

Electronic Entertainment

AMERICA'S #1 MULTIMEDIA ENTERTAINMENT MAGAZINE

Discover the Future of

Multimedia!

31 Ways to Make Your PC
Look as Good as TV

The 11th Hour &
Under A Killing Moon

Introducing...
The Stars of CD-ROM

Plus:

Microsoft Baseball, All-Star
Modem Roundup, George Lucas
Speaks, and 14 Hot Game Reviews

Margot Kidder
stars in *Under
A Killing Moon*

An IGB Communications Publication

June 1994

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You had to walk through three feet of snow just to get to school. They get there on Rollerblade skates. You had an AM radio. They have boom boxes. And now there's this thing called edu-tainment. High technology that makes learning involving, fun and exciting. What a concept.

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LEARNED THE HARD WAY
DOESN'T MEAN YOUR
KID HAS TO.

be up and running right away. And they're backed by a three-year warranty* along with a 24-hour, seven-day-a-week support hotline to answer any of your computing questions. And with literally thousands and thousands of CD-ROM titles currently available (and a bunch more coming every day), you can do just about anything. From recreating a space shuttle launch to baking your favorite cake with Better Homes and Gardens to leafing through an entire set of encyclopedias stored on one six-inch compact disc complete with audio and video. As a matter of fact, once you have your Presario Multimedia PC at home, there'll probably only be one thing standing between you and a whole new world. Your kid.

COMPAQ

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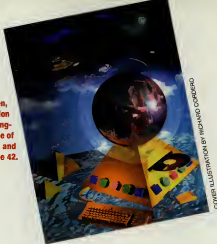
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Editor's Page

Gina Smith

Multimedia Takes on TV

A few months ago, a friend called to ask if I'd bring home some software from work. He wanted to see what multimedia looked like. So I grabbed the closest thing near my desk that filled the bill—it happened to be *A Hard Day's Night* from Voyager. It includes the entire footage of the 1964 Beatles movie, plus a lot of Beatles commentary and trivia. Pretty impressive, right?

But when I popped the disc into my system and started the movie, all my friend could say was "Make it bigger!" He was referring to the puny onscreen window where the software displays the film. And he hasn't asked about multimedia since.

Despite the hype surrounding multimedia, my friend's attitude is pretty typical. People who've been playing animated computer games and working with word processors and spreadsheets may get excited about watching video in little windows, but the vast majority could care less. In their eyes, no matter how much extra text and interactivity you get, herky-jerky little computer videos are a step backward from the full-screen, full-motion, full-color video you get on your \$300 TV. And they're right: Until multimedia titles look as good as TV, a mass market for multimedia titles will remain a pipe dream.

But as Lou Wallace points out in "Pump Up Your Video" on page 42, video-compression standards and new hardware, games, and multimedia titles are finally starting to make TV-quality video a reality on the PC. It may seem like an expensive luxury now, but within a year or two, it will be everywhere.

If consumers are going to demand TV-quality technology, the talent had better be top-notch, too. So in our companion piece, "Now Starring On a Computer Near You..." contributing editor John Enders takes a look at the actors who are showing up in this new medium. Meet the stars and the wannabes who are pioneering full-motion video titles on page 52.

But as any moviegoer knows, these days special effects are just as important as acting. For some eye-popping examples of what Silicon Graphics workstations are bringing to the party, check out Game On columnist Rusel DeMaria's "The Machine Behind the Scenes" on page 58.

Parlez-vous Français? Our Multimaniac does now. In "How My PC Taught Me le Francais," on page 74, Paul Bonner finds out how well the newest wave of multimedia language tutors works. The only problem is, all the snooty Gallic waiters we know keep insisting they can't understand him.

Also in this issue, look for a preview of Trilobyte's upcoming *The 11th Hour*, sequel to *The 7th Guest*; a review of Packard Bell's new multimedia Pentium PC, a new level of performance for your favorite games and titles; an interview with the legendary George Lucas; a look at the Sports Illustrated 1994 Multimedia Sports Almanac (sorry, no swimsuits); the latest info on a CD-ROM comedy contest; and 14 hot hands-on game reviews.

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In *System Shock*, biological engineering and automation merge in a raging storm completely out of human control. As the game begins, you awaken from a healing coma on the space station *Citadel*, only to find yourself in the twisted aftermath of a terrible mutiny. Somehow, you've escaped the fate of your companions, who have been mutated beyond recognition to serve SHODAN, the ruthless computer that now controls all station operations. With your neural interface, you can "jack" into cyberspace, SHODAN's realm, to steal clues to the mystery and stop a plot to enslave Earth!



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Mail

What's in a Game?

I'm just writing to tell you that I enjoyed your March issue of *E2*. Besides the new LucasArts Tie Fighter game demo, I found the article "High-Tech Nostalgia" in the Sharp Edge section (page 18) very interesting.

I think it's true that there is no creativity in today's games. It seems the programmers have sacrificed good game play for flashy graphics and sound. Today's games look good, but they are no longer fun to play.

I am one of those "electronic archaeologists" the article mentions. While I own one of the new systems, a Sega CD, my Atari 2600 is still hooked up next to it. While the Atari is far from state of the art, the games are still fun to play, and I find that I play the Atari more often than the Sega. To me, what makes a game is the quality of the game play, not the graphics and sound.

James Catalano
Chicago, Illinois

After receiving my first issue of *E2*, I was very impressed. However, one important thing is missing from your game reviews: a requirements/recommendations section. Not only are gamers often in the dark about what hardware a game requires, but we don't know what we'll need for optimum play. Don't spare our feelings, either. If a game is crap without a 486DX or a good sound card, say so. A lot of time, money, and aggravation can be saved if we can avoid games that won't deliver maximum enjoyment and playability.

Ken Oaster
Philadelphia, Pennsylvania

We hear you, Ken, and we agree. In next month's issue, we'll start highlighting special game requirements in our reviews. —Ed.

Virtual Golf Pros

I enjoyed watching the pros at the LA Open. The inspiration I got from watching these great players improved my own game dramatically, and it got me to thinking about Nolan Bushnell's column in the February issue ("The Virtual Room," page 120). If I could go into a virtual room on a regular

basis, and play or practice with say, Tom Watson or Corey Pavin, I believe I could really improve my game.

Is this a possibility? Any information regarding this idea would be greatly appreciated—I'd even pay for it!

Page Jacobson
Anshem, California

Amiga Amigo

I recently picked up your magazine and was very, very upset. In your article "Multimedia for the Masses" (April, page 106), how could you omit, or fail to address, one of the best computers in the world—the Amiga? I have found the Amiga to be one of the best game machines on the market. And, with its line of Amiga 500, 600, 1200, and 4000 computers, it's a major player in the area of technological entertainment. I'd appreciate it if you would preview Amiga games!

J. Jackson
New York, New York

Look for reviews of Amiga CD³² titles in upcoming issues. —Ed.

Share Where?

Because I'm still a kid at heart, I'm constantly looking for new forms of entertainment. Your magazine gives me unbiased opinions on games, systems, and even control devices. I get valuable advice on how to spend my money so I end up with games that give me the thrill I so enjoy.

I would like to suggest that you do a monthly article on the top 20 shareware, public domain, and freeware games. I own many such games, as it's an inexpensive way to have it all. There are hundreds of titles to choose from and I think an article on them would enhance your magazine and give some credit to the people who create them. I've been amazed by some of these games: electrifying graphics for a small price.

Keep up the good work!
Jos La Belle
San Diego, California

You'll be happy to hear that we're currently working on a feature story about shareware games. Look for it in an upcoming issue. —Ed.

Nose for News

Keith Ferrell makes some interesting points about the dangers of self-censorship that could lie at the heart of interactive news ("And Now The News," April, page 44). But rather than design filters to strain away unwanted stories, we should start with a full news menu and be given the tools that would allow us to drill down into areas we find most interesting. They take us for a nation of idiots—too obsessed with the glitzy and ephemeral to be anything but briefly interested in the economic, social, and political issues that will exist long after Tonya Harding becomes just another "oh-yeah" in a trivia contest.

James Doyle
Lakewood, New Jersey

Idol Chatter

When I read your March issue, at first I enjoyed your article about teen idols and how they are contributing to interactive gaming ("Teen Stars Turn to Games," page 16). But I soon found myself appalled by the seemingly mean-spirited jokes suggesting games other childhood stars might star in. You have no right to make judgments about these hard-working young actors, even if it was only in fun. Besides, the jokes weren't even funny.

Sam Markin
Clarksburg, West Virginia

Whoops!

The following artists were not given proper credit in the May issue:

Beth Middleworth, page 47, "Books Without Paper"

Lance Jackson, pages 58-59, "The Gross, the Rude, and the Ugly".

In "The Games Predict the 1994 Season" sidebar in the April "Batter Up!" story (page 52), the National League champion for Lance Haffner Baseball was misstated. The winner is St. Louis, 4-1.

Got something you want to get off your chest? Do it! Write, fax, or e-mail us at Letters to the Editor, c/o Electronic Entertainment, 951 Mariner's Island Blvd., Suite 700, San Mateo, CA 94404; fax: 415-349-7781; MCI ID: 619-71340; and CompuServe: 73361, 265.



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Forget cute little computer animation. Tomcat Alley is the real deal, hotshot, with balls-to-the-wall live action. It's full-screen, full-on aerial action like you've never experienced. Tomcat Alley features seven different combat missions against air and ground targets. And you don't just see the action from under the canopy, you also get a bird's-eye view outside the plane. In fact, Sega TruVideo™ technology takes you as close to the edge as you can get without packing your own chute and wearing one of those helmets with the goofy nicknames on it. Once you've been to Tomcat Alley and back, no little simulator game will do. So bail out on the rest and lock on to the real jet fighter action of Tomcat Alley. Only on Sega CD.

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SHARP

EDGE



Pulling Out of the Data Driveway

Heard on The Internet: Kate Bush

Internet surfers all over the world got to hear one of the songs from Kate Bush's *The Red Shoes* album weeks before it was released. How? As it turned out, Kate had performed the number on a British television show, and some enterprising fan in the U.K. recorded it, digitized it, and then posted it on the Internet. Eager fans from all over the world were able to download the tune only minutes after it was posted.

—James Daly



PHOTOGRAPH BY ANDREW CASHAW

Microchip magnate Intel wants to be your on-ramp to the data superhighway. The company's been demonstrating a \$300 card that'll let customers connect their PCs directly to cable TV.

"There is a (data) highway, but it'll be built around your PC, not your TV," says Avram Miller, Intel's vice president of corporate development. And he says Intel's out to prove it: According to Miller, customers with the card in their PCs will be able to access online games, shopping, and interactive news services at

the rate of 10 megabits per second. That's 200 to 1,000 times faster than the fastest modems, and it translates into online services beyond today's standard point-click-and-wait.

Intel has already demonstrated the card with souped-up versions of services from Prodigy, America Online, and software peddler Softbank, and it reports that other companies are waiting anxiously in the wings. But don't get too excited yet. Trials are underway now, but commercial deployment won't happen until early 1995. And unless you live in a major metropolitan

area, it could be five years or more before such interactive services are available in your town.

Intel isn't the only one shooting for data highway dominance. Other players, including Scientific Atlanta, Silicon Graphics, and 3DO, are involved in similar online (and non-Intel-based) trials of their own, but they're using a "cable box" instead of a PC as an on-ramp.

—Christopher Lindquist

COMEDY CONTEST

So a Kangaroo Goes Into a Bar...

Think you're pretty funny, don't you? Whether you're a water-cooler cutup or the sultan of smirk at school, here's your chance to show your stuff. The folks at Highlife Publications are assembling the first of their *Comedy Disc Series*, and they're looking for jokes and humor from knuckleheads just like you. To join in, simply videotape yourself telling your favorite jokes and send in the tape by June 30, 1994. Keep it clean, keep it tight, and leave about three seconds of blank tape between quips. Selected entries will appear on a CD-ROM issued this fall. If Highlife receives enough jokes about a particular topic (lawyers, kids, screwing in a lightbulb), it will devote an entire disc to the subject. But, don't expect to get paid for your performance. Talk about cheap thrills. Send entries to Highlife Publications, 416 N. Oakhurst Dr., Suite 305, Beverly Hills, CA 90210. (Highlife Publications; 310-273-2185; CD for DOS/Mac, \$44.95 each)

—James Daly



Approaching The 11th Hour

In Henry Stauf's mansion, even death is interactive. If you didn't get enough of the undead toy-maker's fiendish brainteasers in last year's best-selling CD-ROM game *The 7th Guest*, watch out:

The 11th Hour approaches.

Due this summer, *The 11th Hour* is the sequel everyone's been waiting for. Game creator Trilobyte must know how much is riding on this: *The 11th Hour* needs more, better, and faster live video footage and an even wider selection of difficult puzzles if it's going to come close to *The 7th Guest*'s runaway success.

So far, the prognosis is good. The sequel comes with lots more live-action sequences, about 50 percent more game play, and a coffin full of special effects. While there were 22 tantalizing riddles hidden in Henry Stauf's strange mansion in *The 7th Guest*, *The 11th Hour* goes for the jugular with an even more maddening variety of games. This time, kiddies, many of the puzzles use artificial intelligence to become truly interactive. Their response depends upon your actions each time you play.

The live—(and dead)—action sequences take you beyond the mansion walls and include scenes in the town of Harley-on-Hudson, the quaint burg near Stauf's house. (You view scenes outside the mansion using your character's laptop computer.) TV producer Carl Denning (that's the character you play) has come to Harley looking for Robin Morales, the beautiful employee with whom he was having an affair.

Naturally, she has disappeared while researching the Stauf enigma.

The 11th Hour promises to be better—and bigger—than *The 7th Guest*. The game fills three CDs and comes in two different versions. The PG-rated cut will run on PCs and Macs, while an R-rated version is headed straight for the 3DO platform. (For more on the actor starring in *The 11th Hour*, see "Now Starring On a Computer Near You" on page 52.) Look for full-length reviews of both versions in upcoming issues! (Virgin Interactive Entertainment; 800-874-4607; CD for DOS/Mac, 3DO, \$99.99)

—Michael S. Lasky

Your Cheatin' Heart

Not ready to face *The 11th Hour* because you were stumped by *The 7th Guest*? Try typing "Zaphod Beeblebrox" while the opening Ouija board is onscreen. If you do it right, you'll hear "Groovy, Groovy, Groovy." Then move the cursor to any corner of the board and click. The screen displays thumbnail-sized pictures of every room in the house. Just click to transport yourself anywhere you want to go.

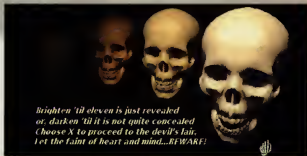
You can also check out *The 7th Guest: The Official Guide* by E2 contributor Rusei DeMaria (Prima, \$19.95). The books include hints, a complete game script, and solutions to all the baffling puzzles in the haunted house on the hill.



You'll find blood in every room of the Stauf mansion—and some of it might be yours.



Police closed down the Stauf mansion. Do you dare go in?



The opening rhyme is no literary crime, but if you insist on prying there's a bad chance of your dying.

NEWS FLASH

John Lennon could never have imagined his life would be the subject of a multimedia CD-ROM. But Compton's NewMedia and Warner Bros. Consumer Products are collaborating on a historical chronicle of the late Beatle and his work, including never-before-released home movies, music, art, and text. A special collector's edition will also be available when the disc ships this fall. (Compton's NewMedia; 800-862-2206; CD for Windows/Mac, \$89.95)

The two companies are also working on **Babylon 5—The Universal Encyclopedia**, a CD-ROM exploration of the syndicated science-fiction TV show. This disc promises to sort out the show's various alien species, describe the space station's technology, and offer a peek at



John Lennon comes to CD-ROM.

the special effects used in the show. Available this fall, **Babylon 5** will come with a special book of additional material. (Compton's NewMedia; 800-862-2206; CD for Windows/Mac, not yet priced)

Nova Logic's new simulation, **Armored Fist**—distributed by Electronic Arts—plunges you into next-generation tank warfare. In a barren, Desert Storm-like wasteland, you lead American or Russian tanks on a search-and-destroy mission. Custom graphics technology creates elaborate 3-D battle terrain and tanks. Look for it late summer. (Electronic Arts; 800-245-4525; CD for DOS, \$69.95)

(continued on page 14)

Global Gladiators in the Cyber Arena

Ever wish you could prove your supreme manliness in the confines of an ancient Roman gladiator's pit? You'll get your chance early this summer with Dynamix's upcoming **Battledrome**. The first game in Dynamix's Metaltech series, this is a *mano a mano* confrontation with a modern twist. In this fight, you trade the old loin cloth and dagger for a combat robot armed to the teeth.



In **Battledrome**, your robot goes head to head with another opponent via modem link.

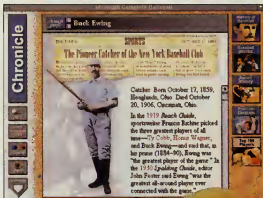
Down the road, Dynamix also plans a multiplayer version for the **ImagInet Network**. And the second Metaltech game, **Earth Siege**, is already under development. (Dynamix/Sierra On-Line; 800-757-7707; DOS, \$49.95)

—Bill Meyer

Up-to-the-Minute Baseball News

Licensed by Major League Baseball, **Microsoft Complete Baseball** is a fan's dream come true. You can watch historic video clips and images of famous players, listen to 100 audio clips of announcers' original play-by-play commentary, or check out comprehensive stats of every player who ever made it to the majors. There's even a thousand-question trivia quiz. You can play with the computer or your friends, and the game keeps score as batting averages.

Best of all, if you have at least a 2400-bps modem you can download the latest stats from the new **Microsoft Baseball Daily Online** service. Be warned though, each download costs around \$1.25.



Look for the Windows version by midseason; Macintosh users will have to wait till next year. (Microsoft; 800-426-9400; CD for Windows, \$79.95)

—Donna Meyerson



Build your own robot, or buy a better one after beating an opponent.



The Hollywood Interview: George Lucas

Film director and multimedia entrepreneur George Lucas created the Star Wars trilogy and founded game maker LucasArts Entertainment and groundbreaking special-effects house Industrial

Light & Magic. E2 associate features editor James Daly caught up with him at a recent multimedia trade show.

E2: In *Mortal Kombat*, players can rip out their enemy's heart.

Another developer is working on a *Chainsaw Massacre* game that lets you carve up opponents in full-motion video. Has game violence gotten out of hand?

George Lucas: Game makers just don't understand the psychology of violence. Drama is about conflict and violence can be a part of drama. But violence without consequence is trouble.

When you commit a violent act it hurts people and there is pain, if not for yourself then

somewhere else down the line. Violence is often a necessary dramatic element, but it's not necessarily a positive thing.

E2: But most games are pretty violent, including yours—which is one reason the average game player tends to be a young male.

GL: Everything winds up geared toward the marketplace. Whoever buys the games gets the marketplace to focus on them. Today that's young males. One of our main areas is storytelling games, which is more female-oriented than the action games most people produce. It's not a big market, but we've managed to do pretty well. And we're going to continue that.

E2: Have you ever thought of devoting your creative energies to the education market?

