reader Service Number 330

EDUCATION

TEACH YOUR KIDS AT HOME—
or find out how 50,000 homeschoolers do it—in **PRACTICAL HOMESCHOOLING!** Hands-on teaching tips for computer education, classical ed, Charlotte Mason method, accelerated learning, more! How-to articles, product reviews, prizes! $15/4 big, glossy issues, or $25/8 issues. Back issue, $5. Call Home Life at **1-800-346-6322** or fax (314) 343-7203 to order. Satisfaction Guaranteed!

Circle Reader Service Number 331

EDUCATION

EARN DEGREE AT HOME
- Earn BS/MS/MBA degree via home study
- Instructional VIDEOTAPES
- Business Administration
- Environmental Studies
- Computer Science

For free catalogue call: 1-800-767-2423
Member of World Association of Universities & Colleges
CHADWICK UNIVERSITY
"Learning not limited by classroom walls"

Circle Reader Service Number 332

DON'T SPEND ANOTHER DIME
on educational software, until you get **PRIDES' GUIDE TO EDUCATIONAL SOFTWARE!** The only book to categorize, rate and review 750+ of all the latest programs. **PC Magazine** (5/11/93) **says, "Buy it!"** You'll save the $27.50 (ppd.) price again and again! Call Home Life at **1-800-346-6322** or fax (314) 343-7203 to order. Satisfaction Guaranteed!

Circle Reader Service Number 333

B.S. & M.S.
In Computer Sciences
- In-depth degree programs with **all courses home study.**
- BS courses include MS/DOS, BASIC, PASCAL, C, Data File Processing, Data Structures & Operating systems.
- MS courses include Software Engineering, Artificial Intelligence and much more.

For free information call **1-800-767-2427**
2101-CC Magnolia Ave. S. • Suite 200 • Birmingham, AL 35205
AMERICAN INSTITUTE OF COMPUTER SCIENCES

Circle Reader Service Number 334

Be a computer repair expert!

Home study. You could earn great money troubleshooting, repairing, upgrading, and installing PCs. Send or call now for free career literature.
800-223-4542
Name_____ Age____
Address_____
City_____ State____ Zip____
The School of PC Repair
6065 Roswell Rd., Dept. JA680
Atlanta, Georgia 30328

Circle Reader Service Number 335

LEARN COMPUTERS!
Home study. Become a personal computer expert at home and in business. **Free career literature.**
800-223-4542
Name_____
Address_____
City_____ State____ Zip____
THE SCHOOL OF COMPUTER TRAINING
2245 Perimeter Park
Dept. KA680 Atlanta, Georgia 30341

Circle Reader Service Number 336

NEWS BITS

Jill Champion Booth

A shortage of parts, a distaff online service, E-mail to the chief, and more

Don't Hold Your Breath

President Clinton says he hopes to be able to answer electronic mail messages individually within a year—this in response to a new exhibit, Letter to the White House, at the Computer Museum of Boston. Visitors can access President Clinton and Vice President Gore electronically to tell them what they think about, well, everything. The exhibit also allows you to see how your message is routed through the Internet's web of machines. Computer animation and other special effects display a simulated satellite view of the message as it bounces from the museum to a gateway in Boston and then through cyberspace to Washington and the White House. Once your message is received, you get a printout with Clinton's and Gore's E-mail addresses.

Women Get Wired

Women's Information Resource & Exchange (WIRE), the first international, interactive computer network dedicated to women, plans to open its gateways early this year. The network will provide an easily accessed, centralized source of women-oriented information and conversation. Women and men can log on to WIRE and discuss topics of interest with each other, network to solve problems, access information instantly, keep in touch with family and friends via E-mail, and participate in news groups and mailing lists from other systems on the Internet. For more information, contact WIRE at (415) 615-8989 or send E-mail to info@wire.net.

Mobile Companions

Moving swiftly to capture the most promising market for hand-held computing devices—the business user market—VLSI Technology, Intel, Microsoft, and Compaq will work together to deliver the first of a new class of hand-held devices known as mobile companions. Designed by Compaq, the mobile companion is a true extension of your main desktop or notebook PC. You'll be able to carry it wherever you go and use it off and on throughout the workday for instant access to information, whether at a meeting down the hall or on the other side of the world. Scheduled to be on the market this year, mobile companions will be powered by VLSI's Polar chip set, which is based on Intel architecture, and will use the Microsoft at Work operating system for hand-held devices. While Compaq's mobile companion will be the first of its kind, other companies are expected to build similar devices based on the same technologies.

Nike Reaches an Apex

Nike may have lost some air from its pumps when Michael Jordan, the company's most famous endorser, stepped out of his Air Jordans and off the basketball court for good, but the sportswear company still keeps its sales force moving and the shoes flying with IBM ThinkPad portable computers equipped with Apex Data modems.

What made Nike choose Apex over other fax/data modems? High speed, for one thing, says Ron Edwards, Nike's director of sales operations, but also because the Apex modems are covered under the IBM service guarantee. "We have reps in obscure parts of the country, and we know that any problems with Apex products will be fixed by simply calling IBM's service number." Another plus: The fax/data modems are compatible with the ThinkPad's "hibernate" feature, which allows you to change a battery on the fly. "The fact that Apex modems don't interfere with this is important," says Edwards.

It Could Be a Long Wait

That's the word from one OEM based in Newark, New York, that is also a major supplier of component parts to the PC industry (including Compaq, Dell, IBM, and Tandy). Roger Main, president of IEC Electronics, says consumers who are waiting for prices to drop before they buy the newest technologically advanced PCs might want to think again. He believes that prices of computers will hold steady for a while, not drop, because of a massive shortage of integral computer parts. In other words, newer models using the most advanced technology won't be available to consumers as quickly as usual. What is the reason for the delay? In the past, parts manufacturers rushed to keep up with demand but ended up overstocked with unsalable, out-of-date parts due to fast-paced technology advances. Overseas suppliers refuse to make the same mistake again, he says, and that has resulted in the shortage.