GL: It's interesting. When we started off 15 years ago, our whole inspiration for the games group was interactive multimedia in the schools. But the technology base wasn't there to support it.

So in order to stay alive we focused on interactive consumer products. We're still kicking around ideas for the schools now that the technology has advanced. We recently brought out a multimedia product designed to teach life-science concepts to middle-school children, and we're going to continue to move into the education market.

E2: Do you have an on-ramp to the information highway?

GL: You're going to see a lot of networked games and I think we're really going to see this thing take hold over the next decade. It's a very exciting time to be in this industry. Games are looking more and more like movies.

E2: And what about *Star Wars*? When are you going to take us back to that galaxy far, far away?

GL: Yeah, I just can't keep putting that one off. There will be another *Star Wars* movie in the next five or six years. You can count on it.

D-Day Revisited

Fifty years after Allied soldiers splashed ashore on the beaches of Normandy, The Discovery Channel uses historical and modern video to lay out the saga of the bitterly contested invasion.

Normandy: The Great Crusade, now available, moves beyond the big picture to chronicle the blood, sweat, and tears of foot soldiers on both sides. Starting with the military events leading up to June 6, 1944, the disc continues with the stories of ordinary citizens caught up in the campaign that led from the bloody beaches to the liberation of Paris.

History buffs who can't get enough of a good invasion can check out the companion cable special that begins airing in late May on The Discovery Channel. (The Discovery Channel; 301-986-0444, ext. 5880; CD for Windows, \$49.95)

—James Daly



NEWS FLASH



Armored Fist promises plenty of tank warfare action.

Don't let the predictable awfulness of the annual Grammy Awards scare you away from **Media Vision's Grammy's Interactive**, currently available. While the show represents the worst of the music industry's self-congratulatory excess, the CD-ROM promises to cull performance highlights from the show's 35-year history into a watchable program. It will include at least 20 live clips featuring artists such as k.d. Lang, B.B. King, Sting, Eric Clapton, Marvin Gaye, Tina Turner, and Bonnie Raitt, as well as a trivia game and 30 award-winning songs. The mind reels... (Media Vision; 800-845-5870; CD for Windows, not yet priced)

Philips's CD-i is due for a hardware boost this year with the introduction of new players from **Yashica** and **GoldStar**. Yashica's Pro 1000S trades a high price for small size, comparable to that of a portable CD player (Yashica; 908-580-0080; CD-i, \$1,250). GoldStar's GDI-12 is a bit bigger, but it comes with built-in MPEG support. Goldstar has yet to announce a date or price for U.S. release (GoldStar; 201-816-2000; CD-i). Meanwhile, Philips's software division will introduce versions of its titles for non-CD-i platforms, including Windows. Expect to see upcoming titles such as **Chaos Control** and **Bum Cycle** released on multiple platforms.

(continued on page 16)

Multimedia Variety Show

Medio Multimedia, the company that brought you JFK Assassination: A Visual Investigation, is back with four new titles covering everything from world music to Martin Luther King, Jr.

World Beat takes on the burgeoning interest in so-called world music. Click on a spinning globe to learn about the music and culture in more than 40 locations. Watch 30 to 40 minutes of musical performances, check out interviews, and read a college text with background material. There's even a Music Lab where

and the people who made it all work. With 40 minutes of video, hundreds of photos, several animations, and two com-

example, movie fans can watch trailers for current movies.

Medio is also working on **Dr. Martin Luther King, Jr.:**



Click on a spinning globe to watch local musicians perform Zydeco, in one of many cultural music locales included on **World Beat**.

Dr. Martin Luther King, Jr. An Historical Perspective



If Medio can get the rights, you'll be able to watch and listen to speeches, interviews, and documentaries to learn about **Dr. Martin Luther King, Jr.**

you can mix your own versions of various compositions.

Jets! is about—well, you guessed it. If you're fascinated with high-performance aviation, this title's for you. From the experimental X-1 to today's supersonic screamers, you meet the planes, the pilots,

plete books, there's no shortage of information, but this title faces stiff competition from similar efforts from several other companies.

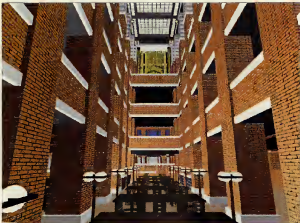
Medio Magazine is a general-interest CD-ROM magazine covering everything from soup to nuts. With video, ads, 500 photos, and an entire month of Associated Press news, there's something here for everyone. Instead of just reading about new releases, for

An Historical Perspective

which will use a more interactive version of the J.F.K. interface to cover the life and works of the great civil rights leader. If the company can work out the rights issues, you'll get the full text of a biographical book on King and civil rights, video clips of his stirring speeches, and even an interactive documentary linked to a wealth of background information. It won't have the J.F.K. title's innovative animations, though. (Medio Multimedia; 800-788-3866; CD for Windows, \$59.95)

—Donna Meyerson and
Fredric Paul

The Wright Stuff



Stroll down the corridors of Frank Lloyd Wright's most impressive designs—some now destroyed, some never built.



Check out 25 animated cartoons from underground artist R. Crumb.

Classics label—will cover the works of John Steinbeck (beginning with *Of Mice and Men*) as well as Raymond Chandler's Philip Marlowe detective sagas and Kurt Vonnegut's *Slaughterhouse-Five* and *Welcome to the Monkey House*. These discs include video clips from film versions of the books, photographs, and images of original manuscripts.

Preiss's Digital Bauhaus division will release *The Planets*, based on the Scientific American Library book *Exploring Planetary Worlds*. Digital Bauhaus will also adapt books from *American Heritage*, including titles on the Civil War, World War II, and U.S. History.

For kids, Preiss's Crayon Multimedia imprint will publish the *Bank Street Ready to Read* series of interactive stories and adventures. From the developers of *Bank Street Writer*, a popular word processor for kids, the series begins with *The World of Totty Pig*, a title specially designed to introduce young girls to computing.

Games will fall under the Brooklyn Multimedia moniker. For Halloween, enjoy macabre fun in *The Ultimate Haunted House*, a "dying book" based on illustrations from gruesomely humorous cartoonist Gahan Wilson. Or experience a graphic adventure based on Ray Bradbury's classic science-fiction novel, *The Martian Chronicles*.

Finally, *The Arzach Adventure* springs from the imagination of graphic artist Moebius. Many of Byron Preiss's titles will be released in conjunction with Microsoft's Home division. (Byron Preiss Multimedia; 212-989-6252; CD for Windows/Mac, not yet priced) —Fredric Paul

from David Larkin's *Frank Lloyd Wright Masterworks* and text from seven other books by or about the architect. (Byron Preiss Multimedia; 212-989-6252; CD for Windows/Mac, not yet priced)

Byron Preiss is also helping the master of another art form, *Jerry Seinfeld*, to expand his franchise from TV sitcoms to computer CD-ROMs. The company is working on a screen saver and daily planner program featuring the cast of the popular show. There's a similar product in the works based on the classic underground cartoons of *R. Crumb*, the originator of *Fritz the Cat* and *Mr. Natural*. A third version incorporates more than 350 cartoons drawn from the *Cartoon Bank*.

Preiss's interactive book titles—under the *21st Century*



Key an eye out for spooks in October when Brooklyn Multimedia releases *The Ultimate Haunted House*, based on the illustrations of Gahan Wilson.

NEWS FLASH

When most people hear **World Book**, they think of encyclopedias, but the company is also a leader in children's books with its **Early World of Learning** series. Now, **StarPress** is bringing the series—and its Alphabet Pals characters—to the computer this summer. StarPress will publish five Early



Lester learns a lesson in **Why Do We Have To**.

World titles, beginning with **Why Do We Have To**, which is designed to give kids a sense of rules and responsibility. Other titles will cover feelings, safety, and manners. (StarPress; 415-274-8363; CD for Windows/Mac, about \$4 each)

If you're intimidated by your computer or just want to know what's lurking inside that black box, **How Multimedia Computers Work from Software Toolworks** will be available in early summer. Based on Ron White's best-selling book *How Computers Work*, it features 40 minutes of 3-D animation that help explain what goes on inside your PC. (Software Toolworks; 800-234-3088; CD for Windows, \$49.95)

Japan's most popular kids' character, **Hello Kitty**, has been licensed to **Big Top Productions**. The title is due out early this summer on the Macintosh, with a Windows version to follow. Hello Kitty will engage kids in activities to improve reading, math, shape and color recognition, and music appreciation. (Big Top Productions; 800-900-7529; Windows/Mac, CD for Windows/Mac, \$69.99)



Keeper of the Stone

Stonekeep, Interplay's long-anticipated return to fantasy role playing, is just a stone's throw away from your retailer's shelf. In an immortal-mortal partnership with the Goddess Thera, you risk life, limb, and soul to save the universe.

Judging from a hands-on preview, this adventure will be as realistic as it is fantastic. A shrewd sense of adventure meets high-end production values and easy-to-use commands to make this game fast and fun.

While Thera holds your soul for safekeeping, you set out to retrieve the Orbs of Life and destroy the Shadow King and his legion of evil. Your quest sends you slashing your way through 13 domains, down the perilous corridors of a ruined fortress teeming with skeleton warriors, and through treacherous sewers.

The game unfolds full-screen—no need to mess with menus and icons. Fully rendered three-dimensional creatures and costumed actors add cinematic excitement. Coming this summer. (Interplay Productions; 800-969-4263; CD for DOS, \$79.95) —*Bill Meyer*



Winning depends on your ability to liberate this dragon.



Watch out for Stonekeep's marauding skeletons, ready to slice you up at moment's notice.

The Way Things Work gives you the lowdown on levers.



Learn how your body works in **The Ultimate Human Body**.

First Incredible, Amazing Dictionary, for ages four and up (\$49.95). Others include **The Ultimate Human Body** (\$79.95); **The Eyewitness Encyclopedia of Science** for ages ten and up (\$99.95); and Stephen Biesty's **Cross-Sections: Slowaway!** for ages seven and up (\$49.95). DK Multimedia promises to have Mac versions out by early 1995.

DK, of which 20 percent is owned by Microsoft, is no bunch of amateurs. Advance buzz on these titles is exceptional—not surprising, considering the company has been honing its multimedia craft for years. It produced Microsoft Musical Instruments and contributed images to Microsoft Dinosaur. (DK Multimedia; 212-213-4800; CD for Windows)

—Donna Meyerson

The Way Things Work

Do you know how a lightbulb works? How about a laser?

The Way Things Work by David Macaulay became a best-seller by explaining these inventions and some 200 more in a fun, entertaining, and nonthreatening way.

And now that same spirit of lighthearted learning comes to CD-ROM with the multimedia version of *The Way Things Work* (\$99.95). Using a woolly mammoth as the host, the disc includes narrated stories and colorful animations. Your mammoth even gets some multimedia action in 20 mammoth movies.

Developer DK Multimedia, a division of international book publisher Dorling Kindersley Publishing, plans on adapting many of its top-selling books into multimedia titles. The next title to get this treatment will be *My*



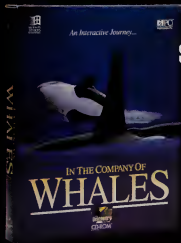
From the ocean depths to the farthest reaches of the heavens, nobody takes you there like The Discovery Channel.

Thoroughly enchanting and highly informative...A whale of a good time...★★★★

Multimedia World January, 1994

An outstanding, well-executed exploration...

Electronic Entertainment February, 1994

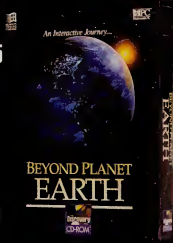


In The Company of Whales

A spellbinding multimedia journey with nature's most spectacular creatures!

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Beyond Planet Earth

An interactive exploration into the mysteries of our solar system!

THE POWER OF CD-ROM. THE BEAUTY OF THE DISCOVERY CHANNEL.

Take your family on an extraordinary adventure...*In The Company of Whales*. Or take them into space aboard an expedition to Mars...*Beyond Planet Earth*... Just take them to your nearest CD-ROM software dealer and ask

for The Discovery Channel CD-ROMs. Because if you're looking for an outstanding multimedia experience of graphics, film, information and entertainment, nobody takes you there like The Discovery Channel's line of CD-ROM titles.



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Runs on Windows/MPC. Available now at your local CD-ROM software dealer or call 301.986-0444 ext. 5880 for more information.



Links: Pebble Beach lands into the Leader Board—in tenth place.



Slipping into the Mac top five for the first time is Leisure Suit Larry 6: Shape Up or Slip Out!



Daemongate breaks in at eighth place for its debut in the Leader Board.

The Leader Board is a compilation of top-selling software in 1,300 retail stores for January, 1994. Some titles may appear in more than one category. Source: PC Data.

Leader Board

The best-selling PC, Mac, and CD-ROM entertainment software

PC GAMES

- 1 SimCity 2000** Build a city of the future with this improved version of the classic. It's been at number one for three months on the Mac, now it's topping the PC list as well. (Maxis; 800-338-2647; DOS/Windows, \$69.95)
- 2 Microsoft Flight Simulator 5.0** The hugely popular flight sim that has been flying at number one for four months has finally been bumped out of first place. (Microsoft; 800-426-8400; DOS, \$64.95)
- 3 Rebel Assault** Intense 3-D visuals and furious action highlight this Star Wars fantasy action adventure, previously at number two. (LucasArts Entertainment; 800-782-7927; CD for DOS, \$79.95)
- 4 B-Wing** It's been an up and down ride for this X-Wing mission disk with more
- scenes in the struggle against the Empire. It hit the charts at number two only to drop to number nine. Now it's at number four. (LucasArts Entertainment; 800-782-7927; DOS, \$29.95)
- 5 The 7th Guest** The ghost of Henry Stauf just won't go away in this realistic and haunting drama. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, \$69.99)
- 6 Leisure Suit Larry 6: Shape Up or Slip Out!** The sixth version lives up to the Laffer reputation. Larry's dream comes true—a vacation at a resort full of babes. (Sierra On-Line; 800-757-7707; DOS/Windows, \$69.95; CD for DOS/Windows, \$79.95)
- 7 Police Quest IV** Former L.A. Police Chief Daryl Gates puts a lot of realism into this gritty addition to the
- Police Quest series (Sierra On-Line; 800-757-7707; DOS, \$69.95)
- 8 X-Wing** Jump in and help the rebels in the space-flight simulator enhanced with extensive Star Wars video footage. (LucasArts Entertainment; 800-782-7927; DOS, \$69.95)
- 9 Wolfenstein 3-D/Spear of Destiny** Hitler has control over the most powerful weapon in the world. Only you can retrieve it in this action-packed 3-D adventure. (Forgem; 800-426-3123; DOS, \$35)
- 10 Links: Pebble Beach** Enjoy ocean vistas while gunning for first place on one of the tour's most coveted leader boards. The new addition enjoys its first appearance on the list. (Access Software; 800-800-4880; DOS, \$39.95)

MAC GAMES

- 1 SimCity 2000** Build a city of the future with this improved version of the classic. It checks in at number one on our list for the third month in a row. (Maxis; 800-338-2647; Mac, \$69.95)
- 2 Myst** Stunning visuals, haunting audio, and logical solutions will keep this compelling revolutionary game on your play list. It's been high on our list for three months. (Broderbund Software;
- 800-521-6263; CD for Mac, \$59.95)
- 3 Chessmaster 3000** Learn the rules of chess and get advice from the masters Karpov and Kasparov. (The Software Toolworks; 800-234-3088; Mac, \$49.95)
- 4 Leisure Suit Larry 6: Shape Up or Slip Out!** The sixth version lives up to the Laffer reputation. Larry's
- dream comes true—a vacation at a resort full of babes. (Sierra On-Line; 800-757-7707; Mac, \$79.95)
- 5 SimCity Classic** The classic version in which you set up residential, commercial, and industrial zones, provide police and fire protection, and tax your citizens. (Maxis; 800-338-2647; Mac, \$39.95)

CD-ROM TITLES

- 1 Rebel Assault** Intense 3-D visuals and furious action highlight this Star Wars fantasy action adventure which checks in at number one for the third month in a row. (LucasArts Entertainment; 800-782-7927; CD for DOS, \$79.95)
- 2 Microsoft Encarta** Learning takes on a whole new meaning with multimedia encyclopedias. Now you can experience history with video footage, audio clips, animations, and text. (Microsoft; 800-426-9400; CD for Windows/Mac, \$39.5)
- 3 The 7th Guest** Games continue to be alarmed by the haunting escapades of Henry Stauf while this quest to the top ten takes on residential status. (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, \$69.99)
- 4 Gabriel Knight: Sins of the Fathers** Tim Curry, Leah Remini, Mark Hamill provide some New Orleans' accents in this dark tale about the search for redemption. (Sierra On-Line; 800-757-7707; CD for DOS, \$69.95)
- 5 King's Quest VI** Travel through an enchanted world of mystery in this royal adventure and love story. (Sierra On-Line; 800-757-7707; CD for DOS/Windows, \$79.95)
- 6 Mad Dog McCree** Step on your six shooter and avoid the undertaker while bringing Mad Dog and his vicious band of outlaws to justice. (American Laser Games; 800-863-7707; CD for DOS/Windows/Mac, \$79.95)
- 7 Return to Zork** The Great Underground Empire gets a face lift
- in this text-free interactive video adventure. (Activision/Infocom; 800-477-8650; CD for DOS, \$79.95)
- 8 Daemongate** Locate seven companions in the demon-infested river city Torms, design an escape plan, and rid the city of its unwanted guests. (Baker and Taylor; 800-775-4100; CD for DOS, \$49.95)
- 9 AD&D, Forgotten Realms: Dungeon Hack** Spend hours destroying evil overlords in massive, sinister dungeons of your creation. (Strategic Simulations; 800-245-4525; CD for DOS, \$60)
- 10 Iron Helix** It's up to you to save the universe from viral genocide as you maneuver an out-of-control spacecraft. (Spectrum HoloByte; 800-695-4263; CD for Mac, \$89.95)

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cinematic graphics and CD-quality sound effects put you in the heat of battle, as close to reality as national security will allow!

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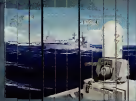
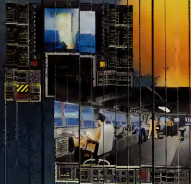
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- Electronic Games



Choose your vehicle wisely. Along with your speed and cunning, it may be the only thing that keeps you alive when you battle evil enemies like The Eviscerator and Rabies.



Spectacular fully rendered animation, amazing 3-D graphics and pulse pounding sound effects make MEGARACE a rowdy, super-charged, one-of-a-kind virtual driving experience.



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Welcome to a future where anything - absolutely anything - goes. MEGARACE is the auto combat game that combines mind-blowing driving with no rules, no holds barred combat and the most depraved road gangs ever assembled.

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Host Lance Boyle

You get real "television look" graphics with smooth action made possible by advanced compression techniques and real time data transfers from CD-ROM. Thrill to more than 25 minutes of digitized video that will forever change the way you look at video entertainment.

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MULTIMEDIA PENTIUM

Packard's Bells & Whistles

Think a Pentium-based gaming machine is out of your league? Think again.