Not For Profit

Second Nature Software is providing an extensive collection of high-quality art for Windows users, beginning with 30 screen-saver/wallpaper collections of professional art and photographic images. All profits or ten percent of sales, whichever is greater, will be donated to nonprofit organizations.

For more information, contact the company at 812 Southwest Washington Street, Suite 1050, Portland, Oregon 97205; (503) 291-9500. ❐

Give a COMPUTE Holiday Gift Subscription!

First gift only $14.97
Save 57% off the newsstand price
Save 63% Each additional gift is only $12.97

❑ Payment enclosed ❑ Bill me

Charge ❑ Visa ❑ MasterCard

ACCOUNT # EXPIRE DATE

SIGNATURE

Please allow 6-8 weeks for delivery of first issue. Canadian orders send $26.72 for the first gift, $24.58 for each additional gift (includes GST). Other foreign orders send $24.97 for the first gift, $22.97 for each additional gift. Payment acceptable in U.S. funds only. Regular subscription price for 12 issues is $19.94.

YRLP5

Send first one year gift to:

NAME

ADDRESS

CITY STATE ZIP

Send second one year gift to:

NAME

ADDRESS

CITY STATE ZIP

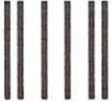
From:

NAME

ADDRESS

CITY STATE ZIP

❑ ***Please send me a subscription also.***



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 112 HARLAN, IA

POSTAGE WILL BE PAID BY ADDRESSEE

COMPUTE

P.O. BOX 5052
HARLAN, IA 51593-2552

USE THIS CARD TO REQUEST FREE INFORMATION ABOUT PRODUCTS ADVERTISED IN THIS ISSUE.

Clearly print or type your full name, address, and phone number. Circle numbers that correspond to the key numbers appearing on advertisements and in the Advertisers Index. Mail the postage-paid card today. Inquiries will be forwarded promptly to advertisers. Although every effort is made to ensure that only advertisers wishing to provide product information have reader service numbers, COMPUTE cannot be responsible if advertisers do not provide literature to readers.

CARDS VALID ONLY UNTIL EXPIRATION DATE.

This card is for product information only. Address editorial and customer service inquiries to COMPUTE, 324 W. Wendover Ave., Greensboro, NC 27408.

JOIN COMPUTE'S READER PANEL TODAY. Simply check "YES" to Question L (at right) and you'll be eligible to become one of a select group of readers who will participate in leading-edge market research.

COMPUTE'S FREE *PRODUCT INFORMATION SERVICE*

Name _____

Address _____

City _____ State/Province _____ ZIP _____

Country _____ Phone _____

A. What type computer(s) do you own? □ 486 PC (1) □ 386 PC (2) □ 386SX PC (3) □ 286 PC (4)
□ Other IBM/PC Compatible (5) □ Laptop/Notebook (6)

B. At home, do you use your computer mostly for □ Personal Finance (7) □ Work/Home Business (8)
□ Entertainment (9) □ All of the Above (10)

C. Would you classify yourself as a(n) □ Entrepreneur (11) □ Telecommuter (12) □ Moonlighter (13)
□ Corporate Employee who brings work home (14)

D. Which online service(s) do you use? □ CompuServe (15) □ GEnie (16) □ America Online (17) □ Prodigy (18)

E. What other computer magazines do you subscribe to? □ PC/Computing (19) □ MPC World (20)
□ Computer Gaming World (21) □ Home Office Computing (22) □ PC Magazine (23) □ PC World (24)

F. Which Graphical User Interface do you use? □ Windows (25) □ GeoWorks (26) □ Other (27) □ None (28)

G. Total time you spend reading COMPUTE? □ < 30 min (29) □ 30+ min (30) □ 60+ min (31) □ 90+ min (32)

H. Do you regularly purchase hardware/software as a result of ads in COMPUTE? □ Yes (33)

I. Do you own a □ CD-Rom Drive (34) □ Sound Card (35) □ Fax/Modem Board (36)

J. What is your total household income? □ <$30,000 (37) □ $30,000+ (38) □ $50,000+ (39) □ $75,000+ (40)

K. What is your age? □ 18–24 (41) □ 25–34 (42) □ 35–49 (43) □ 50+ (44)

L. Would you like to join COMPUTE's Reader Panel? □ Yes (45)

CIRCLE 101 for a one-year subscription to COMPUTE. You will be billed $14.97.

101	102	103	104	105	105	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	135	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	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400
401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450
451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470
471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490
491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510
511	512	513	514	515	516	517	518	519	520
521	522	523	524	525	526	527	528	529	530
531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550

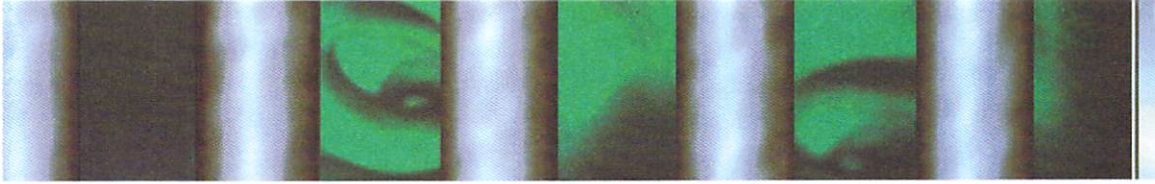
NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 853 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

COMPUTE Magazine
Reader Service Management Department
P.O. Box 5145
Pittsfield, MA 01203-9654

USE THIS CARD FOR FREE PRODUCT INFORMATION



Use Your *KEY TO ADVENTURE* to Unlock Great Prizes from Sierra!

Take this *Key to Adventure* card to your favorite participating retail outlet and see if your keys match the keys on the Sierra poster. If your key pattern matches any pattern found on the poster, you'll win a fabulous prize from Sierra! We're giving away a ton of stuff!

One State-of-the-Art Multimedia Personal Computer!
Two *MediaVision* Multimedia Computer Upgrade Kits!
25 *Gravis* UltraSound Sound Boards!
50 *Sierra* Adventure Games!
2,000 *Sierra* Hint Books!

000006708

DID YOU WIN??