With Packard Bell's new **Pentium Multimedia System**, less than \$3,000 buys you a truly fast Pentium-powered PC that covers the multimedia bases: sound card, CD-ROM drive, speakers, fax/modem, local-bus video card, and a monster hard drive. You will, however, have to add your own monitor.

Packard Bell's Pentium Multimedia System covers the software bases too, starting with its updated Navigator tutorial. This system guide appears when you power up, keeping novices safe from the sometimes confusing Windows interface. Navigator combines animation, text, images, and sound to get even the most computer-shy user up to speed.

You control Navigator with menus or a graphical environment modeled after a house. Starting in the hallway, you can enter four different rooms, including the Kid-space (which contains a space station and tree house), the Learning Center, the Workspace, and the Software

section. Each room offers access to programs, as well as

Navigator's tutorials, covering hardware, DOS, and Windows basics, and more advanced topics such

as troubleshooting and system upgrading. Once you're comfortable with your PC, you can disable Navigator and go directly to Windows at startup.

Packard Bell also starts your software library by bundling Microsoft Works, Money, and Entertainment Pack and a collection of more entertaining CD-ROM titles from The Software Toolworks, including Multimedia Encyclopedia, U.S. and World Atlases, Chessmaster 3000, and The San Diego Zoo Presents the Animals.

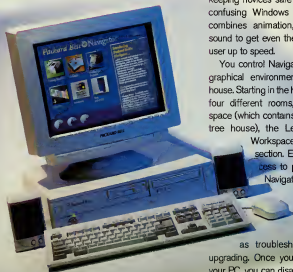


From the Navigator's space station, kids can get to their favorite programs.

But all that software is just the icing. The system itself is the cake. All the components are first-rate: You get a 60MHz Pentium processor, a PCI local-bus video card, a dual-speed CD-ROM drive, a 420MB hard drive, 8MB of RAM, a 16-bit sound card, and a 14,400-bit-per-second fax/modem. You also get a pair of tiny, tinny Labtec speakers that you'll want to upgrade the first chance you get. Packard Bell covers it all with a 1-year warranty and 24-hour telephone support. The system we reviewed came with an excellent Packard Bell 17-inch monitor.

Best of all, the whole thing is ready to roll. The software is preinstalled (you might have to insert a CD-ROM, but that's about it). Whatever you choose to play, this Pentium-powered MPC2-compliant system has plenty of power to run it. We encountered no problems when running a variety of challenging DOS and Windows software, including all of the bundled programs as well as other popular titles such as *The 7th Guest*, *Tuneland*, and *Compton's Interactive Encyclopedia*. This is one state-of-the-art screamer that's not just for techies. Packard Bell delivers Pentium power to the people. (Packard Bell; 800-733-5858; less than \$2,995, 17-inch monitor, \$860)

—Christine Grech



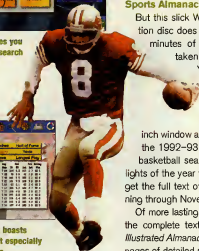
Packard Bell's Navigator software makes it easy to harness the system's Pentium power.



The Almanac gives you several ways to search for sports stats.

Player	Team	Year	Points	Rebounds	Assists	Blocks	Steals	Turnovers	Minutes
Shaquille O'Neal	Orlando Magic	1992-93	23.4	31.6	5.5	3.0	1.5	4.0	36.2
Scottie Pippen	Chicago Bulls	1992-93	16.1	10.4	6.0	1.6	1.5	2.5	33.0
Tim Duncan	San Antonio Spurs	1992-93	12.6	10.4	2.5	2.3	0.8	1.5	28.0
Allen Iverson	Philadelphia 76ers	1992-93	23.5	3.1	6.2	0.0	1.5	3.0	37.0
Grant Hill	Pittsburgh Pirates	1992-93	15.1	4.4	2.5	0.0	0.8	1.5	30.0
Tim Lincecum	Seattle Mariners	1992-93	15.4	4.4	2.5	0.0	0.8	1.5	30.0
Tim Lincecum	Seattle Mariners	1992-93	15.4	4.4	2.5	0.0	0.8	1.5	30.0
Tim Lincecum	Seattle Mariners	1992-93	15.4	4.4	2.5	0.0	0.8	1.5	30.0
Tim Lincecum	Seattle Mariners	1992-93	15.4	4.4	2.5	0.0	0.8	1.5	30.0

The Record Book boasts detailed—but not especially timely—statistics.



From Sports Illustrated To Sports Multimedia

Swimsuit models are definitely the most glaring omission in the new **Sports Illustrated 1994 Multimedia Sports Almanac** from StarPress.

But this slick Windows/Mac compilation disc does feature more than 40 minutes of HBO-produced video taken from *SI's '1993: The Year In Sports'* video, a subscription promotion for the magazine. The QuickTime clips run in a 2-by-3-inch window and deliver overviews of the 1992-93 football, baseball, and basketball seasons, as well as highlights of the year for all sports. You also get the full text of 54 issues of *SI*, running through November '93.

Of more lasting value to sports fans is the complete text of the 1994 *Sports Illustrated Almanac*, with more than 1,200 pages of detailed stats, photos, and other information. There's also a cute, context-

sensitive trivia game with more than 300 questions.

What makes the disc special, though, is its easy, attractive interface. A complete set of animated icons gives you lots of ways to find exactly the information you want. A Stepback icon lets you return immediately to any portion of the disc. A separate Map icon also gives you instant access to the entire contents of the almanac. The simple search function, however, finds only text, not video clips or photos, and doesn't identify the matches within articles.

On the downside, the video clips are tiny and the data is a bit dated. StarPress hopes to fix these problems next year with a version using MPEG video compression and a spring 1995 update disc for more timely data.

As for the missing swimsuit models, StarPress says it's talking to *SI* about additional products, possibly including a swimsuit title. (StarPress Multimedia; 415-274-8383; CD for Windows/Mac; \$59.95)

—Fredric Paul

The Thrill of Discovery

Used to be, anthropologists thought cavemen were stupid creatures, hairy beasts that only slightly resembled humans. But in 1879, while exploring a cave in northern Spain, Maria Sautuola and her anthropologist father discovered cave drawings of bison, extinct in Spain for more than 10,000 years.

The *Discoverers*, a new multimedia title from Knowledge Adventure, takes you on an interactive journey exploring such discoveries. Based on the best-selling book and featuring the IMAX movie of the same name, *The Discoverers* uses a 30-minute video to detail findings in both the distant and recent past. For example, the disc also contains footage demonstrating an unexpected level of intelligence in dolphins. The video explains how the marine mammals follow complex instructions, linking signals to perform new tasks.

The disc also lets you click on the computer screen to check out related

topics. Learn more about Ferdinand Magellan's 16th-century explorations. Or maybe you'd prefer to find out about the Magellan spacecraft, which used radar to map the surface of Venus.

Ready for a challenge? The Discovery Menu gives you games and projects such as Find the Discoverer, in which you must identify names and faces of historical and modern-day explorers. The Mis-Discovery game sends you racing through a virtual world to find clues and answer questions about famous discoveries that turned out to be

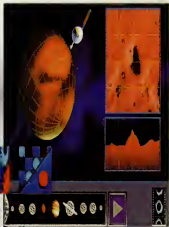


mistakes or hoaxes. The Learning Module includes eight projects, from making a compass to studying how sound travels.

The *Discoverers* is a fascinating adventure for all ages that deftly satisfies our

curiosity and feeds our imagination. (Knowledge Adventure; 800-542-4240; CD for DOS, \$79.95)

—Donna Meyerson



Satellite mapping of the Martian surface reveals the famous face to be merely a mountain.

THE DAILY PLANIT

Babes, Bears, and Bungee Jumpers

What do bikini models, hot-dog skiers, and polar bears have in common? No, not Coke commercials. They all show up in Iguana Productions' **Personal Daily Planit**, an entertaining series of personal information managers for Windows, distributed by Media Vision.

Planit contains the usual organizational fare: daily, weekly, and monthly calendar views; address and phone books; to-do lists; an alarm clock; and an appointment scheduler. But what sets Planit apart are its

voice-control option, entertainment collections and, of course, its stunning graphics.

Each version of the program—**Planit Paradise** (babes), **Planit Adrenaline** (skiing, surfing, rock climbing, and other high-intensity sports), and **Planit Earth** (nature shots)—includes more than 400 photographs, with one displayed for every



In the calendar view you see the image of the day, like this one in **Planit Adrenaline**.

day, week, and month of the year. If you can't wait till October to catch a glimpse of your favorite swimsuit girl, the most radical ski shot, or one particular photo of stunningly beautiful scenery, you



Planit Earth features critters like this polar bear and about 400 other photos.

can run a slide show to cycle through the entire collection. If you get tired of the included images, import your own and stare at those all year. Planit also includes a handful of grainy QuickTime video clips that you can set to play at specified times as personal reminders.

The program also includes Dragon's Talk To Plus, which lets you bark commands at your planner. It works pretty well, once you train the system to get used to your voice. (For more on Talk To Plus, see "Tell It Like It Is," on page 116 of the May issue.)

And there's more: Planit lets you reward yourself with a joke when you get to the bottom of your to-do list, find out which famous people share your birthday, or expand your vocabulary by learning a new word every day. A DayTimer would probably be more efficient, but at least Planit beats working. (Media Vision; 800-845-5870; Windows, \$49.95, CD for Windows, \$59.95)

—Christine Grech

Edit Your Own Dracula Movie

Film connoisseurs know that laserdiscs are by far the best way to watch a movie on a TV screen. Laserdiscs not only make it incredibly easy to move

around in a film, but also provide a staggeringly sharper image.

And with the arrival of the deluxe, "director-approved edition" of Francis Ford Coppola's **Bram Stoker's Dracula**, laserdiscs now offer interactive features, too. Among other things, this movie laserdisc includes a hands-on editing workshop that lets you actually edit a key scene from the movie, play it back, and then compare it to the director's final cut.

This "cutting edge" concept from Voyager's Criterion Collection is completely engaging. Coppola provides the first and second unit "dailies" from which a key scene starring Winona Ryder and Keanu Reeves was selected. He even includes several takes of each shot

Winona and Keanu share a fleeting tender moment as he departs for business at Dracula's castle—you can edit it for maximum impact.

Using the laserdisc player's programming capability, you select the shots you want for your version, then play back the newly edited scene. Select the next "chapter" to compare your creation with Coppola's version.

The disc also includes a scene-by-scene commentary on the movie by Coppola and his production team. Flip to another track to hear a separate presentation of the music and sound effects—without the dialog. The three-disc package also includes a costume-design analysis, a special-effects class, and a video documentary on the movie's production.

Judge the film for yourself. But once you see all the raw takes and dialogless footage, you won't fault the production's breathtaking visuals. With this laserdisc, you don't just watch *Dracula*. You live it in flesh, bones, and blood. (Voyager; 800-446-2001; Laserdisc, \$124.95)

—Michael S. Lasky



Sound Gets Even More SCSI

A lot of sound cards double as CD-ROM controllers. But Adaptec's new **AMM-1572 SCSI AudioMachine** is different: Not only does it work with all kinds of hardware, but at less than \$400 it's also the first consumer-priced board to support XA-Audio.

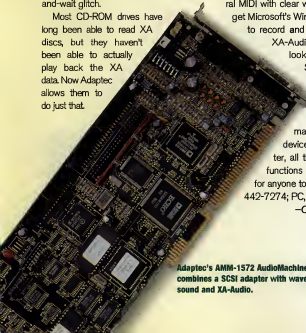
This is a big deal, because on XA-compatible CDs the tracks for sound and graphics are located more or less together. Multimedia games and titles that support the technology end up looking a lot less like badly-dubbed karate movies: audio-video synchronization is smoother, and soundtracks play effortlessly behind speaking actors without a single click-and-wait glitch.

Most CD-ROM drives have long been able to read XA discs, but they haven't been able to actually play back the XA data. Now Adaptec allows them to do just that.

If there's a catch to XA, it is only that it's still new, and few XA titles have yet hit the market. In the meantime, it's the AudioMachine's unique design that really sets it apart. Unlike most sound cards, this one supports a complete SCSI-2 interface. That means you can attach a SCSI hard drive to it and use it to boot up your system or connect other SCSI peripherals. Adaptec even provides a connector that lets you rip out your system's floppy-drive interface to free up another slot.

Adaptec is targeting power-hungry multimedia freaks with this board. It supports the Windows Sound System, the 8-bit Sound Blaster standard, and General MIDI with clear wavetable sound. You get Microsoft's Windows Sound System to record and play back audio, an XA-Audio demo disc, a cool-looking microphone, a SCSI cable, an external SCSI port, and Adaptec's EZ-SCSI software, which makes connecting SCSI devices a snap. Even better, all these state-of-the-art functions come cheap enough for anyone to play. (Adaptec; 800-442-7274; PC, \$399)

—Christopher Lindquist



Adaptec's AMM-1572 AudioMachine combines a SCSI adapter with wavetable sound and XA-Audio.

'Toon Tools

Unless you're Gary Larson, odds are your cartoon wonders will never see the light of the morning paper. But as IntraCorp's **Cartoon Maker** proves, you don't need to be an artist to create fun, original cartoons. With a point here and a click there, you can easily make a colorful comic strip, jazz up a fax sheet, even crank out funny party invitations.

In **Cartoon Maker**, creating a cartoon is simply a matter of putting together pieces of clip art—including characters, backgrounds, props, thought bubbles, dizzy stars, and other cartoon elements. Best of all, these images are dynamic. Just select the appropriate command to shrink an image or change its pose or facial expression. Once you've set the scene, you can add dialog boxes and special effects or color it in by clicking on the desired colors in the paint palette. There's even a Magic Color option which automatically paints your entire cartoon using appropriate colors. It's so easy to use you can whip together a complete cartoon in about five minutes.

But while **Cartoon Maker** is fine for quick cartooning, its limited range of functions will leave you wishing for more. You'll soon grow tired of the program's small cast of characters (there are 16) and wish you could create your own cartoon stars or even import images you've found elsewhere. But unlike with a paint or draw program that gives you the tools to unleash your creative powers, you're stuck with a single font, just 12 backgrounds, and no undo feature. **Cartoon Maker** is a cool idea that's fun for a while, but it's in dire need of expansion. (IntraCorp; 800-468-7226; DOS, \$39.95)

—Christine Grech

TWYLA'S WORLD

A Spoonful of Gaming Makes Math More Fun

Like every other teaching software program I've seen, the three math programs I tried this month use games and multimedia to keep you interested while they basically just drill you with stuff you have to learn. The lessons are pretty much the same thing you get in school, but the software makes homework more fun than doing problems on a worksheet. The games are a spoonful of sugar to make the medicine go down!

Question 1: A girl is learning her multiplication tables. If she uses three software products for four hours a week each, how many hours will she spend studying in four weeks?
Answer: 48 hours.

Question 2: Will she master multiplication sooner than if she just did her regular schoolwork?
Answer: Yes, but she'll probably be tired of it before the month is over.

Math Magic, for kids four to eight, starts with simple counting and moves up to addition and subtraction with carrying and borrowing. It disguises the problems with a paddle and bouncing ball game. You play a wizard who uses the ball to knock down walls that are keeping animals locked up in a dungeon. Every so often as you're knocking down the walls, the program pops over to a math problem that you have to answer before you can go on.

The game itself is actually pretty fun, but it doesn't have anything to do with the math problems. After a while, the interruptions really annoyed me. It's obvious they put the game in just to take your mind off the unfun part of solving

problems. Most kids won't be fooled for very long. (Electronic Arts; 800-221-7911; DOS, \$39.95; Mac, \$49.95)



When you're ready to move to the next level of math problems in *Mega Math*, a cute girl named Odessa gives you a timed test.

With **Mega Math** the games have more to do with the problems, so you don't notice the changes between playing and learning as much. It also has more variety, with three games that let you practice doing your problems. Then, you go to the test area to see if you can pass to the next set. *Mega Math* goes all the way from simple addition to multiplication and division by numbers up to 12. That's good for me, since my dad says I'm about halfway in between right now.

The first game is called *Das Liquidator's Challenge*, in which you have a hammer and only a few seconds to smash the robotic animal carrying the correct answer to the problem on his back. It sure makes you think quickly! In *Dr. D. Vious' Mind Masher*, you try to blow up a machine by dropping answers into the right slot. *Orff Strategy* is a board game like checkers in which you capture squares on the board by getting the right answers to the problems.



Math Blaster Mystery includes four games that you play as you move from *Computation Cadet* to *Chief Problem Solver*.



Math Blaster's games are the most challenging.

But I think the best thing about *Mega Math* is its multimedia stuff. It has a whole cast of interesting characters you get to know. Dr. Krista is the friendly teacher. Quaysoo and Quarky are two aliens who show up all over the place. And I never got tired of the cute girl with the Australian accent who gives the tests. (You should hear me do her accent!)



If you solve math problems that pop up on the screen in *Math Magic*, you get to advance through different levels.

Mega Math also has a good way to give you awards for moving along to the next level. It keeps track of your progress, prints out certificates, and keeps statistics on your right and wrong answers. I like this program and I think that a lot of kids my age would find it a good way to get ahead in their math classes at school. (Bright Star Technology; 800-757-7707; DOS, \$49.95)

I have a friend who has a program called Math Blaster: In Search of Spot. I didn't use that program for this article, but I did try a more advanced program from the same company called **Math Blaster Mystery**.



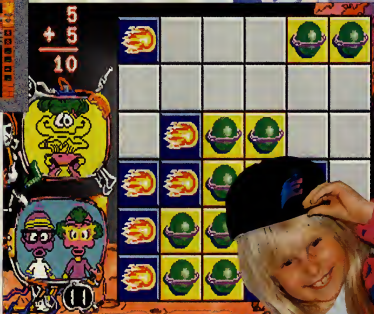
In Math Magic, your job is to knock down dungeon walls.

Compared with Mega Math, Math Blaster Mystery isn't very pretty to look at, but its games are more challenging. That's because it tries to teach you the really advanced parts of math, like stuff you need when you take algebra. Even though that is ahead of my level in school, I found that I could understand and solve most of the easier problems.

In Math Blaster Mystery, you play the role of a detective trying to solve four kinds of problems: following the steps of a word problem, weighing the evidence by moving numbers between three scales, deciphering the code by filling in the blanks of an equation, and searching for clues to figure out a secret number. This would be a great program if it had better sound and graphics. (Davidson and Associates; 800-545-7677; DOS/Mac, \$49.95)

For all the fun stuff in these programs,

what I didn't find was any hint of the cool things you can do with numbers. That's too bad, since my dad has shown me that a lot of complicated math ideas can be introduced with simple everyday examples. He says you can learn a lot about probability by just flipping coins or playing with a deck of cards. And you don't have to be a grown-up to find out that something really strange happens to a strip of paper when you twist one end and then glue it together. Or to find out that the shape of a seashell has something to do with multiplying 2 times itself over and over. Or that instead of counting 0 to 9 like we're used to, you can write any number with just 0's and 1's like computers do. Boy, do I wish these programs talked about some of that.



In one of Mega Math's three practice areas, you must outsmart the Orfs in a strategy board game.

I think if they started showing you some of the neat stuff when you're young like me, then a lot of kids would be more interested in getting through the basics.

— Twyla and Dan Ruby

Twyla Ruby, 8, attends Montclair Elementary School in Oakland, California. Her dad, Dan, helps her write this column.

A COLORING BOOK ADVENTURE

Chadwick and the Sneaky Egg Thief

When kids are the target audience, there's a fine line between cute and obnoxious. That's true for books and cartoons as well as software. And as any parent will attest, too much falls on the wrong side of the line.

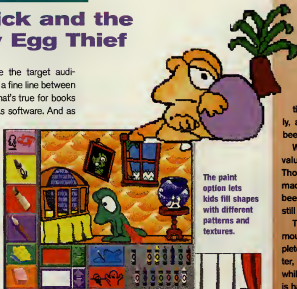
But KnowWare's **Chadwick and the Sneaky Egg Thief** comes as welcome news. Designed for three- to eight-year-olds, it's one of a growing genre of interactive titles that teaches kids reading

skills. Chadwick's plight is one that kids can sympathize with: Because he's been left in charge of his mother's unhatched egg, this young dinosaur can't go play with his friends. Then he has an idea which, needless to say, leads to trouble.

The text of the story appears on 20 illustrated pages, with each word highlighted as it's pronounced in the accompanying narration. Serious achievers can click on words to hear them repeated or use an option that identifies the objects onscreen with both the



Users of all ages will be able to color within the lines thanks to Chadwick's nifty design.



The paint option lets kids fill shapes with different patterns and textures.



Chadwick the dinosaur and his nemesis, the Sneakasaurus.

written and the spoken word. Others will simply want to know how Chadwick and his pals retrieve the stolen egg from the Sneakasaurus.

But it's a good bet that a lot of kids won't make it past the first few pages, at least the first time they play. That's because Chadwick, the first of KnowWare's Coloring Book Adventures, is filled with a range of coloring and other decorative options that put a new spin on the idea of an interactive storybook. The simple style of drawing that gives Chadwick and his friends their charm also makes the illustrations the perfect palette for your child's self-expression. Each page is so much fun, kids

Computer Crayon

The main drawback to electronic coloring is that the mouse just isn't the best tool for the job. That's where Appoint's **Computer Crayon** comes in. Essentially a small trackball embedded in the end of a pen-shaped pointer, the Computer Crayon works on any soft surface—a magazine, say. It's described as a tool "for children and artists," and my kids took to it immediately, avidly coloring everything that hadn't been bricked over.

Whether it's likely to be of any real value to artists is another question. Though the squiggles and smears I made in Windows Paintbrush might have been a bit more graceful than usual, it's still not exactly a precision tool.

The Computer Crayon is Microsoft mouse compatible, and it comes complete with cable, connector, adapter, and driver. Installation, while not quite child's play, is hassle free. (A.P.T.; 800-448-1184; PC/Mac, \$49)
—Peggy Berg



won't want to turn to the next one.

The plentiful color, pattern, and texture choices allow for some arresting combinations.

My twin five-year-old testers enjoyed bricking over just about everything in the picture using shades of red and lime green. Kids who choose the more authentic crayon tool will be pleased to know that the program is designed to keep you coloring within the lines, no matter how clumsily you might manipulate the mouse. (KnowWare; 800-600-4848; DOS, CD for DOS, \$49.95)

—Peggy Berg

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AZTECH

ODELL DOWN UNDER

Life On the Reef

It's tough being a fish. You've got to eat. You've got to stay clear of predators. And you definitely don't want parasites. Such is life on Australia's Great Barrier Reef, where survival is anything but easy.

MECC's **Odell Down Under** lets kids ages nine and up take a shot at fishhood—it uses games and role playing to teach the ins and outs of marine living. And unless they learn quickly about food chains, coral reef ecosystems, and ecological balance, your kids'll be shark bait.

Game play is a lot of fun. As kids move the cursor across the colorful reef, the fish will follow. To stay alive, they must maintain sufficient energy and health levels—their status is displayed on the screen. If the energy level drops too low, they starve to death. And they get sick if parasites



Create your own fish and see how well it does on the reef.

stay on too long. In order to stay alive and earn points, kids also need to know their fish's activity patterns, eating habits, enemies, and special abilities.

It also pays to be quick. If a predator starts swimming toward them, they must swim for cover—the right kind of cover—immediately. If they're a trigger fish, for



Move the cursor across the reef in search of food and places to hide, and your fish will follow.

instance, they'd better know that trigger fish hide in coral. If things get really tough, pressing the space bar activates their fish's special defense mechanisms, such as puffing, squirting ink, giving an electric shock, or extending spines.

Eating is another challenge. Kids will constantly be searching for food to munch on, but they'd better watch out—there are lots of poisonous things that might make their fish deathly ill.

Kids will love life as a fish, and even adults will quickly find that survival as a reef creature is tougher than they think (MECC; 800-885-8322; Windows/Mac, \$59.95)

—Donna Meyerson

Big Anthony's Mixed-Up Magic

It's a kid's dream come true: They look at their messy room and, instead of cleaning it, chant this simple incantation: "Oh messy room / can you hear? / Make this clutter disappear. / Put everything back

just right / so we are ready for tonight."

But as Big Anthony finds out in **Big Anthony's Mixed-Up Magic**, magically wishing for things is a whole lot simpler than what happens once you get them.

Kids and parents familiar with Tomie dePaola's Strega Nona series of children's stories will recognize their friends, Big Anthony, Strega Nona, and the rest of the crazy Calabrians. But thanks to Putnam New Media and dePaola, kids don't have

to settle for reading about any more. Now they can explore Calabria for themselves, or just listen as the author reads the story aloud. The package includes the storybook it's based on, *Strega Nona Meets Her Match*.

To progress through this story-adventure, kids must help the lovable oaf solve various problems. Those include finding an important letter, discovering the right combinations of levers to work the headache machine, and matching the right sounds to objects with the voice-changer machine. There's a method to the madness, which of course consists of clicking on objects in each scene.

In addition to the main story, the title includes four games-within-the-game available in Strega Nona's house: Crazy Mixed-Up Zoo, Big Anthony's Magic Tricks, Animal Music Maker (featuring the program's four original sing-along songs), and the Cupboard Matching Game. The box says ages five to ten, but the title will appeal mostly to the younger set. (Putnam New Media; 800-788-6262; CD for Windows/Mac, \$49.95)

—Sarah Tilton



The wart cream only makes matters worse in Big Anthony's Mixed-Up Magic.



Creating a tornado in the kitchen is only one of Big Anthony's problems as he tries to learn magic.

Silicon Valley Execs Bag Corporate Life; Will Bring Mind-Bending Technologies to Consumer Gaming

You won't believe this, man. These guys from Silicon Valley have turned and burned from their computer technology jobs so they can take what they learned and bring their own cool stuff to gamers like you! They're called ASG Technologies, technologies being the key operating word!

Video JukeBox for Sega Genesis, SNES, and Atari Jaguar

ASG is calling this the "VJ," for us lazy megagamers. It holds six game carts on-line, letting you select games effortlessly. And it's *networkable*, so all you need to do is take their cool computer-ribbon cable and connect one VJ to another VJ, and then another, and so on, to hold 12 carts, 18 carts, 24 carts—up to 36 carts! All you do is toggle between games by pressing a button on the control deck. Just turn on your game system and you're wired! The Jukeboxes stack together and look like a stereo system! Just Rack 'Em and Stack 'Em! It even has a side slot to hold those *useless* game manuals you never read. How many clams for this radical VJ? About as many beefcakes as a cart costs!

Video JukeBox™

NETWORKED MULTI-CARTRIDGE DOCK

Rack 'em & Stack 'em!



Sega Genesis version of the Video JukeBox shown in photograph.

The IR Deck Universal Remote plus IR Docking Station

For the ultimate lazy couch-gamer, ASG's going to ship an awesome combo universal remote control and infra-red docking station this Fall. This multi-product solution comes with a universal remote control to select carts on your VJ, while controlling your stereo, VCR, TV, and game system. And, ASG will make an IR Docking Station that sits on the coffee table, holding the remote while providing an infra-red link to hold the joysticks you already own. It'll work with *all* your joysticks, so you won't have to go out and buy an IR joystick! The Dock will engage features like *slow-mo* and *rapid fire* on your regular joypads, and runs faster than most IR products! The clams on this baby? Again, about as much as a cart costs!

You want software? Check this out!

These dudes are Hosenosé & Booger. They're twisted, grosser than a snot-dripping pizza, and are going to spit and slobber at you real soon! It's the most *disgusting* game ever created! It takes place inside Hosenosé's diseased, deformed body. Booger is a classic: a grunge-rocker-teenage-snot with a *major* attitude! More will be written in the next issue about these clam-hawkers. Stay tuned!

And there's even more. They don't want to say what's really behind their lab doors, but it will *definitely* redesign gaming!

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DRAGONSPIHERE

MICRO PROSE

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Available on CD-ROM for IBM PC/Compatibles
1-800-879-PLAY



Tube Man

Keith Ferrell

Roadwork Ahead

From the Appian way to Route 66, there's never been a road built that didn't encounter construction delays. It's no different with the information superhighway, or infobahn, to use the latest, hippest neologism. Whatever we call it, it's not going to be done tomorrow.

Or the day after. Last fall the business press and nightly news programs resounded with mergers and rumors of mergers, alliances and hints of alliances, technologies and promises of technologies, all aimed at forging telecommunications conglomerates capable of dominating traffic on the 'bahn. A few lucky communities found themselves the beneficiaries of planned test-runs for the Age of Interactive TV: movies on demand, databases for further information related to programs you're watching, programmable news retrieval, interactive games played among Nielson-sized teams. They became the pioneers of an electronic constituency, deciding the future of the nation and the world from their sofas. Leadership by remote control.

Expectations soared. This highway, it seemed, was nearly open, and traffic would flow sooner than anyone had dreamed: in a couple of years rather than a couple of decades. A few optimists even felt that parts of the infoway could have ribbon-cutting ceremonies within a few months.

Well, it was a tough winter. By the spring thaws, it was clear that some of the biggest strategic plans sown in the fall weren't going to sprout. Alliances and mergers—notably TCI and Bell Atlantic, the biggest telecommunications combination of all, seen by many as the corporate bellwether of the interactive era—fell apart. Time Warner Interactive delayed an interactive cable test for several

months, maybe longer. The press changed its tune: There were potholes on the digital driveway, and they were caused by technology not up to what it is being asked to do.

Specifically, the nation's telephone and cable TV infrastructure isn't ready for the demands that interactivity will make of them. Nor are the wonderboxes for the top of your TV going to be ready any time soon.

So, is interactive TV dead—or even taking a protracted nap? Not at all. In fact, it's growing faster than ever on at least three fronts. Call them access ramps, if you want to stretch the already tired metaphor. Starting points and weigh stations where we can get used to interactive TV while waiting for the next round of mergers, acquisitions, and technologies once again to prime the hype pump.

PC/TV: Your computer offers the most flexible place to wait. Mouse potatoes can look forward to faster, more loaded machines for less money. Multimedia now, full-motion video almost immediately. The key is software: A generation of content and programming experience has already created an entertainment industry for computers. With faster processors and new compression techniques, this industry now has the horsepower to bring TV-style production values to its products.

Video Game Decks: Again, more powerful than ever, with new add-ons, peripherals, bells, whistles, dogs, and ponies, all available for perpetually dropping prices. Still at their best with fast action and arcade games, the fall should see the emergence of more


televisionlike experiences, with video-quality production values, images, and sound. And you'll play them on your TV.

Online Services: Where the action is. More of it in more forms, than anyone can possibly explore. At the moment, at least in real time, most of that action is in the form of text files. But text, no offense to video junkies, remains a marvelously supple and compact means of information transfer.

Online video is already in test mode on some services and, with the spread of faster modems and related technologies, will be widely available a year from now. The bigger services such as Prodigy are looking to move their act to a television set near your couch in the not-too-distant future.

OK, so you don't see movies on demand in this picture. So what? Just how far are you from a video-rental parlor, anyway? No on-screen databases, either, and the TV will for a while remain the place where you watch the news rather than participate in it.

In the meantime, there's no need for you to wait until the behemoth telephone and cable companies

shell out billions of bucks to pave a smooth, well-marked superhighway for you to cruise with your TV set. If you're adventurous, there are plenty of interactive information and entertainment dirt roads, country lanes, and stately boulevards already in place. Just pick your vehicle and go. 

Keith Ferrell is the editor of Omni, the editorial director of Compute, and science and technology editor of Penthouse, each of which covers the interactive revolution in its own way.

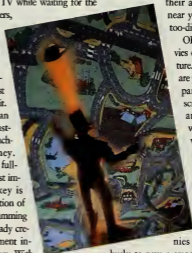


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Paramount Interactive



Game On

Rusel DeMaria

Thanks for the Memories

An open letter to software game developers: You're driving me crazy.

No, not with the games you create. Not with the clever and devious puzzles you challenge me with. Not with the pedal-to-the-metal action that keeps me on my toes. No, my problems start before any of the good stuff—with trying to install your software on my machine.

You see, whenever I get a new game for my PC, I end up playing two games at once—the one I bought and the one I automatically inherited from Microsoft. It's the latter contest that drives me nuts. When I try to install almost any new game I'm sent into the acronym hell of DOS, EMS, XMS, and the nightmare of multiple CONFIG.SYS files. (Sometimes I think CONFIG.SYS should be called CONFUSE.SYS.)

To make matters worse, it's never the same challenge twice: Some PC games require expanded memory (EMS) and use a memory manager like Quarterdeck's QEMM. Other games simply refuse to work with EMS, and require extended memory (XMS). That means you have to turn off QEMM and turn on Microsoft's extended memory manager, HIMEM.SYS. Still others work only from within Windows, which itself automatically works with XMS.

I must have at least 15 different CONFIG.SYS files on my computer. That's testimony not only to a confused industry but also to my own confusion. And I do this for a living. What happens to people with no technical background at all? How in the world do they ever get their games to work?

And that's not the half of it. There's also the problem of conventional memory. You know, the precious little space in the first megabyte of RAM on your PC. Generally, DOS lets software use the first 640K of that space. If a program needs more space than that, it must jump through 64K-wide hoops in the memory area above the first 640K—the "upper memory."

Today's games require a whole lot of conventional memory to run, in addition to some space above the first meg of RAM. Sometimes you have to swap some of the disk operating system (DOS) into upper memory to claim as much conventional memory as possible for your games. Suddenly it's like gridlock up there.

If you didn't understand a bit of that, you're not alone. That's why I'm making this appeal to make your life (and mine) a lot easier. Wouldn't it be great to just fire up your favorite game and start playing? Who needs to spend an hour and \$15 in technical-support phone calls just to get a game to work?

I've been talking to various PC game developers about this problem, people such as Richard Garriott at Origin Systems and Trilobyte's Graeme Devine, developer of *The 7th Guest* and its new sequel, *The 11th Hour*. These guys have found ways to develop high-end games that run in as little as 300K of conventional memory.

Garriott explains that game developers can use new program compilers that make it possible to address all of a machine's memory. I know you're not interested in compilers either; or you want to do is play games. But these programming tools let developers satisfy memory-hungry programs with extended memory, but without incurring a significant performance hit in the process.

Ultimately you could have even very complex games capable of running in 300K to 450K of conventional memory, as long as enough extended memory is available. For us game players, that means not having to choose among different system configura-


tions (depending upon different game requirements) every time we start up our PCs. Forget the hassle of using special boot-up disks just to grab a little bit more conventional memory for our games.

Later this year, Microsoft plans to release new versions of Windows that dispense with DOS and all of its memory headaches. But many game developers are unwilling to deal with Windows' performance trade-offs. According to sources, Microsoft is working on tools to help developers speed the performance

of Windows games. And Microsoft claims that games developed for the new 32-bit systems—such as Windows NT and the upcoming Chicago—will work equally well in today's 16-bit versions of Windows.

But what are we supposed to do in the meantime? And what about the DOS faithful? Can we expect a better memory model that uses less conventional memory? Can we look forward to standardized installation routines?

Only the game developers know for sure. I suspect they'll come around. They'll have to. Everyone loses money when customers are confused and unhappy. Telephone support lines ring off the hook. Retailers have to accept returns.

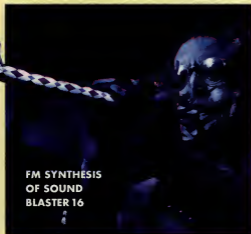
Frustrating your best customers simply isn't good business. It's time for game developers to create memory and installation standards. 

Rusel DeMaria is the author of more than 25 computer and video game strategy books.



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Party Girl

Everybody's Gone Surfin'

When you think of the Party Girl, you probably picture me all decked out in some fancy couture dress, sipping cocktails and deviously extracting secrets from the multimedia industry elite. This is in fact often the case. But given half a chance, I'd trade the expensive outfit and dry martini for a wild bikini and my old Hope twin-fin any old day.

Surprised I can surf? Hey, I'm a jamming surfer, or at least I used to be. Back when today's top multimedia nerds were still geeking it out in the high school AV Club, I was busy doing cutbacks and 360s in the warm Malibu swells. Of course, I gave it all up for oenology and computer science, but every time I get a few days in SoCal I find time to grab my log and hit the waves. After a long night spent scoping out multimedia news at pretentious Hollywood parties, there's absolutely nothing like it.

That's why I'll be first in line to snag **The Surfinary**, the multimedia title all the surf animals at the beach are talking about. Based on the book of the same name by **Trevor Cralle**, this title will reportedly come from Scott Valley's **RoundBook Publishing Group**, the same people who are working on the *Tommy* title I told you about a few months back. Is there enough interest out there to keep a surf title afloat? Who cares? The Party Girl's gotta have it. The Surfinary will include a whole dictionary of surfing etiquette and terminology (which I don't need), plus more than 500 killer surf pics (which I want desperately).

At a great beach party by the Santa Monica Pier, I heard it would be out later this year, along with two other cool RoundBook titles. One is **The Man with the Underwater Eyes**, based on the work of fish photoman **Al Giddings**. It'll include an original Richie Havens soundtrack, 30 min-

utes of video, and more than 500 still images. The other is **The Realist**, based on the magazine of the same name founded by Yippie movement cofounder **Paul Krassner**. Along with 45 minutes of video clips covering Krassner's stand-up comedy and political satire, it'll include plenty of text from Krassner's magazine and book projects. All of the above will be CD-ROM titles for Windows, which has to be the un-Yippiest platform out there.

RoundBook wasn't the only action I uncovered in La La land. Seems there's a nasty battle brewing among people planning 24-hour cable TV networks focusing on hi-tech, multimedia, and gaming. First I met **Kevin Wendle**, the big shot ex-Fox executive VP. (He brought us "Married With Children" and "The Simpsons," among other shows.) Now he's one of the lead guys at **C/Net**, which is slated to debut this summer with two hours a week of high-tech programming and hip MTV **VJ Adam Curry** and femme astronaut **Mae Jamison** as hosts. I got a chance to check out some of the pilots. They were anything but dorky.