If so, fill out the information below and mail this card to:

Sierra On-Line, Key Contest, P.O. Box 485, Oakhurst, CA 93614

Name_____

Address_____

City_____ State_____ Zip Code_____

Phone Number:( )_____

I have won:

____ A multimedia PC

____ A multimedia upgrade kit

____ A sound card

____ A Sierra Game. I would like:

____ *Gabriel Knight* ____ *Leisure Suit Larry 6* ____ *Open Season* ____ *Shadows of Darkness*

____ A free hint book. I would like:

____ *Gabriel Knight* ____ *Leisure Suit Larry 6* ____ *Open Season* ____ *Shadows of Darkness*

Prizes subject to verification.

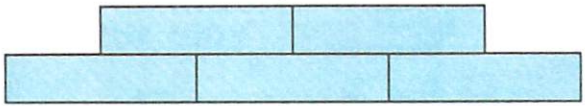
Get 5 Books for only $4.95

when you join

The Computer Book Club®

YES! Rush me the following titles, billing me just $4.95 (plus shipping/handling & sales tax). Enroll me as a member of **The Computer Book Club** according to the terms outlined in this ad. If not satisfied, I may return the books within 10 days without obligation and my membership will be cancelled. I agree to purchase just 3 more selections at regular Club prices during the next 2 years and may resign anytime thereafter.

Code #'s of my books for $4.95



If you select a book that counts as 2 choices, write the book number in one box and XX in the next.

Name _____

Address/Apt.# _____

City _____ State_____

Zip _____ Phone _____

Offer valid for new members only, subject to acceptance by CBC. Canada must remit in U.S. funds drawn on U.S. banks. Applicants outside the U.S. and Canada will receive special ordering instructions. A shipping/handling charge & sales tax will be added to all orders.

©1994 CBC

CMPT194

The Computer Book Club®

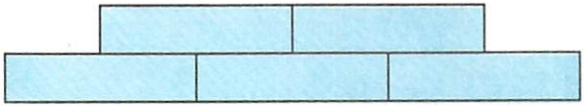
Get 5 Books for only $4.95

when you join

The Computer Book Club®

YES! Rush me the following titles, billing me just $4.95 (plus shipping/handling & sales tax). Enroll me as a member of **The Computer Book Club** according to the terms outlined in this ad. If not satisfied, I may return the books within 10 days without obligation and my membership will be cancelled. I agree to purchase just 3 more selections at regular Club prices during the next 2 years and may resign anytime thereafter.

Code #'s of my books for $4.95



If you select a book that counts as 2 choices, write the book number in one box and XX in the next.

Name _____

Address/Apt.# _____

City _____ State_____

Zip _____ Phone _____

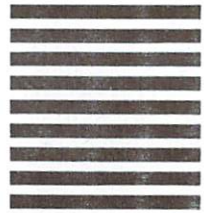
Offer valid for new members only, subject to acceptance by CBC. Canada must remit in U.S. funds drawn on U.S. banks. Applicants outside the U.S. and Canada will receive special ordering instructions. A shipping/handling charge & sales tax will be added to all orders.

©1994 CBC

CMPT194

The Computer Book Club®

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 9 BLUE RIDGE SUMMIT, PA

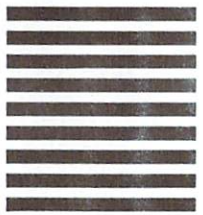
POSTAGE WILL BE PAID BY ADDRESSEE

The Computer Book Club®

A Division of McGraw-Hill, Inc.

Blue Ridge Summit, PA 17214-9973

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 9 BLUE RIDGE SUMMIT, PA

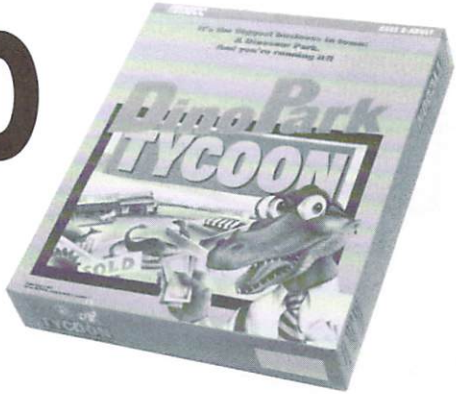
POSTAGE WILL BE PAID BY ADDRESSEE

The Computer Book Club®

A Division of McGraw-Hill, Inc.

Blue Ridge Summit, PA 17214-9973

Save $3.00



Now get $3.00 off new ***DinoPark Tycoon*** from MECC. Kids will use math, economics, business, and science skills to build a theme park and make big bucks with ***DinoPark Tycoon***. Just take the attached check to your local retail store today and cash in on this offer!

mecc

IMPORTANT: This check is only good towards the product or products specified, and not valid towards previous purchase. Any other use is unauthorized. Consumer must pay any sales tax involved.

Checks cannot be used with any other rebate or coupon offer. Limit one (1) check per purchase.

4445305

FIRST STATE BANK LAKE LILLIAN
LAKE LILLIAN, MN 56253

75-1131
919

NOT GOOD FOR MORE THAN **$3.00**
VOID AFTER MARCH 31, 1994

PAY TO: **ANY AUTHORIZED MECC DEALER**

THREE DOLLARS AND NO CENTS **$3.00**

Towards the purchase of ***DinoPark Tycoon***

CONSUMER PLEASE COMPLETE THE FOLLOWING

NAME (please print) _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

_____
PLACE OF PURCHASE

AUTHORIZED SIGNATURE

⑆091911315⑆ 163870011" 4445305

By endorsing this check the undersigned represents that it is an authorized MECC retailer.

_____

_____

The Future's in Computer Service, So Start Preparing Now!

Only NRI could give you training this complete, experience this practical. You actually build a powerful 486sx/25 MHz computer system—including a 200 meg hard disk drive and Super VGA color monitor—while gaining the hands-on skills you need to service today's most sophisticated computers with confidence.

Over 220,000 jobs! That's what the Department of Labor forecasts for computer service technicians by the year 2005, a 38% increase over today's level. For you, that means tremendous opportunity if you have the training and the skills to get into this high-paying, top-growth field.