But right after C/Net finished producing its pilots, I discovered that **Microsoft** has decided to dip its giant toe into TV, too. First, it announced that it signed a deal with cable giant **Tele-Communications (TCI)** to test a new interactive cable TV system in the Seattle and Denver areas. (Microsoft and TCI employees will try out the system later this year, with paying customers joining the

tests in the Denver area in 1995.) Then I discovered the two companies are forming a separate venture to do a 24-hour channel with news, features, and (of course) shopping as hooks when it debuts late next year. It'd better be separate. The last thing the world needs is an all-day Microsoft infomercial.

The thought depressed me, so I winged it back to San Francisco to see what was happening in Multimedia Gulch. I ended up at a killer party. Not only did all the usual gulch suspects make an appearance, but the Hollywood and Manhattan crowds showed, too. Cronies of **Robert DeNiro** were everywhere—apparently **Tribeca**, DeNiro's new multimedia company, is staffing up.

I overheard at the bar that **Electronic Arts** has got some virtual-reality amusement parks on the drawing board. But the most interesting conversation I had was with a guy named **Mark Linn**, who used to be a contributor to *National Lampoon*. He's designed a funny, weird-campy title tentatively called **The**

Placemat Guide to the Garden State. No due date yet, but I'll keep you posted.

And are you looking for some hot summer reading? The Party Girl's found it: It's called **Mother of Storms**, the latest from sci-fi author **John Barnes**, published by **TOR Books**. According to a book agent I met at a San Pedro cocktail party, it'll be a veritable 1984 for the information age, a story of one man's obsession with seedy cybersex. And speaking of obsessions, if I can't go surfing, I'll have to ease the withdrawal with another martini and another scoop. Look for me near the bar.



ILLUSTRATION BY MICHAEL STREIBER



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BOSS AROUND. AND A COW.

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TEXTURE-MAPPED HUTS, TREES, WOMEN, CHILDREN, AND
WORST OF ALL, YOUR COW. YOU TRY TO TRASH THEM



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AND THEIR GUTS GET ALL OVER YOU.
LIFE STARTS TO SUCK. YOU'VE MET

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CAST OF ACTORS WHO CAN ACTUALLY ACT; LIKE
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PITS. AND YOU HIRE AN ARCHER TO HELP FEND THEM OFF. AGAIN THE
HORDE ATTACKS. YOU SAVE THE COW, BUT THEY EAT YOUR HUT, YOUR

THE HORDE™



CORN CROP, AND THAT GIRL NEXT DOOR YOU HAD YOUR EYE ON.



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GROW BIGGER, FASTER, EVEN SMARTER.

(AND YOU HAVEN'T EVEN MET THE EVIL CHANCELLOR YET.)

DEAR READER, WE PRAY YOU'RE THE SORT WHO LEARNS QUICKLY. 'CAUSE THIS STUFF'S

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HAPPENING ON 32 BITS. ENJOY, MY FRIEND. AND GOOD LUCK.

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video action on your

By Lon Wallace

PUMP UP THE VIDEO

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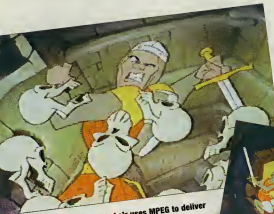
computer or set top box

The future of interactive entertainment is in television. No, not on TV as we know it, but in TV-quality video running on personal computers and high-end game machines. And if you pick up the right hardware and software, that full-motion, full-screen future is now.

Advanced video-compression technologies make interactive multimedia titles and games that look as good as your favorite television show a reality. We're talking video that fills the entire screen, not some dinky little window. And we mean smooth, natural movement, not jerky freeze-frame animation that looks like an old silent movie.

Once experienced gamers see the clearly superior detail and realism, they'll never want to go back to what they're used to. And it's only this kind of TV-quality video that will finally bring millions of new enthusiasts into the interactive entertainment market.

We're still in the early stages, with prices still relatively high and only a limited selection of titles on the market. But don't let that stop you. For a few hundred dollars, you can play the games of tomorrow today.



ReadySoft's *Dragon's Lair* uses MPEG to deliver exceptionally smooth animation.

Traditionally, full-motion video (FMV) has been beyond the capabilities of most personal computers running the two dominant video file formats, QuickTime and Video for Windows. To look real, video requires a system to display some 24 to 30 different pictures or frames each second, fooling your eye into seeing smooth motion.

Most systems, however, can't deliver enough information to create that many pictures that quickly. So developers have had to come up with a variety of compromises and workarounds. Usually the first thing to go is image size—smaller screens can be updated faster, providing a smoother, more fluid video. That's why most of today's games and multimedia titles show their video in tiny windows. Slowing down the frame rate to 10 or 15 frames per second is a complementary technique that leads to jerky, jumpy clips. Another trick is to use less color in the video. Fewer colors means less information to process, but again the image suffers.

A hodgepodge of software-based video-compression techniques—from SuperMac Technologies' Cinepak and Intel's Indeo and DVI (Digital Video Interleaved) to Media Vision's Captain Crunch and Commodore's CDXL—are all competing to solve these problems, with limited success. Today's computers and set-top boxes just don't have the horsepower to deliver seamless FMV without faster processors or additional,

specialized hardware.

But since games and titles based on software video compression will run on any computer or set-top box, developers often figure that bad



video is better than no video at all. That's why hundreds of games and multimedia titles use software-based video.

Enter MPEG

But in the last few months, price cuts in a hardware-based technology known as MPEG, an acronym for the International Standards Organization's Motion Pictures Expert Group, have changed the picture. Always a higher-performance option, MPEG is now affordable, too.

SEGA CD: A LOW-COST ALTERNATIVE

Sega probably isn't one of the first companies that leap to mind when you think of high-quality, full-motion-video gaming. But the black-box giant is using its TruVideo technology to make a stab at beating the 16-color, 16-bit limitations of its hardware. The images it produces may not be beautiful, but they're certainly watchable.

Sega's second generation of SegaCD titles, including *Ground Zero Texas* and *Prize Fighter*, demonstrated that reasonable video performance was possible even from the rather stodgy SegaCD system. But the best example of SegaCD video may have been *Digital Pictures' Night Trap*. The game got a bad rap from Congress for its questionable content, and the SegaCD version has been pulled from stores. But *Night Trap* is technically excellent, using full-motion video to create a truly interactive—if violent—movie. (The 3DO version, which looks even better, is still available.)

The latest SegaCD games, such as the F-14 shoot-'em-up *Tomcat Alley*, push the technology even further, providing fast-action, full-screen video without the annoying delays normally associated with CD-ROMs. The video is still reminiscent of those precable days when snow meant more than the white stuff you get in winter, but Sega gets credit for doing a lot with a little.

—Christopher Linquist

For \$250 to \$450, MPEG boards and add-ons are already available for IBM-compatible PCs, Philips' CD-i set-top box, and Amiga's new CD³² game machine. Products are due in the next few months to bring the same capabilities to the Macintosh, the 3DO multiplayer, and the Atari Jaguar.

Under the MPEG standard, digital video and synchronized stereo sound are compressed up to 200 times, delivering video almost equal in quality to that of standard VHS tape. The images fill the full screen and are refreshed 30 times a second, the same rate as those on television. The result is noticeably better than software-based video, even on very fast machines.

It's not quite perfect, though. Overall resolution is limited to 352 by 240 pixels, making it not quite as sharp as VHS videotape (Super VHS has 400 lines of horizontal resolution, for example) and significantly below broadcast TV standards. Depending on how the video is captured and processed, you may see visible blocking or halving effects in your MPEG videos, especially in fast movement scenes or in frames with a lot of detail, like tall grass blowing in the wind.

These problems might be distracting to videophiles, but most gamers will notice only a vast improvement over the images they are used to getting. Another advantage is that digital MPEG video doesn't degrade the way tape does. It looks as good on the 100th viewing as it does the first time you watch it.

Right now, Sigma Designs of Fremont, California, is the only company making affordable MPEG boards for PCs, with two models of its ReelMagic product. The cheapest version, without sound capability, costs less than \$350. MPEG board prices should soon drop dramatically, however. Several players, including Jaz Multimedia of Santa Clara, California, are expected to enter the market this summer, and literally dozens of MPEG products are scheduled to debut by year's end. Word has it that Jaz will introduce a local-bus graphics card that includes built-in MPEG and sound capabilities, all for less than \$400.

For Macintosh users, Sigma Designs has signed a deal with Radius

to release a Mac version of ReelMagic this summer, and other companies are working on similar solutions.

In the set-top gaming sector, the MPEG add-on for Philips's CD-i player has been shipping since the spring for just \$250, and a new, low-priced Goldstar CD-i player is expected to debut later this year with built-in MPEG capability. MPEG solutions for the Commodore CD32 platform also cost \$250. The 3DO game system has already demonstrated its own MPEG option, which should be available soon, although prices have not yet been set.

The expected success of the MPEG standard—along with cash payments from MPEG backers—has convinced a few brave software developers to convert their multimedia titles to support it. In addition, an increasing number of MPEG-encoded mainstream movies and videos are now coming out. Many more companies are carefully eyeing the market, waiting for people to buy MPEG equipment.

As you can imagine, the quality and availability of MPEG hardware and software varies from platform to platform. If you're interested in playing games and running multimedia titles with real TV-style video, you owe it to yourself to check out the various options.

PCs Go Full Screen

The arrival of Sigma Designs' ReelMagic video card has altered the PC video landscape, just as the Sound Blaster changed the rules for PC sound cards.

PC board makers are scrambling to come up with competitors to ReelMagic. New boards will drive down prices but could cause confusion in the market. That's because while MPEG is an open standard, ReelMagic's method of controlling the video bitstream is proprietary, just as Sound Blaster uses its own methods to deliver music and sound effects. ReelMagic is making sure that CD movies will play on its boards, but MPEG movies, games, and multimedia titles developed



Sigma Designs' ReelMagic card brought affordable full-motion video to the PC.

WHY NOT JPEG?

MPEG isn't the only hardware-based, full-motion video scheme around. Motion JPEG (Joint Photographic Experts Group) has been around longer, but it seems to be targeted at the business market, not consumers.

JPEG was originally designed for still-image compression, and the Motion JPEG standard adapted it for video. It delivers higher-quality images but has a couple of problems as a consumer solution. For one thing, it's a symmetrical solution, meaning that the same card handles both encoding and decoding. That makes it perfect for video editing and creating video presentations, but it raises prices for those who just want to watch. With MPEG, consumers can get by with a simpler, cheaper decoder.

In addition, JPEG compression is not as efficient as MPEG's, so you can't store as much video on a disc and a single-speed CD-ROM drive can't deliver enough data for full-screen, full-motion JPEG video. That shuts out an important part of the potential consumer market.

—Fredric Paul

for ReelMagic boards may not play on all of the new competitors—at least not without special software drivers.

In an effort to ease the confusion, Aris Entertainment, Jazz Multimedia, and some 40 other companies have formed the Open PC MPEG Consortium, known as OM/1, dedicated to creating a hardware-independent way to deal with so-called Whitebook MPEG or Video CD data. The goal is to ensure that any MPEG Video CD you buy will play on any MPEG decoder you might own. This standard will cover only movies, however, not interactive discs. And unless

Sigma Designs plays along, the new group is likely to merely establish a rival standard.

For now, you can buy the ReelMagic card itself, pick up an MPEG upgrade kit to turn your plain PC into a high-quality video playback machine, or buy a new

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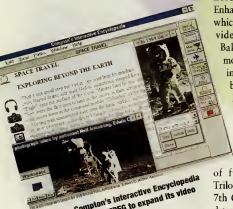
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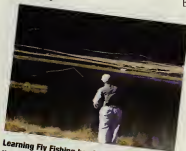
The MPEG version of *Police Quest 4: Open Season* will look better than ever.



Aris's New York, N.Y. is a collection of full-motion video clips.



Compton's Interactive Encyclopedia will use MPEG to expand its video clips to full screen.



Learning Fly Fishing has MPEG running through it.

computer with built-in MPEG capability. Kits—including CD-ROM drives, sound capability, and speakers—are available from Sigma Designs and companies such as Smart And Friendly, while Dell Computer sells an MPEG-ready Pentium PC for less than \$3,000.

A number of games and multimedia titles already support ReelMagic, including Activision's *Return to Zork*, with more than 100 full-motion-video and animation sequences. The arcade classic *Dragon's Lair* also ships in an MPEG version for PCs and 3DO machines. The MPEG version is virtually indistinguishable from the original arcade version. ReadySoft is also preparing an MPEG version of Don Bluth's *Space Ace*, with even richer animation than *Dragon's Lair*.

Other ReelMagic-based games in the works include Interplay Productions' *Lord of the Rings Enhanced CD-ROM*, which uses digitized video from Ralph Bakshi's animated movie to lure you into the make-believe world of Middle Earth. Upgrading this game to MPEG offers a dramatic boost in video quality, matching the impact of the original film.

If you liked the video in *The 7th Guest*, you'll love the 60 minutes of full-motion MPEG sequences in Trilobyte's *The 11th Hour*, sequel to *The 7th Guest*. In addition to automatically detecting an MPEG card on your PC, the new game includes proprietary software-based MPEG decoding that works on all machines. While impressive, the software-only playback doesn't match the smoothness and quality of video played over MPEG hardware.

The MPEG version of *Sierra On-Line's Police Quest 4: Open Season* uses extensive custom video sequences of southern California to help you solve a brutal murder. The game also exploits MPEG's audio support with a rock and rap soundtrack enhanced with state-of-the-art sound effects. *Video Cube* from Aris Entertainment now comes in an MPEG version with more than

100 full-motion video clips. Other Aris MPEG titles include *MPC Wizard*, *WorldView*, *Animal Kingdom*, *Americana*, and *New York, N.Y.*, all of which are collections of video clips and utilities.

MPEG also enhances such nongaming titles as *The Software Toolworks' 20th Century Video Almanac*, which uses more than 100 MPEG video sequences to cover everything from 1916 to Woodstock, and an updated version of Compton's *Interactive NewMedia Multimedia Encyclopedia* and *The Sporting News Pro Football Guide*.

That's only the beginning. Other upcoming ReelMagic titles include video postcards such as *Mozart Visits Yosemite*, *Mozart Visits the Grand Canyon*, *Mozart Visits Yellowstone*, and *Mozart Visits Hawaii*, as well as learn-as-you-view titles like *The Nature of Hunting* and *Learning Fly Fishing*—all from EE Multimedia. *Tsunami* has an MPEG version of its *Man Enough* dating game. *Video Toys Software* has encoded its *Matinee* screensaver in MPEG. And more ReelMagic games are under development



The upgraded *Matinee* screen-saver uses full-screen video.

from entertainment producers such as *Intellimedia Sports*, *Opi-Vision*, *Psygnosis*, and *Velocity*.

Philips CD-i Commits to MPEG

While PCs get the most attention, full-motion digital video is most advanced on Philips's CD-i set-top gaming console. The company shipped an MPEG-based Digital Video cartridge for its players this spring, and it has moved aggressively to release MPEG games and multimedia titles, as well as digital movies and music videos. As CD-i's base technology is overtaken by newer competitors like 3DO and CD³², MPEG digital video is becoming critical to Philips's marketing pitch.

The company actively supports digital video, and far more full-motion games, multimedia titles, and movies are available for CD-i than for any other format. Four to five new CD-i digital video titles are coming out every week.

Look for digital video to enhance the graphics in *Phillips's Caesar's World of Boxing*

and bring a new level of realism to the venerable Mad Dog McCree from American Laser Games. This version looks just as good as the original arcade shoot-'em-up. A digital video CD-i release of Trilobyte's 7th Guest is also on tap, along with LucasArts' Rebel Assault.

But while games remain important to CD-i, Philips is concentrating on mainstream entertainment. The company has signed deals with Paramount and MGM/UA to release more than 80 movies in the new format this year. Already, a couple of dozen movies are on the market, including *Apocalypse Now*, *Black Rain*, *Fatal Attraction*, *The Firm*, *The Hunt for Red October*, *Indecent Proposal*, *The Naked Gun 2 1/2: The Smell*



Playboy's Complete Massage uses MPEG to deliver great-looking CD-i video.

of *Fear*, *Patriot Games*, *Posse*, *Sliver*, *Star Trek VI: The Undiscovered Country*, *Top Gun*, and *White Christmas*. Music-video titles include "Bon Jovi: Keep The Faith," "Bryan Adams: Waking Up The Neighbors," "Eric Clapton: The Cream of Clapton," and "Sting: Ten Summoner's Tales."

Somewhere between games and movies lie digital video titles such as Total Vision's *Titanic*, which documents the fatal maiden voyage of the supposedly unsinkable ocean liner. Patrick Stewart from "Star Trek: The Next Generation," narrates. Titles geared to other tastes include *The Joy of Sex* and *Playboy's Complete Massage*. Philips is also working on a variety of even more adult-oriented CD-i titles using the Digital Video cartridge. The company has signed a deal with erotica producer Vivid Interactive and is already working on a strip poker game.

Originally, the CD-i Digital Video format was nonstandard, not the pure MPEG Video CD format endorsed by most vendors in mid-1993. But since it represented the lion's share of CD-based movies, makers of other MPEG hardware were supporting the CD-i movie format. Sigma Designs recently announced an upgrade path to the ReelMagic card that lets PCs play CD-i format movies. Now Philips has switched to a standard MPEG approach with all the movie titles to be released early summer.

Macintosh Still Stuck on Software
Back in 1991 Apple set the standard for the software-based QuickTime video file format. And with a high-speed Macintosh, or one of the new PowerPC machines, QuickTime can deliver higher resolution, larger video windows, and faster frame rates than ever before. The result is performance that can be

quite respectable, if not up to MPEG standards.

That's fortunate, since the Mac is behind the curve in implementing MPEG. That should change late this summer or early fall, when Radius, a major third-party vendor of Mac hardware, introduces a ReelMagic card for the Mac based on technology licensed from Sigma Designs. The product—to be sold under both the Radius and ReelMagic names—is said to include software designed to let MPEG-equipped Macs play software developed for MPEG PCs. Prices are expected to run \$500 to \$800.

You can look for more Mac MPEG boards and software to appear later this year. A Mountain View, California, company called Wired for example, is already selling developers a \$2,500 MPEG decompression board that works with the Mac's NuBus. Wired is negotiating with large board manufacturers to create a consumer version, which would sell for \$600 to \$700.

To ease the transition to hardware-assisted video, Apple has announced that QuickTime 2.0 will directly support the MPEG file format. This will make it easy for developers to transfer their QuickTime-based titles to MPEG.

And rumors are circulating that as-yet-unannounced Macs will have video-decoding hardware built in. If those rumors are true, Apple may be the first company to make digital video a true standard component of computers.

3DO Does It Hard and Soft

The introduction of the 3DO format last fall generated intense interest. The 3DO format

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The Joy of Sex on CD-i is enhanced with the joy of full-motion video.

uses a powerful main processor bolstered with a pair of dedicated graphics chips to deliver impressive video performance.

Using Cinepak software video, 3DO machines can play reasonably detailed video covering the full screen at a frame rate fast enough to satisfy many users—up to 15 to 20 frames per second, depending on how the video is produced. However, there are still some compromises on image quality. In the worst cases, the video looks just plain chunky and low resolution. That's why even 3DO is investing in MPEG technology, with a hardware add-on due out soon.

Of course, the technology doesn't mean a thing without the games and multimedia titles to back it up. So American Laser Games, for example, plans to ship MPEG versions of *Mad Dog McCree* and the new *Who Shot Johnny Rock?* for 3DO. Look for ReadySoft to come out with a 3DO MPEG version of *Dragon's Lair*, since the company already makes versions for MPEG PCs and standard 3DO machines. And gaming giant and 3DO investor Electronic Arts is expected to use MPEG video in both *Shockwave*, a space-based shoot-'em-up, and *Road Rash*, a hot motorcycle racing game.

The Advent of CD³²

Commodore's Amiga line of computers set video benchmarks when they were introduced in 1985, and much of the Amiga technology is incorporated into the \$400 CD³² game console.

The Amiga has always supported full-screen animation,

and with the addition of a \$250 MPEG module, CD³² is capable of playing full-motion digital video in multiple formats, including its own software-based CDXL video sequences, standard Video CD, and CD-i Digital Video. Careful testing showed no problem playing CD-i movie titles on a properly equipped CD³².

The availability of proprietary software remains a problem, though.



game titles specific to the CD³² system were available. Several games are reportedly under development in Europe, including a football game with extensive sequences in full-motion video.

CD³² is already widely available in Europe and Canada, and as its U.S. introduction ramps up, its MPEG capability is expected to receive support from new titles, including *Psychosis's Microcosm*.

A Full-Motion Future

Despite the incredible number of options, this is just the beginning of real video in games. Game players are some of the most demanding users in the world, and right now they're demanding better video and graphics. Hardware makers and software developers are scrambling to give it to them. Faster com-

Shockwave for 3DO will use full-motion video to set up its action sequences.

puters based on the Pentium and PowerPC chips will make software-based video solutions more acceptable. At the same time, MPEG solutions will get cheaper and more numerous. Within a year or two, look for MPEG capability to be included on multifunction sound cards, on VGA controller cards, or even on the motherboard, removing the need for separate video and sound cards.

Most observers agree that MPEG offers the video quality to pull off this radical transformation. The key to when, and whether, it happens is the software. For MPEG to catch on, movie studios and game and multimedia developers must release games and titles that support it. Available software will spur more hardware sales, creating an even more attractive software market.

Once a critical mass is reached, probably in a couple of years, digital video technology will become as pervasive, and invisible, as VHS. You'll simply rent or buy a movie, game, or multimedia title, and play it on whatever type of computer or set-top box you might have.

The combination of TV-quality video and no-brainer compatibility is the key to expanding games and multimedia beyond an avid but limited group of aficionados. Despite vast improvements in game graphics, to the casual observer today's games still look like cheesy cartoons. Most people won't be interested in playing along until they see games and titles that approach the visual quality of the TV shows they're used to watching. With the arrival of MPEG for computers and set-top boxes, that's exactly what they'll get.



Lou Wallace is editor in chief of Digital Video magazine, a multi-platform magazine focused on the convergence of video and computer technologies.



THE COMPUTER VIDEO STORE

The Hardware

CD-I (Philips Consumer Electronics; 800-824-2567; CD-I players, \$399-\$499; CD-I Digital Video Cartridge, \$249)

CD³² (Commodore Business Machines; 215-431-9100; \$399; MPEG Module, \$249)

Dell Dimension XPS P60 (Dell Computer; 800-289-3355; \$2,999)

Real 3D Interactive Multiplayer (Panasonic; 800-732-5330; \$499)

ReelMagic (Sigma Designs; 800-494-8848; PC, \$449)

ReelMagic CD-ROM Upgrade Kit (Sigma Designs; 800-494-8848; PC, \$849)

ReelMagic Lite (Sigma Designs; 800-494-8848; PC, \$349)

Mark III Cybervision and Hypervision Multimedia Upgrade Kits (Smart and Friendly; 800-366-6001; PC, price varies according to CD-ROM drive speed and buffer size)

The Software

NOTE: Many of these titles require MPEG hardware to run or to display optimal video quality.

Americana (Aris Entertainment; 310-821-0234; CD for Windows, \$29.95)

Animal Kingdom (Aris Entertainment; 310-821-0234; CD for Windows, \$29.95)

Caesar's World of Boxing (Philips Media Games; 800-824-2567; CD-I, \$49.98)

Compton's Interactive Encyclopedia (Compton's New Media; 800-862-2206; CD for DOS, \$149)

Dragon's Lair (ReadySoft; 905-731-4175; CD for DOS/Mac/3DO/Sega, \$69.95)

The 11th Hour (Virgin Interactive; 800-874-4607; CD for DOS, \$99.99)

The Joy of Sex (Philips Media Home Entertainment; 800-824-2567; CD-I, \$49.98)

Learning Fly Fishing (EE Multimedia Productions; 801-973-0081; CD for DOS, \$24.95)

Lord of the Rings Enhanced CD-ROM (Interplay Productions; 800-969-4263; CD for DOS, \$64.95)

Mad Dog McCree (American Laser Games;

800-863-0234; CD for DOS/3DO/CD-I, \$59.95; CD for Sega, \$54.98)

Man Enough (Tsunami Media; 800-644-9283; CD for DOS, \$79.95)

Matinee (Video Toys Software; 800-386-4772; CD for DOS, \$59.95)

Mozart Visits Hawaii, Mozart Visits the Grand Canyon, Mozart Visits Yellowstone, and Mozart Visits Yosemite, (EE Multimedia Productions; 801-973-0081; CD for DOS, \$24.95 each).

MPC Wizard (Aris Entertainment; 310-821-0234; CD for Windows, \$14.95)

The Nature of Hunting (EE Multimedia Productions; 801-973-0081; CD for Windows, \$24.95)

New York, N.Y. (Aris Entertainment; 310-821-0234; CD for Windows, \$29.95)

Playboy's Massage (Philips Media Home Entertainment; 800-824-2567; CD-I, \$39.98)

Police Quest 4: Open Season (Sierra On-Line; 800-743-7729; CD for DOS, \$59.95)

Return to Zork (Activision; 800-477-3650; CD for DOS/Mac, \$79.95)

Road Rash (Electronic Arts; 800-245-4525; 3DO, \$69.95)

Shockwave (Electronic Arts; 800-245-4525; 3DO, \$69.95)

Space Ace (ReadySoft; 905-731-4175; CD for DOS/Mac/3DO/Sega, \$59.95-\$69.95)

The Sporting News Pro Football Guide (Compton's New Media; 800-862-2206; CD for DOS, \$39.95)

Titanic (Total Vision; 800-824-2567; CD-I, price not available)

20th Century Video Almanac (The Software Toolworks; 800-634-6850; CD for DOS, \$49.95)

Video Cube (Aris Entertainment; 310-821-0234; CD for Windows, \$29.95)

Who Shot Johnny Rock? (American Laser Games; 800-863-4263; CD for DOS/3DO/Sega, \$59.95)

WorldView (Aris Entertainment; 310-821-0234; CD for Windows, \$39.95)

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BY JOHN ENDERS

JASON HERVEY has come a long way since his first acting gig in a ketchup commercial at age 4½. As a teen-ager, he hit the big time as Wayne, the nasty older brother in TV's "The Wonder Years." But now, at 22, his latest acting role isn't on TV, it's on the PC. Hervey is currently starring as the evil Troll Leader in Activision's *Return to Zork*.

"It is different than the usual stuff that I've done, by a long shot," Hervey says. "For each scene we filmed about ten different endings. Everything was shot with variations. Every ending had another ending. It was very cool, very neat."

The process has Hervey pumped on new technology and video games. He plays a Sega Genesis at home and CD-ROMs on a Mac Quadra AV at the office. Even more important, as part of his first job directing a feature film, he and producer Alan Mruvka plan to spin off a 3DO and CD-i game from the movie, to be called *Gatorface*. "I would kind of like to think that I



Eileen Weisinger in *Critical Path*



Sylvester Stallone in *Demolition Man*



Jason Hervey in *Return to Zork*



Margot Kidder in *Under a Killing Moon*

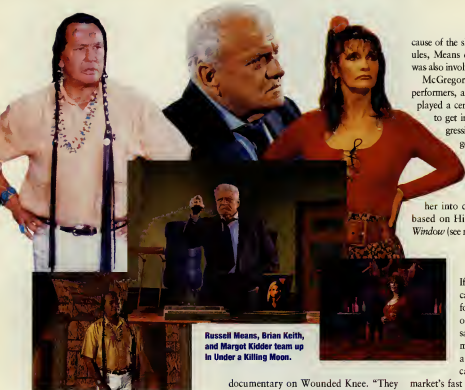
Today's latest
computer
games fill the
screen with
real actors.

am getting in on the ground floor of interactive software," Hervey says.

Plenty of other actors would like to think that, too. Sylvester Stallone and Wesley Snipes filmed extra footage for Virgin Interactive's 3DO version of the movie *Demolition Man*. The game is due out this month. Virgin also has produced *Conspiracy*, with Donald Sutherland as a former KGB agent who fights evil, corruption, and lies during the final days of the Soviet Union. (see review in May, page 108)

Former Blondie rocker Deborah Harry stars in *Double Switch*, a mystery game for Sega CD (see review in May, page 80). And the CD-ROM version of *Gabriel Knight: Sins of the Fathers* features the voices of Tim Curry, Mark Hamill, Michael Dorn and Efrem Zimbalist, Jr. (see review in April, page 101).

In addition to the big names, there's any number of ambitious stunt people and star-struck regional theater actors champing at the cinematic bit to get jobs in this new medium.



Russell Means, Brian Keith, and Margot Kidder team up in *Under a Killing Moon*.

Power Trio

Brian Keith (*The Parent Trap*, "Hardcastle & McCormick") Margot Kidder (*Superman I and II*) and Russell Means (*The Last of the Mohicans*) teamed up in *Under a Killing Moon*, from Utah-based Access Software. This game features 90 minutes of video action on CD-ROM.

The game producers "were flabbergasted at the difference between using models and amateurs versus professional actors," says Means, an American Indian Movement activist, writer, and soon-to-be producer of a

documentary on Wounded Knee. "They were overjoyed."

The producers were also surprised to find the actors were technologically savvy. "Brian was the only one who didn't know anything about computers. He was just blown away," says Catrine McGregor, the L.A. casting director who got this group together. For her part, Kidder once dated a drummer for the Grateful Dead who introduced her to NASA-developed virtual reality technology when the band started experimenting with it. And Means had been a computer programmer back when mainframes were the size of 18-wheelers, so he had no problem with the technology.

For Means himself, the experience was unusual, to say the least. Be-

cause of the shooting techniques and schedules, Means didn't even know that Keith was also involved in the project.

McGregor had worked with all three performers, and her personal relationships played a central role in convincing them to get involved with the project. Aggressive agents are often the key to getting reluctant actors to try something new. Grace Zabriskie, Laura Palmer's mother in "Twin Peaks," credits her agent for "badgering" her into doing *Voyeur*, a CD-i game based on Hitchcock's classic film *Rear Window* (see review, April, page 63).

Crusading Agents

If it's not a crusading agent, the catalyst may be the simple quest for exposure. The newly developing medium, fired by hot sales of video games and multimedia, can be a big break for a beginning—or a stumbling—career. But so far, despite the market's fast growth and heavy hype, the multimedia troupe still includes just a handful of well-known actors.

Hollywood producers, agents, and directors say many actors are worried that the games will make them look silly, stupid, or wooden. Yet as the technology improves and the central characters of games evolve from Sonic the Hedgehog to The 7th Guest's Henry Stauf, more actors are opening their eyes to the fact that real movie action is taking over computer games.

But even some of those getting involved remain wary. Robert Culp of "I Spy" also appeared in *Voyeur*, making him one of the first name actors to work in a game. But Culp backed out of a scheduled interview regarding his experiences. Word is that Culp thinks the medium is still "primitive" and doesn't want to be viewed as promoting it. So if somebody like Culp, who has a reputation for being

Sylvester Stallone and Wesley Snipes star in the game version of *Demolition Man*.



PHOTOGRAPH BY ANCKER COVER



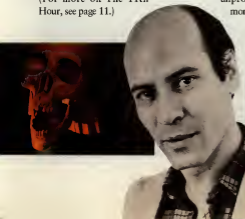
Donald Sutherland makes his game debut in Conspiracy.

something of a Renaissance man, is in the genre but won't promote it, who will?

Veteran film critic Roger Ebert says actors needn't be so nervous. Although Ebert believes interactive entertainment will never match the charm of traditional movies, he says those actors taking the plunge into games "are like the first stage actors who ventured into film, radio, and TV. They are in at the beginning of something new. The actors doing this merit praise."

Impressive Credits

For now, most of that praise will go to little-known performers, though many boast impressive stage and screen credits. One of multimedia's new stars is Robert Hirschboeck, a veteran of Oregon Shakespeare Festival stage productions, who plays the evil mansion owner Henry Stauf in Trilobyte/Virgin's best-selling *The 7th Guest* and *The 11th Hour*. (For more on *The 11th Hour*, see page 11.)



To gamers, Hirschboeck is now famous, and even among his neighbors in Ashland, Oregon, he's better known. "I'll be walking down the street and meet someone with all the CD-ROM gear and they'll say, 'Ah, man, I've been looking at your ugly mug for 60 hours this week,'" Hirschboeck says. He likes the attention, but he's a little ambivalent about seeing his image morphed strangely, like when his tongue wraps around a hapless victim or his head turns into different shapes. But even in the most traditional of screen work, Hirschboeck notes, only the biggest names in the business have much control over

things like script supervision and visual-effects editing.

Or take Annalee Jefferies, who plays Dr. Elizabeth Marks in *Quantum Gate*, a Hyperbole Studios game that hit stores



Annalee Jefferies was worried about how she'd look in *Quantum Gate*.

enough work to go around," he says.

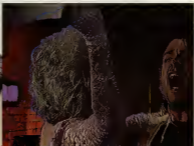
Niche Busters

Games also offer new options for actors like Hervey and Kirk Cameron, child star of the ABC series "Growing Pains." Both are talented but niched teen idols looking for something to do in the adult world. Now 23, Cameron plays Chauncey, the lead character in Crystal Dynamics' *The Horde*, an action/strategy game for CD-ROM and 3DO. When "Growing Pains" ended its seven-year run a couple of years ago, the obvious question for Cameron was: "What's next?"

Cameron calls his move into gaming "a smart business decision." He says: "The blending of film and video

last winter. Shortly after it was released, Jefferies had to walk into a computer store in Houston and ask the staff if she could use a CD-ROM drive to play the game. "I was horrified [that I might have appeared unprofessional]," she says. It had been months since Hyperbole shot the game, and Jefferies had no idea how it had turned out.

7th Guest and 11th Hour are making Robert Hirschboeck famous.





games—it's still in its infancy. That's the excitement of taking the risk, of getting in on the ground level." Came-



Kirk Cameron gets over his "Growing Pains" in *The Horde*.

ron is working on a pilot for a new family comedy television series, but he also plans to pursue other game projects.

"From a career standpoint, it is a good idea," agrees Cameron's agent, United Talent Agency's Robert Stein. "It builds an audience." The hope is that as gamers now in their teens or twenties grow older, they will want to go see movies starring Kirk Cameron.

Agents say the game genre holds the possibility of expanding, or recapturing, an audience. "Say, just for example, you're Arnold Schwarzenegger," says Stein. "You're 50 years old and getting grayer. You ask yourself: 'How do I create longevity?' How does an older Terminator continue to appeal to 18-to-24-year-olds? Video games! 'You're building your audience base, your constituency base, by going to younger people,'" Stein says.

Breaking In

Because many games are so action oriented, their stars don't need to be Charlton Heston or Elizabeth Taylor to make the experience work. Consider Eileen Weisinger, a 25-year-old, 110-pound, 5-foot, 4-inch stuntwoman

who stars as Kat in *Critical Path*, an adventure game developed by Mechadeus and distributed by Media Vision.

Weisinger studied acting and theater while growing up in New York, then got interested in gymnastics and athletics, partly, she says, because of the huge number of actors lining up for parts on and off Broadway. Six years ago she moved to San Francisco and began studying stunt work under Rocky Capella, who runs the

San Francisco Bay Area Stuntman's Association. She's appeared in *Basic Instinct* and on television, specializing in fights, falls, vehicle crashes, sword-fighting, rappelling, and tumbling. In *Critical Path*, her acting background came in handy. But the stuntwork was even more important.

When Mechadeus went looking for an actress who could defend herself, Capella suggested Weisinger.

"It is definitely the most interesting part I've had. And the most challenging," Weisinger says. Most games are shot against blank blue backgrounds where the special-effects wizards later place the science-fiction sets. "You put someone in a blue room and

A NEW DIRECTION

Robert Weaver has directed more interactive video games with significant acting roles than just about anybody else in the business. He knows how the new medium works, how different it is from traditional movies and television, and how much alike.

Weaver's list of credits in the new genre include *Voyeur* and *The Horde*, and he's now working on *Thunder in Paradise*, a new game from Baywatch Productions. The CD-i title will be a spin-off of a new TV series of the same name, featuring model Carol Alt, wrestler Hulk Hogan, and Chris Lemmon, Jack's son.

"I love it. It just sounds like all sorts of fun," says Lemmon. "We're blazing new trails all over the place." A writer and musician, Lemmon says he might even have to break down and replace his aging Mac with a machine that runs CD-ROMs.

The producers plan to ship the game for Christmas, in conjunction with one of the year's final episodes. *Thunder* will be the first time a computer game release has been timed to coincide with a TV episode.

That takes a lot of coordination. Video clips for the game must be shot months before the TV episode, so graphics and computer programmers will have time to render the game's scenes. And that's not all. Weaver notes that the perspective of the viewer/player is different in a game than on a TV show. That requires the director to shoot each scene with different objectives in mind.

In the game, Weaver says, "You are being asked to play a role as one of the characters in the show. This will allow the player to 'jump into the character, shoot the bad guys, and rescue the girl,'" he says.

Weaver is a natural for this two-way genre: A former actor (CBS's "Top of the Hill" and "Greatest American Hero"), he also has a background in music, including postproduction audio for film and television. Eventually he migrated

to MIDI synthesizer interface technology, though computers have been mostly a hobby. "When video game technology started to move in the direction of real video, as opposed to graphic displays, it birthed a need for people who [could straddle] both sides of the fence," he says. In the end, though, he says the basic job remains the same. "As directors, we are still concerned about whether the character is there. And is it a good story?"

—John Enders



Chris Lemmon, Carol Alt, and Hulk Hogan make *Thunder in Paradise*.



Robert Weaver

give them rough sketches. You have to stay within boundaries and lines that don't exist," says Weisinger. Though she's still working in a bar in the Marina district of San Francisco to pay the bills, she now has her eyes set on being a queen of interactive adventure. "I am refining and developing my acting skills again," she says. "I see a big area that's going to grow: an adventure actor who is going to be needed in this industry. I see a whole new medium opening up for the trained stunt actress."