Now you can cash in on this opportunity — full-time, part-time, or in a computer service business of your own — once you've mastered electronics and computers the NRI way.

Get inside a 486sx/25 MHz computer system...and see for yourself the potential of today's computer technology!

Now NRI includes a high-speed 486sx/25 MHz mini-tower computer system as the centerpiece of your course to give you real-world training with state-of-the-art technology. You build this 1 meg RAM, 32-bit CPU computer from the keyboard on up. Plus, we've recently added two important features to this already powerful system: a 200 meg IDE hard disk drive, for extra storage capacity, and a Super VGA color monitor, to add impact and drama to all your computer's applications. But that's not all!

You also learn to diagnose and repair IBM-compatible computers with the remarkable Ultra-X hardware and software included in your NRI training. Plus, NRI's computer training now covers more troubleshooting procedures than ever, including upgrading, printer repair, recovering lost data, fixing RAM problems, and more.

Now, at an affordable tuition, your incomparable NRI hands-on training program includes even more than ever before:

- Discovery Lab you use to design and modify circuits, diagnose and repair faults
- Hand-held digital multimeter with "talk-you-through" instructions on audio cassette
- Digital logic probe that lets you visually examine computer circuits
- A powerful 486sx/25 MHz computer, featuring a 32-bit Intel 80486sx CPU, "intelligent" keyboard, and 1.44 meg, 3.5 inch high-density floppy drive
- 1 meg RAM, 64K ROM
- Super VGA color monitor
- 200 meg IDE hard disk drive
- DOS, QBasic, and Microsoft Works software
- Ultra-X diagnostic package including R.A.C.E.R. plug-in card and QuickTech menu-driven software for fast, professional troubleshooting
- Reference materials, programming guidelines, and schematics

See other side for highlights of NRI hands-on computer training

Understanding you get only through experience

You need no previous background in electronics to succeed with NRI. You start with the basics, rapidly building on the fundamentals of electronics to master advance microcomputer concepts.

Best of all, you learn by doing — performing hands-on experiments with your NRI Discovery Lab and digital multimeter, then actually building and testing the powerful 486sx/25 MHz computer system you train with and keep.

Learn at home in your spare time

With NRI, you learn at your own convenience in your own home. No classroom pressures, no night school, no need to quit your present job until you're ready to make your move. And all throughout your training you've got the full support of your personal NRI instructor and the entire NRI technical staff.

Get all the facts from NRI's free full-color catalog. Send today!

SEND CARD TODAY FOR FREE NRI CATALOG

NRI Schools
McGraw-Hill Continuing Education Center
4401 Connecticut Avenue, NW
Washington, DC 20008

GI Bill

For career courses approved under GI Bill, ☐ check for details.

☑ **Check one FREE catalog only**

- ☐ **Microcomputer Servicing**
- ☐ TV/Video/Audio Servicing
- ☐ Industrial Electronics & Robotics
- ☐ Basic Electronics
- ☐ Computer-Aided Drafting
- ☐ Computer Programming
- ☐ Desktop Publishing & Design
- ☐ PC Applications Specialist
- ☐ Programming in C++ with Windows

Name _____ (please print) Age _____

Address _____

City _____ State _____ Zip _____

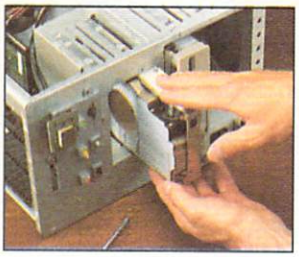
Accredited Member, National Home Study Council

0198-0194

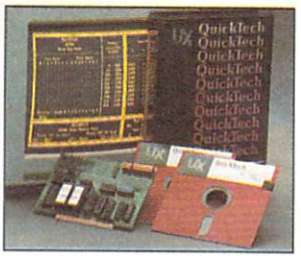
Get In-Demand Computer Servicing Skills With NRI "Hands-On" Training

You set up and perform electronics experiments and demonstrations using your NRI Discovery Lab. You even interface the lab with your 486sx computer to "see" keyboard-generated data.

After you build this digital logic probe, you explore the operation of your computer's 101-key, detached "intelligent" keyboard and its dedicated microprocessor.



You install the 1.44 meg, 3-1/2" floppy disk drive, learning disk drive operation and adjustment. Later, you dramatically improve your computer's data storage capacity by installing a powerful 200 meg IDE hard drive.



You learn to quickly diagnose and service virtually any computer problem with the extraordinary R.A.C.E.R. plug-in diagnostic card and QuickTech diagnostic software included in your course.

NRI training is so complete, hands-on mastery is "built-in"

No other training — in school, on the job, anywhere — prepares you so thoroughly for today's money-making opportunities in computer service. And only NRI builds meaningful training around the kind of powerful computer system you'll be called on to service and repair in the real world.

As you assemble your 486sx/25 MHz mini-tower computer system — complete with monitor, floppy drive, hard drive, operating and applications software — you'll perform hands-on demonstrations and experiments that bring theory to life, giving you a total mastery of computer operation. But NRI doesn't stop there.

Now! Includes diagnostic hardware and software for quick, accurate troubleshooting

Your NRI training now includes a remarkable diagnostic package that allows you to quickly locate and correct defects in IBM-compatible computers.

You'll use the Ultra-X R.A.C.E.R. diagnostic card to identify individual defective RAM chips, locate interfacing problems, and pinpoint defective support chips. Experts call the R.A.C.E.R. card the easiest to use, most powerful tool for PC troubleshooting available today!

With your QuickTech diagnostic software package, also from Ultra-X, you'll go on to test the system RAM and such peripheral adapters as parallel printer ports, serial communications ports, video adapters, and floppy and hard disk drives.

This ingenious diagnostic package is just one more way NRI's real-world, hands-on training gives you both the knowledge and the professional tools to succeed as today's in-demand computer service technician.

Free catalog tells more... send today!

Send the postage-paid card today for NRI's big, free catalog that gives all the facts about NRI computer training. See for yourself how NRI hands-on training can help you cash in on the growing opportunities for skilled computer service technicians.

If the card is missing, write to NRI at the address below.

NRI Schools
McGraw-Hill Continuing Education Center
4401 Connecticut Avenue, NW
Washington, DC 20008

IBM is a registered trademark of International Business Machines Corp. R.A.C.E.R. and QuickTech are registered trademarks of Ultra-X, Inc. Intel Inside is a trademark of the Intel Corp.

CARD 101

SEND CARD TODAY FOR FREE NRI CATALOG

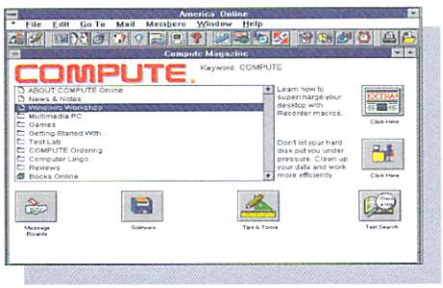
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 10008 WASHINGTON, D.C.

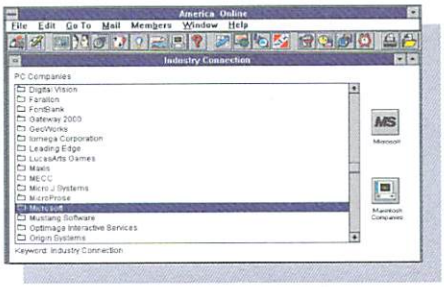
POSTAGE WILL BE PAID BY ADDRESSEE

NRI Schools
McGraw-Hill Continuing Education Center
4401 Connecticut Avenue, NW
Washington, DC 20078-3543

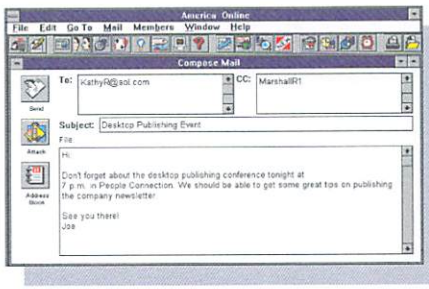
The More Windows You Open, The Cooler It Gets.℠



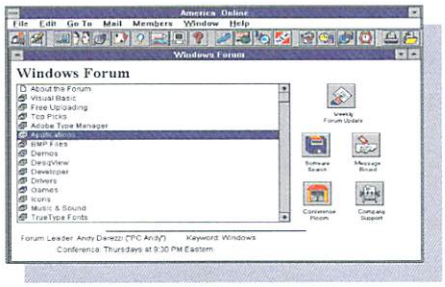
COMPUTE Magazine Online



Expert Computing Advice

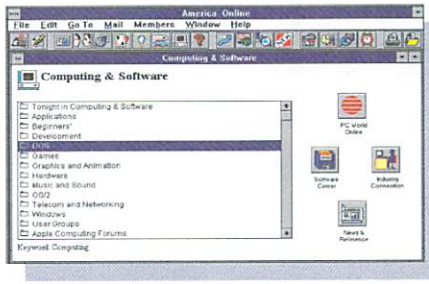


Internet E-Mail Gateway

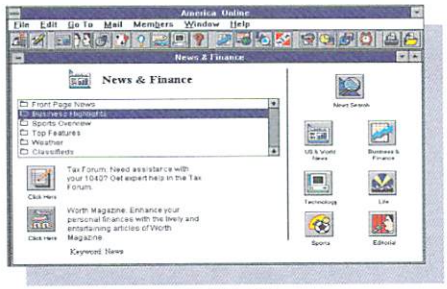


Computing Advice & Support

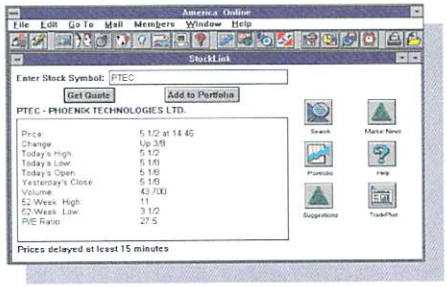
Fast, Easy Downloading



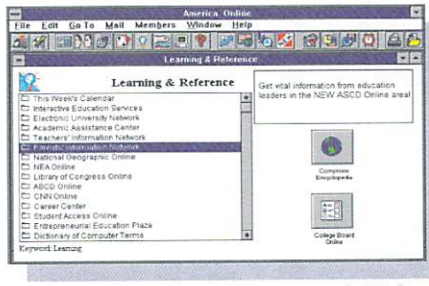
More Than 60,000 Software Files



Searchable News



Stock Quotes & Portfolio Management



Encyclopedia & Homework Help

INTRODUCING COMPUTE MAGAZINE ONLINE!

Free Trial Offer. See Other Side For Details.

Yes! I'd Like To Try America Online — Free.

Send me the free software and trial membership. I understand there's no risk — if I'm not completely satisfied, I may cancel without further obligation.

AMERICA Online®

NAME

ADDRESS

CITY

STATE ZIP

( ) HOME PHONE

Disk Type and Size:
❑ PC 5.25 ❑ PC 3.5
❑ High Density ❑ Double Density

Do you use Windows 3.1*?
❑ Yes ❑ No

❑ Macintosh®

*You must have ❑ a 386 PC; ❑ 4MB of RAM; ❑ a VGA monitor; ❑ a mouse; and a working copy of Windows 3.1 to use America Online for Windows.

America Online is a registered service mark of America Online, Inc. Other names are service marks or trademarks of their respective holders. Use of America Online requires a major credit card or checking account. Limit one free trial per household.

8455/W

AVAILABLE FOR MAC, DOS AND MICROSOFT WINDOWS™

Try America Online—Free.

There's only one way to get the big picture about America Online. Try it. That's why we make it so easy. We give you the software and let you try it, absolutely free. You'll be impressed by everything you can do with your computer, a modem, and America Online, and how easily you can do it.

Just Point And Click.