The Bottom Line

That's great for Weisinger, but why is it mostly stone-faced stuntmen, former teen stars, and dinner-theater hacks who are lining up for this new medium? Where is the Julia Roberts or Denzel Washington of this budding new interactive gaming industry?

Not surprisingly, the issue is money. Top-drawer actors demand humongous salaries, often several million dollars a pop. So when the entire production budget of a computer game is, say, \$1 million, there's no line item to handle a Tom Hanks. Trilobyte creative director Rob Landeros says the company spent about 20 percent of *The 11th Hour's* production budget on actors and filming.

"You're not going to get Jack Nicholson to do these things [on that kind of a budget]," explains David Wheeler, director of *The 11th Hour* and an Emmy award-winning Hollywood player. "Right now, nobody is putting out the kind of money for productions that you would need to get top-money actors," he says.

Trilobyte originally sought Vincent Price to do voice-overs for the new game, says Landeros. He was not available. The company wanted a top Hollywood feature film director, but couldn't get his phone calls returned. "We wanted to see if they were interested. They were not," Landeros says. That may change when smash hit games begin to earn \$20 million or more, but it won't happen overnight, Wheeler adds.

In the meantime, Trilobyte is giving actors in *The 11th Hour* a cut of the profits as well as a salary. In most

THE CREDITS

The 7th Guest and The 11th Hour, starring Robert Hirschboeck (Trilobyte/Virgin, 800-874-4607; CD for Mac (7th Guest only), CD for DOS, \$99.99 each)

Conspiracy, starring Donald Sutherland (Virgin Interactive Entertainment; 800-874-4607; CD for DOS, \$74.99)

Critical Path, starring Eileen Weisinger (Media Vision; 800-845-5870; CD for DOS, \$79.95)

Demolition Man, starring Sylvester Stallone and Wesley Snipes (Virgin Interactive Entertainment; 800-874-4607; 3DO, price not available)

The Horde, starring Kirk Cameron (Crystal Dynamics; 415-473-3443; CD for DOS, DOS, 3DO, \$59.99)

Quantum Gate and Quantum Gate II: The Gates of Dreaming, starring Annalee Jefferies (Hyperbole Studios/Media Vision; 800-345-5870; CD for Windows, \$79.95)

Return to Zork, starring Jason Hervey (Activision; 800-477-3650; CD for DOS, \$79.95)

Thunder in Paradise, starring Hulk Hogan, Chris Lemmon and Carol Alt (Philips Interactive Media, 800-845-7310; CD-i, price not available)

Under a Killing Moon, starring Brian Keith, Margot Kidder, and Russel Means (Access Software; 800-800-4880; CD for DOS, \$79)

Voyeur, starring Robert Culp and Grace Zabriskie (Philips Interactive Media; 800-845-7310; CD-i, \$49.98)

games, actors have been forced to settle for Screen Actor's Guild minimums, but as best-selling games like *The 7th Guest* make millions, the talent is demanding a bigger piece of the pie.


One result is the recent agreement between giant game maker Electronic Arts and the American Federation of Television and Radio Artists (AFTRA).

The deal calls for a minimum

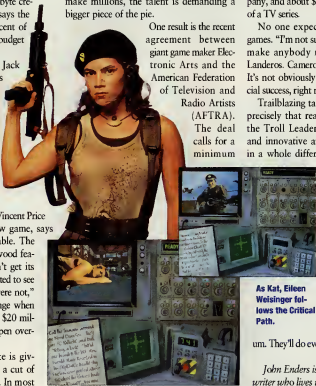
salary of \$485 per day for talent appearing in EA games. That compares to \$30,000 to \$40,000 a year for a player in a theater company, and about \$200,000 a year for the star of a TV series.

No one expects a quick payoff from games. "I'm not sure this medium is going to make anybody rich and famous," says Landeros. Cameron agrees: "It's brand new. It's not obviously and blatantly a commercial success, right now."

Trailblazing talent is coming aboard for precisely that reason. Says Jason Hervey, the Troll Leader: "Anything that's new and innovative and supports what we do in a whole different spectrum—I support that wholeheartedly."

Beyond the household names of course, computer game developers have no trouble hiring actors. As AFTRA's Dick Moore puts it, "Actors today—unless they are at the very top rank of the profession in terms of stardom and earning capacity—they've worked in every medium. They'll do everything. They have to." 

John Enders is a journalist and free-lance writer who lives in southern Oregon.



As Kat, Eileen Weisinger follows the Critical Path.

The Machine Behind

*Silicon Graphics
doesn't make the
games you play.
It makes the games
you play better.*

The Scenes

By Rafael DeMantia

WHAT'S THE BIGGEST NAME in the computer game industry—LucasArts? Interplay? Electronic Arts? How about Silicon Graphics?

SGI doesn't develop computer games or sell gaming systems, but it does make the powerful graphics workstation that's revolutionizing computer game design.

SGI workstations are powered by the company's own RISC (reduced instruction set computing) processors. That processing muscle makes Silicon Graphics workstations the best bet for handling 3-D graphics pivotal to computer game design. Running 3-D modeling and rendering software like programs by Soft Image and Wavefront, or 3-D animation software such as Alias PowerAnimator, game developers can create entire imaginary worlds. (For a look at how designers created games in the old days see "Graph-paper Games" on page 66.)

Of course, other hardware platforms will run 3-D graphics software, too. The graphics for *The 7th Guest*, for example, were produced on DOS machines, while *Myst* was rendered on Macintosh computers. But more and more game developers are moving toward SGI workstations.

Who's using them? Sega of America created the dinosaurs for its *Jurassic Park* CD and cartridge games on SGI systems. Electronic Arts uses SGI machines to

run its multimedia lab. And new companies like Rocket Science and long-established ones like Interplay, Origin, and Spectrum Holobyte all use SGI systems to build their games.

While SGI machines are only now being fully utilized by game makers, they're nothing new to TV and the movies. Special-effects houses like Industrial Light & Magic and Rhythm & Hues used SGI workstations to create everything from *Terminator 2*'s liquid-metal morphing to memorable commercials such as the Bud Bowls and those Coke-drinking polar bears.

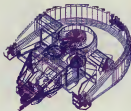
And Silicon Graphics systems aren't just for games, movies, and TV. They're also behind destination-based virtual reality rides and even fine art (see "Gil Bruehl Graphic Art" on page 64). And the core chip technology of a Silicon Graphics machine could even appear in your home sometime next year: Nintendo is hooking up with SGI to create its next-generation Project Reality gaming system. Time Warner also plans to use SGI technology in its new set-top cable boxes.

Whether you play

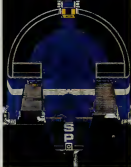
games created on a Silicon Graphics workstation or actually use SGI technology yourself, these megamachines definitely mean better-looking graphics. Take a peek.



Silicon Graphics' Onyx RealityEngine²



1 At game startup Rocket Science in Palo Alto, California, models start as a detailed hand-drawn concept image. Rocket Science then uses SGI hardware running Soft Image to recreate the model in a wire-frame rendering like this Toaster police vehicle from its upcoming game Loadstar.



2 Next, technicians create texture maps like these two in Adobe Photoshop, and apply them to the wire-frame model.



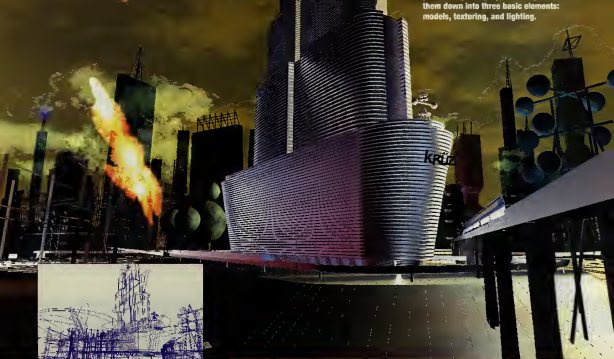
3 The final rendering combines all the textures with the wire-frame model and adds lighting effects.



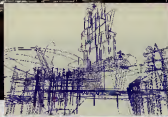
4 What's a police Toaster without some special effects? The technicians use Soft Image to create some nifty explosions, too.

Rocket Science's Loadstar

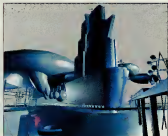
Interplay's Cyberhood



1 Interplay worked with Moving Pixels, a 3-D-design company, to create the images for its upcoming game, *Cyberhood*. Moving Pixels used Alias PowerAnimator running on an SGI Indigo Elan workstation to do the job. Starting with storyboards provided by Interplay, the designers break them down into three basic elements: models, texturing, and lighting.



2 After analyzing such factors as proportions of the objects within the frame and perspectives, the Moving Pixels team creates wire-frame models of the images, like this one of the Kruz Building.



3 Next the designers interpolate views of the model from different angles. Then they create the texture map to apply to the image, in this case a brushed metallic finish. Finally, they adjust the lighting of the texture. To preview their work, the designers create a quick rendering of the image.

Power at a Price

So you think you'd like to try your hand at designing a supercool computer game? Before you get too excited, keep in mind that a Silicon Graphics workstation will set you back some serious cash.

At the low end of the scale is Silicon Graphics' Indy, a souped-up desktop system used primarily for computer-aided design, photo processing, and media authoring. Indy prices start at about \$5000 and run up to more than \$20,000. Next step up is the Indigo², which will cost you something in the neighborhood of \$21,000 to \$50,000. The Indigo² is primarily used for 3-D solid modeling and animation.

If you're really serious about having the best graphical performance money can buy, you'll need an SGI Onyx graphics supercomputer. That's what companies including Magic Edge,

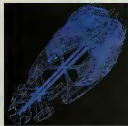
GreyStone, and Edison Brothers (all creators of location-based entertainment) use. Spectrum Holobyte is using its Onyx RealityEngines² machines to create virtual-reality rides and attractions for shopping malls and amusement parks. Real-time VR demands incredible processing power, and the RealityEngine² delivers it.

The Onyx comes in many flavors and configurations, beginning at \$128,000 for a system with two CPUs and breaking \$500,000 for a top-of-the-line 24-CPU Onyx RealityEngine² system. SGI also offers the RealityEngine in a lower-end system called the Iris Crimson, which costs between \$34,000 and \$111,000.

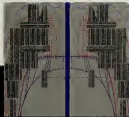


Silicon Graphics workstations don't come cheap.

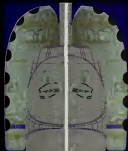
Spectrum Holobyte's Star Trek



2 Spectrum Holobyte also used Alias PowerAnimator to create images for The Next Generation game. First, the designers create wire-frame models, such as this one of the lab station.

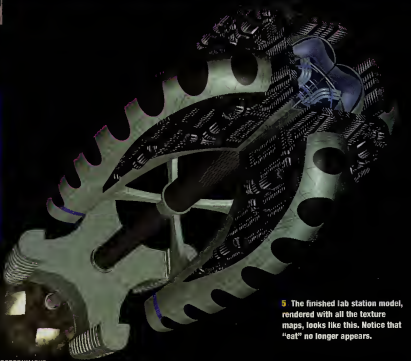
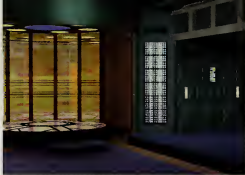


3 Next, the designers apply texture maps, such as the one above, to the wire-frame model of the lab station.



4 This is another texture map made to wrap around the wire-frame of the lab station. The word "eat" on the texture map is an artist's joke and won't show up on the final rendering.

1 These finished renderings are from Spectrum Holobyte's new Star Trek: The Next Generation game. These images of the Enterprise bridge and the transporter room were created on SGI systems running Wavefront software.



5 The finished lab station model, rendered with all the texture maps, looks like this. Notice that "eat" no longer appears.



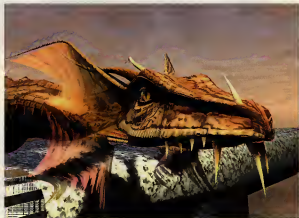
Crystal Dynamics artists used Alias PowerAnimator running on SGI systems to create these images from the upcoming 300 version of *Star Control II*, the space-exploration game.



Crystal Dynamics' *Star Control II*



Well-known computer-game artist Cyrus Lum created this stunning image on an SGI system running Alias PowerAnimator. Will this dragon ever make it into a game we can play? Only Lum and Crystal Dynamics know for sure.



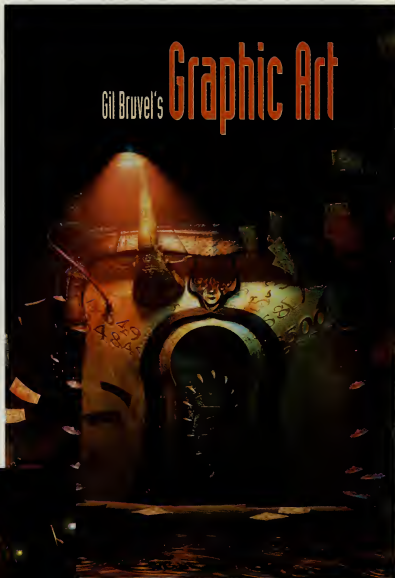
Graph-Paper Games

Today's game-design process is quite an eye-ful, but before the days of 3-D graphics systems, developers took a much less glamorous route. Picture this:

A lonely computer-game programmer stays up late into the night poking numbers into memory locations using the esoteric command set of assembly language or BASIC. His eyes continually stray back to the graph paper and the crude shape drawn on it.

The results usually consisted of little more than stick figures or general outlines of what the developer imagined. Remember the look of games like *Space Invaders*, *Mystery House*, and the original *Ultima*?

Even with these primitive graphics, it took about nine months to produce a game from start to finish. It generally takes even longer to create a quality game today, despite the vastly improved tools. That's because standards are so much higher. As fast as the technology improves, developers push it even further looking for newer, better effects for their games.



Gil Bruvel's Graphic Art

Origin's Wing Commander 3

Origin artists used SGI systems running Alias PowerAnimator to create these scenes as backgrounds for *Wing Commander 3*, due out late this year.



Silicon Graphics computers aren't just used to create digital effects for games, movies, and television. Internationally-acclaimed artist Gil Bruvel has begun to use SGI systems to debble in the digital. Bruvel sees a whole new world of expression in 3-D digital artwork, which he displays both as fine-art prints and in animations.

"Computers can compute very complex geometry that would be difficult to do any other way. This is where it becomes a unique tool and means of expression by itself. There is no other tool that provides these kinds of possibilities with this much power," Bruvel says. "That is why I believe computer graphics is revolutionizing our visual perception of the world. For the 'fine artist' it is bringing about a new wave and level of creativity in the art world. Nevertheless, I do not care for the term 'computer artist', simply because computers do not create for you."

The power and speed of SGI systems will allow fine artists to use a graphics tablet, not a paintbrush, to create masterpieces—if they can afford the price of the technology.



The ABC's of 3-D

Computer 3-D modeling and rendering software has led to new techniques for achieving realistic (and even super-realistic) effects. Along with these new techniques comes a whole new lingo. Learn these terms and you'll be able to make small talk with your favorite game designer or just impress your friends. Watch out, though, they won't take you far at cocktail parties!

Modeling: Building a 3-D object in the virtual space of a computer program.

Rendering: The process of combining all the elements of a 3-D model into a finished image.

Shading: There are many different kinds:

Blinn: A smoothing method that creates an object with a metallic-looking finish.

Flat Shading: No texture; a quick way to look at the polygonal shape of an object or scene.

Giraud: This shading method smooths the image, reducing the tendency to "facet," or show the geometric surfaces of the model.

Phong: This shading method smooths textures to create objects with a plastic-like sheen.

Ray Tracing: Rendering an object or scene with realistic light physics so that the light from one or more sources causes reflections, refractions, and shadows.

Texture Map: In its simplest form, a texture map consists of a flat, two-dimensional image wrapped around a wireframe

model. Game developers apply texture maps during modeling and then render the model to see the results. Common texture maps include:

Basic: A basic texture map simply applies a 2-D image around the 3-D space of a model.

Bump Map: This special kind of texture map uses grayscale drawings to create a 3-D textured effect by varying lights and darks in the image. For instance, a lighter area of the texture map appears to be raised on the rendered model. Darker areas look recessed. The model remains the same, however—only the illusion of depth or texture is created.

Displacement Map: Similar to a bump map, displacement maps use variations of light and dark to actually deform the model during rendering. The original model remains unchanged, however.

Wire Frame: A representation of a 3-D model reduced to the lines that were used to create it. Think of a wire frame as the "skeleton" of a model.

Z-axis: The third direction for 3-D modelers. X is horizontal, Y is vertical, and Z is depth.

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Circle 103 on Reader Service Card



big fun

Little boxes

Beneath the Newton's tough business appearance lurks a neat little game platform.

Your flight was early and the limo hasn't arrived. You could cool your heels at the airport bar, maybe pace the newsstand one more time. Or you could whip out your handheld personal digital assistant (PDA) and have some fun. • Beneath the staid corporate countenance of PDAs like Apple's Newton MessagePad or Sharp's ExpertPad lurks a game machine just dying to bust out. So after your PDA has handled all your mundane business chores, what better way to relax than to load up a quick game of solitaire or fight your way out of an electronic maze? • If you've missed the Newton hype, think of it as a digital version of a DayTimer or Franklin Planner. Addresses, random notes, a to-do list—all are just a button click away. You can launch built-in applications or programs stored in the limited internal memory or on more sizable PCMCIA flash-memory cards, then write your notes on the screen with a stylus. The little black handheld box can even read your handwriting, if you write *v-e-r-y c-a-r-e-f-u-l-l-y*.



ILLUSTRATION BY DAVID WATERS

By Andy Eddy

Fortunately for gamers, Newton's developers weren't strictly business. The Newton even comes with a rudimentary game called CalliGrapher on the Getting Started card that ships with each model. It is primarily designed to help the Newton understand your handwriting. When you start the application, letters begin falling

toward the bottom of the play field. Your goal is to rewrite the word they form on the screen and have the Newton recognize it before the falling word hits something. If you're successful, the falling letters turn in to bombs and blow up some of the stacked objects down below. If not, the letters turn to objects that further clog the play field.

Better yet, there is a growing number of real games and other recreational applica-

tions now shipping for the Newton. From crossword puzzles to travel planners, from mystery games to a pretty decent Missile Command clone—it's all there.

A few warnings, though. The design of the Newton—monochrome display, lightweight sound output (necessary to keep down the size and weight), and stylus control with no ports for a joystick or control pad—affects the range of games you can play. Loading software can also be a bit tricky. While some games come

on instantly accessible PCMCIA flash-memory cards, most ship on floppy disk. Newtons don't have floppy drives, so you have to use the Connection Kit to transfer the data from a Mac or Windows computer. It's an extra step, but it's not hard. You just hook the machines together with the included AppleTalk cable and click a few software

buttons to get them talking. So let the games begin...

Puzzle/Strategy Games

It's easy to see why puzzle and strategy games are well represented on the Newton. Slower-paced and more cerebral games make sense for a machine with a touch screen that limits data-entry speed and an LCD screen that blurs when objects move too quickly.