Get advice from hardware and software developers, experts and reviewers — even ask them questions directly. Download any of the thousands of programs from our software libraries and use them off-line. Monitor your investments and the latest news. Manage your business better with the help of our Microsoft® Small Business Center. Save time and money in hundreds of different ways, from browsing for gifts in our online shopping area or booking your own airline tickets to using our great computing support forums.

Featuring COMPUTE Magazine Online.

And now America Online offers COMPUTE Magazine Online. From the opening screen, you'll find COMPUTE Online is more than just an electronic version of the magazine — it's interactive. You can share your views with COMPUTE editors and writers in real-time discussion forums. Find in-depth reviews of the latest software in the "Test Lab." Download software programs from COMPUTE's own Top 10 list. Or, use America Online to reach out to the world beyond — our e-mail gateway to the Internet links you to members of other e-mail and online systems for no additional cost. When you connect to America Online, you connect to the electronic community of the future — today.

As Easy To Try As It Is To Use.

If you've never tried America Online, now's the time. If you have in the past, try us again — America Online is available for Mac, DOS and now, the new Windows version for Microsoft Windows 3.1 users — with multi-tasking, flashbar navigation, and much more. But don't take our word for it. Give us a try and find out what you can accomplish when you open a few of our windows.

AMERICA Online®

Complete and mail the card or call 1-800-827-6364, Ext. 8455, Today!

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 9096 VIENNA, VA

POSTAGE WILL BE PAID BY ADDRESSEE

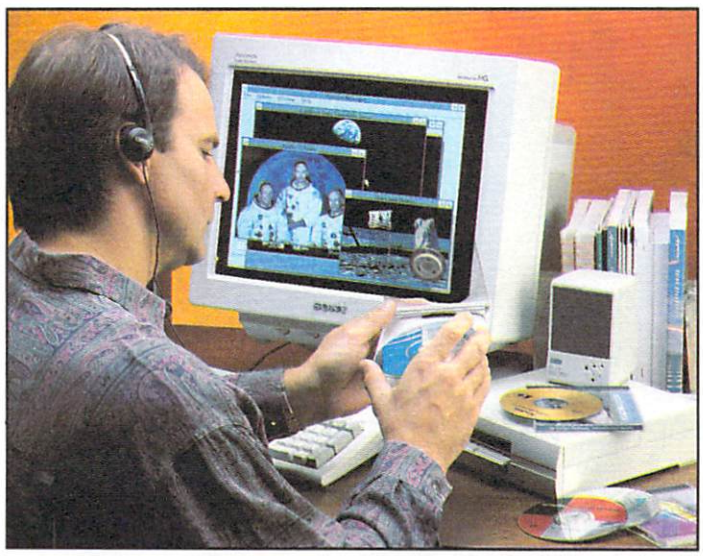
AMERICA Online®

8619 Westwood Center Drive
Vienna, VA 22182-9806

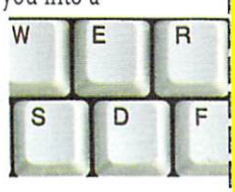
Another NRI Training Breakthrough!

Be a Part of Today's Fastest-Growing Computer Field— Be a Multimedia Specialist

Multimedia. It's cutting edge technology that's being talked about everywhere — in magazines, on TV, even at your office. Perhaps you've used a multimedia application yourself at an airport kiosk or in a retail store. Now you can be a part of this fascinating new technology that's given the PC voice, sound, animation, and even full-motion video!



It's a fact: Multimedia is rapidly changing the way we learn, communicate, get information — even the way we do business. Only NRI gives you exclusive, hands-on training with the latest peripherals that turn your present computer into a "Multimedia PC" and turn you into a Multimedia Specialist. Only NRI prepares you so well to take advantage of the myriad career opportunities opening up in this dynamic new field. Whether you're looking to create programs that educate, inform, entertain, or train, opportunities to move up, make more money, even start your own business are virtually unlimited.



Your NRI training starts with a review of computer hardware. Using your own 386 or higher model computer with 3.5 inch drive and Windows 3.1, you first get hands-on experience evaluating your equipment for a better understanding of how it works. You go on to examine how today's most sought-after peripherals — CD-ROM drive and sound card — work together with multimedia software to give sensory qualities to your PC. What's more, you install, train with, and keep a Mitsumi CD-ROM drive, 16-bit SoundBlaster® Pro II-compatible sound interface card, Autodesk Animator®, and Asymetrix Toolbook® software — all included in your course.

Your Multimedia Training Includes Everything You Need to Create Multimedia Applications With Your Own Computer

See other side for more details →

SEND TODAY FOR YOUR FREE CATALOG

NRI Schools
McGraw-Hill Continuing Education Center
4401 Connecticut Avenue, NW, Washington, DC 20008

YES! I'm interested in learning more about NRI's training in (☑ check one only):

☐ **Multimedia Specialist** ☐ **Database Management**
I understand the above courses require that I have access to or own a 386sx or higher model computer, 3.5-inch drive, and Windows 3.1.

☐ I'm Interested in NRI training in another field that includes computer equipment. Please send me information about (☑ check one only):

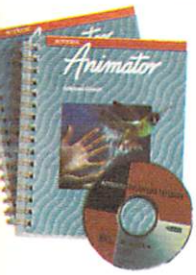
- ☐ Computer Programming
- ☐ Microcomputer Servicing
- ☐ Digital Technology
- ☐ Programming in C++ With Windows
- ☐ PC Applications Specialist
- ☐ Bookkeeping and Accounting
- ☐ Fiction/Nonfiction Writing
- ☐ Desktop Publishing
- ☐ Computer-Aided Drafting

Name (please print) Age

Address

City/State/Zip Accredited Member, National Home Study Council 1915-0194

Get in on the ground floor of today's most dynamic computer technology: Multimedia



Your very first lesson has you and your computer up and running with a review of the many opportuniutes in the exciting field of Multimedia. But before you begin to design your own program, you first learn about the various types of multimedia applications and CD-ROM titles that have been developed commercially. With a full understanding of the elements that make up a successful multimedia application, you're ready to try your hand at your own multimedia program. Using your own computer and the exclusive worksheets and sample reports included in your hands-on training projects, you prepare an Analysis Report and Preliminary Design Document that lay the foundation for your own multimedia program.

With your NRI instructor available to guide you every step of the way you move on to examine the components that combine to make your multimedia program visually engaging: text, graphics, video, and animation. You install Autodesk Animator software on your computer and then use its paintbrush feature to create objects that move across the screen, rotate, or change perspective, keeping in mind the creative approaches you will use later in your multimedia program.

Now you're ready to go on to explore the elements of multimedia that make it multisensory: audio and video. Your lessons cover the break-through technology of CD-ROM and new digital data storage devices on the horizon. Then you get first-hand experience with the very equipment that enables your computer to speak, play music, and generate a host of sound effects — Mitsumi CD-ROM drive, 16-bit SoundBlaster Pro-II-compatible sound card, speakers, headphone, microphone, and software — all yours to train with and keep.

Your multimedia program takes shape as you learn about interactivity and principles of interface design. You put yourself in the user's shoes: What will make your program exciting so that people will want to use it? What will your interface buttons look like? How will they work? Refer back to your Preliminary Design Document, and you'll find many of the answers you need to help you create detailed flowcharts and storyboards of your program design on paper. Then, using the Flowchart software included in your course, you recreate your program design on your own computer.

You're now ready to breathe life into your program using professional quality Asymetrix ToolBook® software included in your next project. With its object-oriented technology, this easy-to-use authoring tool has you quickly entering text, graphics, animation, and CD audio – all provided on the exclusive NRI Multimedia Resources CD – to create a content-rich, high-impact multimedia program, one you can use to sell your services to future clients.

What's more, NRI's unique training also includes lessons that show you how to market your services and manage professional projects. By the time you complete your course, you'll have the technical know-how, business savvy, and total confidence to take advantage of today's opportunities in Multimedia.

Send Today For Your Free Catalog

Send for your free full-color catalog that describes every aspect of NRI's breakthrough training in multimedia. If the card is missing, write to NRI Schools, McGraw-Hill Continuing Education Center, 4401 Connecticut Ave., NW, Washington, DC 20008.

CARD 152

SEND TODAY FOR FREE NRI CATALOG

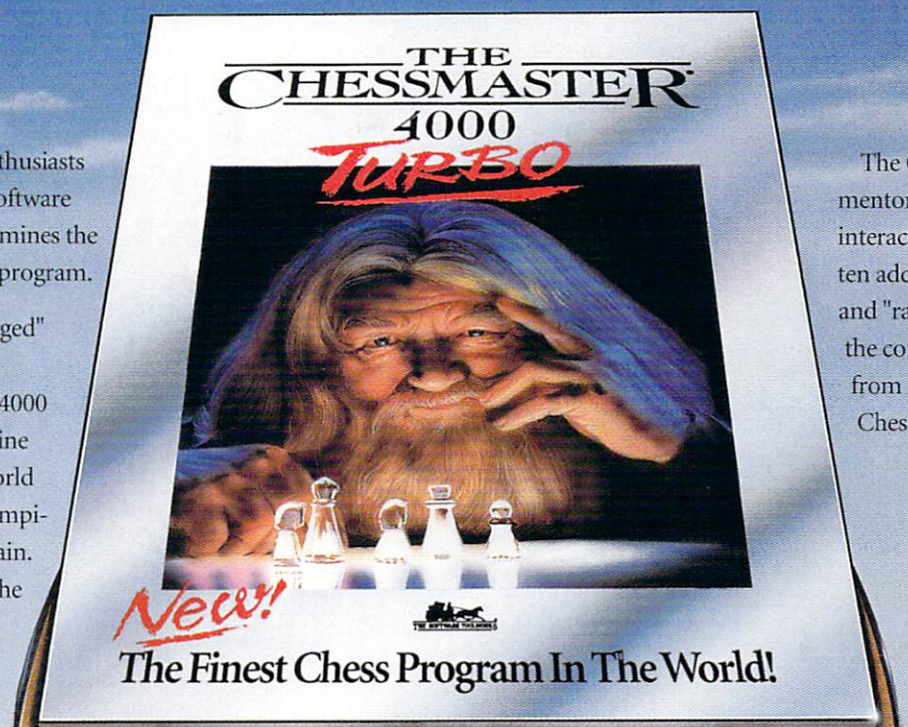
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 10008 WASHINGTON, D.C.

POSTAGE WILL BE PAID BY ADDRESSEE

NRI Schools
McGraw-Hill Continuing Education Center
4401 Connecticut Avenue, NW
Washington, DC 20078-3543

How Could We Ever Improve The World's Best Selling Chess Program?



Computer chess enthusiasts will tell you that the software "engine" is what determines the true power of a chess program.

The new "turbocharged" 32-bit engine in The Chessmaster Version 4000 is based upon the engine that won the 1992 World Computer Chess Championship in Madrid, Spain. Taking advantage of the 32-bit processing capabilities of 386 and 486 processors, chess for the PC has reached a new level of excellence.

The Chessmaster 4000 Turbo has a new custom Windows™ interface for spectacular graphics. Choose between 3-D or 2-D. Rotate the board. Choose from a dozen chess sets or design your own set or board.

The Chessmaster acts as a mentor and provides a new interactive animated tutorial, ten additional teaching displays and "rate my plays;" you predict the correct moves selected from famous games and The Chessmaster will score you.

New views including 3-D and rotating boards

The Software Toolworks has long been recognized as the leader in computer chess programs. Now, we're setting a brand new standard. Truly, The Chessmaster 4000 Turbo is the finest chess program in the world.

We Gave It A Stronger Engine!

THE CHESSMASTER 4000 TURBO

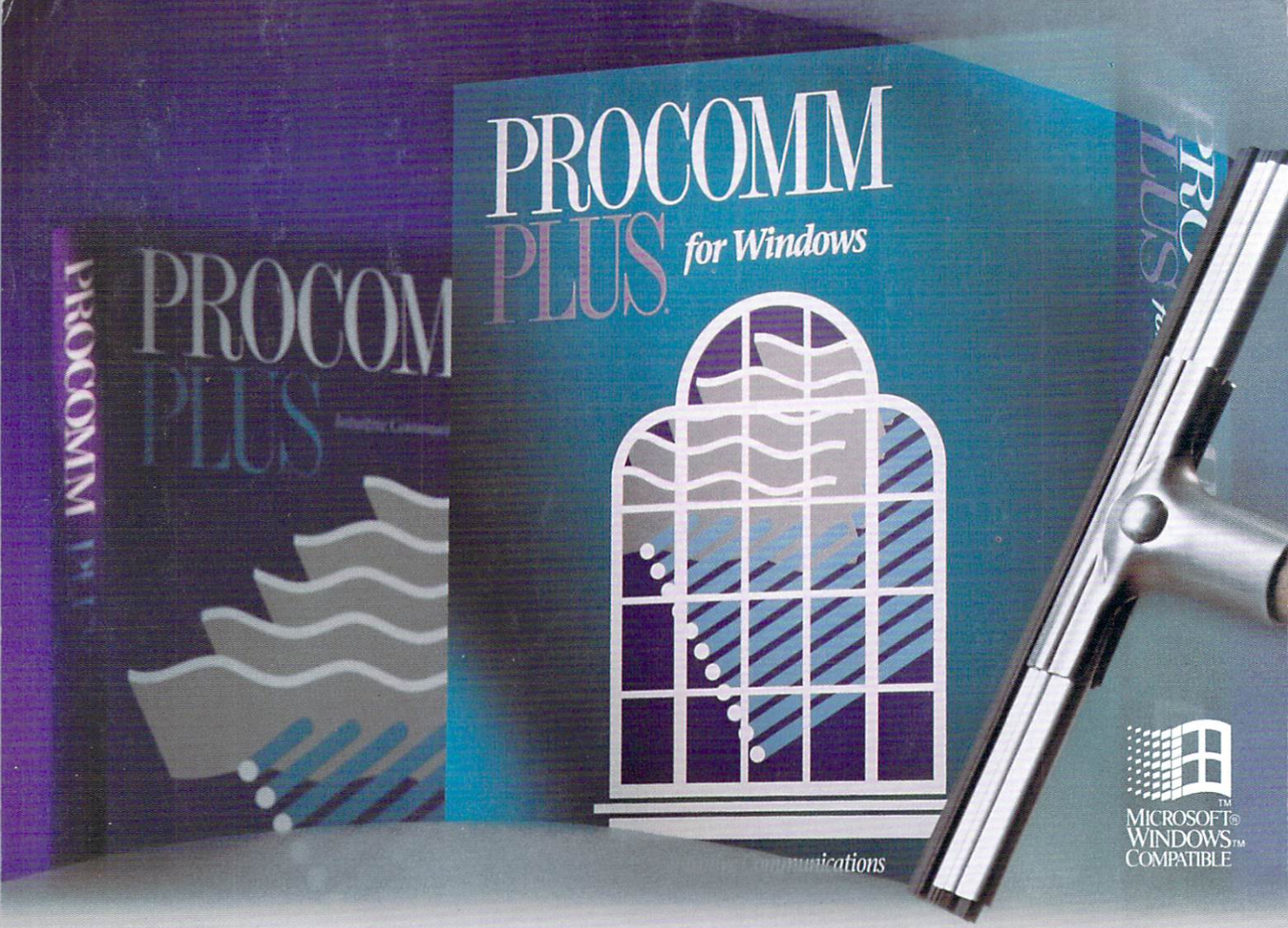
The Finest Chess Program in The World!

Available for Windows

For the store nearest you or to buy, call

1-800-234-3088

Copyright ©1986-1993 The Software Toolworks, Inc. The Chessmaster, The Software Toolworks and logo are registered trademarks of The Software Toolworks, Inc. IBM is a registered trademark of International Business Machines Corporation. Microsoft and MS-DOS are registered trademarks and Windows is a trademark of Microsoft Corporation. All other trademarks and registered trademarks are the property of their respective holders.

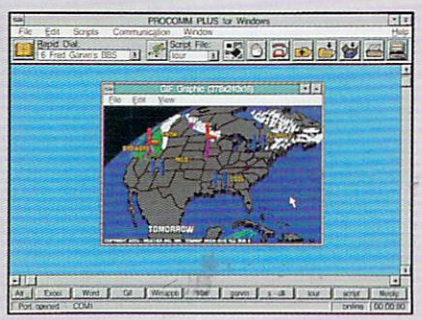


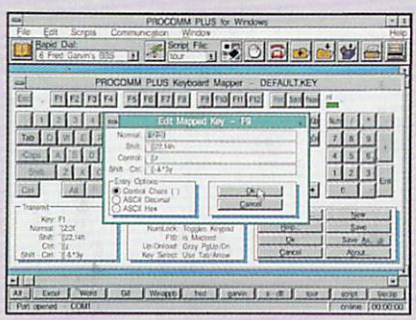
The Streak Continues!

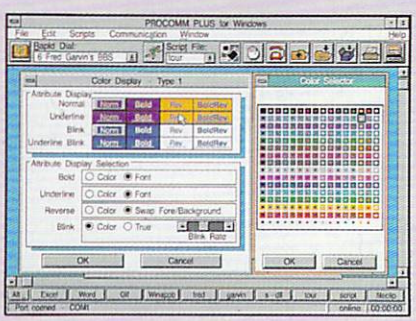
Introducing the Windows version of the best-selling communications software in the world.

PROCOMM PLUS has opened the eyes of the world to a superior communications package. Now, people with their sights set on communicating with Windows have a choice just as clear. PROCOMM PLUS *for Windows*.

The power and ease of use of PROCOMM PLUS combined with the elegance of Windows. Look for it now at your software dealer. And discover for yourself why PROCOMM PLUS *for Windows* leaves the competition in the fog.







Copyright © 1992
DATASTORM TECHNOLOGIES, INC.
All Rights Reserved

DATASTORM®
DATASTORM TECHNOLOGIES, INC.

P.O. Box 1471 • Columbia, MO 65205 • 314.443.3282

Circle Reader Service Number 247