Recognizing this, StarCore—Apple's new



Columbo's Mystery Capers serves up an old-fashioned whodunit.



Dell Crossword Puzzle is for the serious wordsmith.



Dall's other games offer linguistic slauthing.

the shareware connection: where to find it

Just as PC enthusiasts can access a wealth of shareware programs, owners of PDAs can tap into similar repositories. Since PDAs are so new and the supply of commercial software is still limited, shareware plays an even more important role.

Getting a hold of shareware PDA games is relatively easy. Online services such as CompuServe and America Online have created forums for PDA owners, so free or inexpensive software is just a phone call away. You can use your Newton modem to go online directly, but many Newton programs are archived online along with Readme files and

compressed (using Stuffit or Zip) to take up less file space. So you'll have to use your computer to grab the file, then work with the Newton Connection Kit for Mac or Windows to transfer the package to your Newton. One other thing: Be sure to support shareware developers by paying the modest fees they request. It's the best way to encourage programmers to write more applications.

If you're looking for good PDA stuff, delve into the following areas. Keep in mind, however, that online addresses often change without notice.

On **CompuServe**, type **GO PALMTOP**, which will take you to the Palmtop forum. This forum has noncommercial software and informative files (including press releases and demos)

available to Newton owners. To get to the Newton-specific forum, type **GO NEWTON**. Look for announcements and files concerning new products by typing **GO PENROSE**.

On **America Online**, use the keyword **PDA** to find the PDA forum. This forum offers software for Newtons and other handheld systems.

GENIE users won't find a single "roundtable" (RT) for PDA applications, but should instead look for Newton files in the Macintosh RT. Type **Mac** at any prompt.

Similarly, **Delphi** stores its Newton files in the Macintosh forum (**Go Com Mac**). Look for a PDA forum to turn up in the future.

If you have **Internet** access, you can find PDA software stored in various sites around the world. To get the most recent, simply do

an **ARCHIE** search for related files. If you can do **FTP** (file transfer protocol) communications over the Internet, the following U.S. locations often have Newton software. As with anything on the Net, they are subject to change at any time:

- bric-a-brac.apple.com/in/pie/newton
- gumby.dsd.trw.com/in/pub/macintosh/newton
- sumex-aim.stanford.edu/in/info-mac/nwt
- mercury.stat.wisc.edu/in/pub/newton

Be sure to check into the **comp.sys.newton.misc** and **comp.sys.newton.announce** newsgroups on Usenet, which are great sources for information on new products.

Finally, there is a free newsletter that covers PDAs. For a copy, send your name and address to PDA News, P.O. Box 142245, Austin, TX 78714-2245.

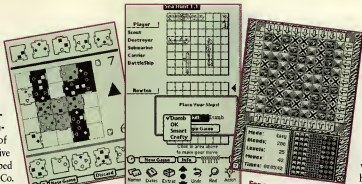
—Andy Eddy

publishing and distribution arm for Newton and CD-ROM products—jumped out of the blocks with **Columbo's Mystery Cases**. This series of more than 40 detective puzzlers was developed by Blank, Berlyn & Co. Game play is simple. Click objects on the screen to get clues that help you solve a crime. The harder the case, the more clues you must examine. Cases range in difficulty from one to five daggers, but even the medium-difficulty three-dagger scenarios can be killer. Each mystery takes from 5 to 15 minutes to complete, depending on your sleuthing skills and patience in sticking to a case before asking for the solution. The appearances by the sketchy Columbo are also a lot of fun, and they make a nice way to wrap up a case.

The same developer has also created an interesting set of crossword puzzles for the Newton. Unfortunately, **Dell Crossword Puzzles** is not nearly as successful as Columbo. The user interface is like that of any crossword puzzle, with an onscreen grid paired with across and down clues. There's a list of clues at the bottom that you can scroll through, but you can also click on a square to pop up the appropriate clue along with spaces that you can write letters into or you can draw a line along a row of squares to bring up the clue.

It sounds great, but getting the Newton to correctly recognize your letters can be a real pain. Worse, if there's anything stored in the Newton's internal memory, you may find that puzzles won't load or that previously filled-in sections are missing—that's really frustrating! You'll need to use your Connection Kit to load the game and some puzzle packs onto a flash card. The new Newton MessagePad 110, with more internal memory and improved handwriting recognition, should help alleviate those problems. Dell Crossword Puzzles includes more than 150 puzzles that come on disks in puzzle packs. They range in difficulty from medium to mind-bending.

If Dell Crossword Puzzles merely whets your appetite, check out the bigger and better **Dell Crossword Puzzles and Other Word Games**. This expanded version



Jigsaw features a wild twist on the classic Othello.

Seahunt lets you blow 'em out of the water.

For a real challenge, try Cogito.

includes hundreds of crosswords, word-search puzzles, and cryptograms. It comes on a flash card, so it's easier to load and use. Like the simpler version, it offers hints if you become stumped.

Words aren't the only way to have fun with your Newton. A bizarre game called **Mobile** resembles a loony mouse-in-a-maze experi-

ment. Professor Moe is captured in a walled-in area, and you must help him reach the goal, indicated by a star on the display. Trouble is, once Moe is released, he walks in a very peculiar way. For example, when he hits a single wall or walls that form a U shape, he'll turn 180 degrees.

To further complicate matters, each maze lets you place and remove a set number of walls. As you rise through more than 100 levels, the mazes begin to include one-way walls, transporters, disappearing and reappearing walls, moving goals, and a randomizer called diabolical mix. Mobile is also a race against the clock—as a timer starts once you click on a wall. You

Hidden Fun

Newton may be small, but it has a treasure trove of "easter eggs" buried in its operating code. These pointless little gems are good for a grin and for showing off to your friends. For example, hold the stylus on the clock icon at the bottom of the screen. After you get the date, time, and battery life, you'll get the Newton's internal temperature.

For other Newton eggs:

- Write "About Newton" on the screen, then tap the Assist icon. You'll get an un-interruptible "credit roll" of the Newton team, as well as a memorial to a team member who committed suicide during the project.

- Go to the Extras drawer and bring up the Time Zones program. Click on the Find

icon, then write "Elvis" in the box and click the Find button. Newton will tell you, "The King was last seen in..." and name a city. Click the Find button again for another sighting. Maybe the *National Enquirer* is right?

- Tap the Extras icon, then tap Prefs under Personal and set your country to Graceland (looks like the Newton people had a thing for Elvis). Now any time you

Newton starts up, the lightbulb logo will be replaced by a standing newt. Be careful with this one. Some say it can mess up your local area code.

- Insert the Getting Started card, and write "Schedule happy hour Friday (any day)." Highlight the whole entry and tap Assist.

When Newton is done figuring everything out, you'll have a one-hour meeting scheduled on that day with Apple Assurance, their service and support group. Not my idea of a happy hour!

- Reset your Newton by opening the battery lid and tapping the button. Then tap the Undo icon until an error box appears. With that error showing, click on the overview dot (located between the two arrows at the bottom), and select "Newton" from the list that's displayed. Finally, tap the Info button (the "I" in the circle). A date and time will pop up. If it doesn't ring any bells, it's the vital stats for the first walk on the moon!

One more thing. Somewhere in all that code is a love note from one of Newton's programmers to his fair lady. If you unearth it, let us know.

—Andy Eddy



WHO'S ZOOMIN' WHO?



The Newton isn't the only PDA in town, and there's some dispute whether it's the best. Some consider the Casio/Tandy Zoomer superior, although its sales have lagged behind those of the Newton.

The Zoomer has a lot going for it as a game machine, including Game Boy-like buttons and a control-pad rosette on the unit's face.

So, what's the problem?

Software. Or more specifically, a lack of it. A handful of games ship with the

Zoomer, but beyond that it's slim pickings.

Zoomer's first bundled game is a traditional Klondike solitaire card game. The second is a card game called Pyramid. Remove pairs of cards adding up to 13 from a "pyramid" of cards. You can remove kings by themselves, since they are the "13" card. Both Klondike and Pyramid are engaging and play with impressive speed and smoothness.

Uki, another bundled game, is better known as Othello. You place checkers on a grid and try to turn the other player's pieces to your color. Unfortunately, the computer is not a strong player, so

winning is easy. Beyond that, if you want to boost your Zoomer's amusement quotient, you have only one choice. GeoWorks' Quick Shuffle includes simple and speedy versions of blackjack, hearts, poker, and a game called Match Pairs that you'll remember as Concentration.

Zoomer's makers claim more games are in the works, but they don't provide details.

If you're



looking for Zoomer fun, you'll have to sit tight.

—Andy Eddy

start with three Moes, and passwords let you begin from any level you've already managed to reach. Simple in design, this game is a real challenge.

For a wild twist on the classic Othello, load up the **Jigsaw Strategy Game** from Pensée. You play a human opponent or the Newton; one side takes gray and the other takes black. The play field is a five-by-five grid. The players alternate placing interlocking jigsawlike pieces. Every piece bears a geometric shape along each playable side. Strategy enters the picture when you connect strings of matching geometric shapes, drastically changing the score on every turn. Games usually take about five or ten minutes. Jigsaw Strategy is so much fun that

I can't resist playing a game every time I pick up my Newton.

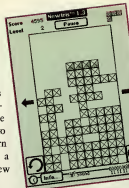
If your brain cells really need massaging, try **Cogito** by Atreid Concept—a Rubik's Cube-like teaser that challenges you to re-create a specific pattern on the screen. Click on an arrow at the end of a row to move the symbols into place. But don't get comfortable just yet. As you advance from level to level, things start changing. In higher

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levels, clicking on an arrow won't move the row you expect it to move. That's where your intuitive powers come in. It's up to you to discern the pattern and work out a strategy in as few moves as possible.

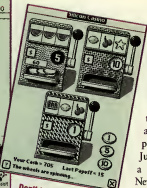
Developer Kendall Redburn of BugByte has faithfully re-created Battleship on the Newton in a shareware game called **Sea Hunt**. You place your five ships by drawing lines on your play-field grid to match the boat sizes. Then it's a race against the Newton as you alternate shots by clicking on the opponent's grid with your stylus. Sea Hunt lets you choose between four intelligence settings for the Newton. At higher levels, if it successfully bombs one of your ships, it's more likely to search around that area for another "hit."



Newtris! updates the old standby Tetris.



Incoming! simulates a furious nuclear attack.



Don't lose your shirt at the Silken Casino.

fast enough, making Newtris tougher and not as addictive as other versions of Tetris. Still, point-and-click is surprisingly fun. Just don't poke a hole in your Newton screen!

Gravity's Stephan Cleaves and Michael Dupuis have

Arcade/Action Games

created an ambitious Missile Command clone, also sold as shareware. For those who don't remember the arcade original, **Incoming!** makes you the protector of six cities arranged across the bottom of the screen. Missiles and smart bombs rain down from the top of the screen. They will waste your population if you don't destroy them first with your own defensive missiles. It's an improvement over the trackball-equipped Atari original, letting you use your stylus to place your missiles with pinpoint accuracy.

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The only thing it doesn't simulate is ear popping.

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The action comes fast and furious, and it's easy to get caught up in the battle.

Card and Board Games

With the Newton, you can scratch the gambling itch no matter where you are. Silicon Casino, from Macintosh game maker Casady & Greene, lets you battle the house in blackjack, craps, baccarat, slots, and video poker. Using your stylus, you can drag your \$200 stake to the bet line or coin slot. Your current bankroll, your peak total, and even the amount you've borrowed from the house are saved for future reference. A few minor features are missing—being able to split in blackjack, for example—but the games come with directions, so you can brush up before you sit down at a real casino.

Klondike solitaire—one of the most popular



You'll have to turn the Newton sideways to play Patience.

Solo solitaire sports a clean interface.

Pico Fermi Bagels updates the old board game Mastermind.

shareware card games for any platform—is available in two versions for the Newton. Renaud Boisjoly's **Solo** has a slightly cleaner interface, while Sentient's **Patience** offers additional options, such as double-tapping on cards to move them. Be aware though, that Patience makes you turn the Newton sideways. That matches the aspect ratio of a real game of Klondike, but it may be alienating to some.

Pico Fermi Bagels is an update of the old board game Mastermind. Newton picks a number of between two and five digits and

Stephen Weyer, the simple but cleanly programmed Pico Fermi Bagels is a lot of fun.

If you carry a Newton, you don't have to carry dice to play **Yahtzee**. Simeon Leifer's Newton version turns out to be remarkably similar to video poker. You get three rolls to get your best pokerlike "hand." Tap the dice you want to keep before you roll. Best of all, Leifer uses the Newton to handle Yahtzee's tedious scorekeeping. Up to four people can play, passing the Newton around for each turn.

you have to guess it in as few tries as possible. The game gives you word clues to tell you how well you've done: Pico means you got a digit right, but it's in the wrong place; Fermi tells you you've gotten a digit in the right place; and Bagels indicates that you're completely off base. Designed by

better hardware for better games

The Newton and Zoomer have stolen the PDA spotlight thus far, but their sales performance has fallen far short of star quality. Industry analysts estimate total sales of only about 125,000 units, with 300,000 to 400,000 expected to ship by the end of the year.

Now, a second generation of PDAs—including a remodeled Newton and the new wireless Envoy from Motorola—may boost overall sales and put more pressure on developers to come

up with innovative entertainment programs.

The Newton MessagePad 110 boasts several improvements over the original MessagePad 100. The box is slimmer, and there's a hinged cover for the screen, so you don't have to carry a separate case. Apple officials say the 110's batteries will last two to three times as long,



Motorola Envoy provides wireless connectivity.

depending upon the type of batteries you have. It also has three times the user space for running applications, and its handwriting recognition is more flexible, but it runs all the software written for the original.

Best of all, the MessagePad 110 lists for \$599, a good chunk of change less than the \$799 list

price for the original MessagePad 100 when it debuted last August. Bargain hounds can still pick up the original for \$499, and a \$100 software upgrade provides some of the 110's new capabilities. (Apple Computer; 800-505-2775; \$599)

At about \$1,500, Motorola's new Envoy costs more than twice as much and is bigger and heavier to boot. Yet its slick case, General Magic's Magic Cap operating platform and Telescript software, and built-in wired and wireless communications make it an intriguing alternative. The Envoy will offer access to online services such as America Online, CompuServe, and the Official Airline Guide as well as



Street-light travel information listings.

The Envoy will not ship with games, but third-party developers are working on such games as Mindbender, and solitaire, among others. (Motorola Wireless Data Group; 800-535-5775; \$1,500)

Still not enough options? Not to worry. Later this year look for Microsoft and Compaq to introduce a Mobile Companion, their own take on the PDA concept. With all these heavyweight players in the market, maybe a decent supply of games and entertainment software won't be far behind.

—Fredric Paul



Newton Messagepad 110 has more battery life and memory.



Take Fingertip for golf on the links.

Yaltzee is still the dice-thrower's favorite.

Stats-Baseball is for the hardcore statistician.

Newton Sports

One of the great things about PDAs is that they are some of the only computers around that you can take out to the golf course or ballpark. An innovative company called Fingertip Technologies is taking advantage of that with special Newton programs for golf, baseball—even working out at the gym.

If you're a golfing enthusiast, check out **Fingertip for Golf**. Once you load your favorite course (either manually or from another Newton), you simply write in the names of the players, note which club is used, and tap where the ball lands after each stroke. The software then keeps tabs on your score and stats during 20 rounds of golf. For gamblers, **Fingertip for Golf** will monitor wagers, letting duffers keep their mind on their swing.

Fingertip for STATS-Baseball, on the other hand, is aimed at hardcore fans. No. 2 on *E2's* Baseball All-Star Team (see "Batter Up!" March 1994, page 46), this innovative software lets you keep stats of the game with simple stylus taps. Created in tandem with Sports Team Analysis and Tracking Systems (STATS), **Fingertip for STATS-Baseball** lets you keep up with the season in progress by linking to STATS' database with the Newton Connection Kit and downloading up-to-the-minute statistics. **Fingertip** is also promising a prize-filled trivia contest and online access to the *Bill James Baseball Encyclopedia*.

The company has also announced **Fingertip for Fitness** for a late-spring release. This title will help Newton owners create and monitor a personalized exercise program.

Get Out of Town

If you're feeling a bit disoriented in a new city, Newton can also offer some help. **Fodor's '94 Travel Manager: Top U.S. Cities**, for example, offers a guide to Atlanta, Boston, Chicago, Dallas, Los Angeles, New York, San Francisco, and Washington. Within each city, users can view their location and receive driving instructions for a particular destination or simply tap into a database for the best Chinese food nearby.

Time Out Guide to London is another travel guide that takes users to the heart of London, where they can get detailed information about where to stay, museums, art galleries, restaurants, shops, transportation, and entertainment.

An Infant Genre

PDAs are still in diapers, and the games and entertainment titles available now are clearly first-generation efforts. As the hardware improves—a second-generation Newton MessagePad 110 was introduced in March (see "Better Hardware for Better Games" on page 61)—you'll see new games and other fun stuff coming to market to take advantage of it.

It's unlikely that the Newton will ever match the gaming power of simple cartridge-based systems such as Nintendo's Game Boy or Sega's Game Gear, but that's not the point. The fact that a Newton costs ten times as much as one of those toys doesn't really matter, either. You buy and carry a Newton for other reasons. The fun is just a bonus, so take advantage of it. Remember that all work and no play makes Newton a dull PDA.

Andy Eddy is a senior editor for GamePro magazine.

StarCore Products

(800-708-7827)

Cogito (Aired Concept; disk, \$38.95)

Columbo's Mystery Capers (Blank, Beryln & Co.; PCMCIA, \$79.95)

Dell Crossword Puzzles (Blank, Beryln & Co.; disk, \$49.95)

Dell Crossword Puzzles and Other Word Games (Blank, Beryln & Co.; PCMCIA, \$79.95)

Fingertip for Fitness (Fingertip Technologies; disk, \$119)

Fingertip for Golf (Fingertip Technologies; disk, \$159)

Fingertip for STATS-Baseball (Fingertip Technologies; disk, \$129)

Fodor's '94 Travel Manager: Top U.S. Cities (StarCore; PCMCIA, \$119.95)

Jigsaw Strategy Game (Pensée; disk, \$39.95)

Motile (Blank, Beryln & Co.; PCMCIA, price not available)

Silicon Casino (Casady & Greene; disk, \$59.95)

Time Out Guide to London (StarCore; PCMCIA, \$119.95)

Freeware/Shareware Products

Incoming! (Stephen Cleaves and Michael Dupuis; free)

Newtris (BugByte, 3650 Silverside Rd., Suite 3, Wilmington, DE 19810; \$15)

Patience (Sentient, 31 Bell St., Reigate, Surrey, UK RH2 7AD; free)

Pico Fermi Bagels (Stephen Weyer, 17 Timber Knoll Dr., Washington Crossing, PA 18977; free)

Sea Hunt BugByte, (3650 Silverside Rd., Suite 3, Wilmington, DE 19810; \$15)

Solo (Renaud Boisjoly; Internet: renaud1@applelink.apple.com; free)

Yaltzee (Simeon Leifer; CompuServe: 71131.3555; free)



The newly
multilingual
Multimaniac
galls the
Gauls.

how my PC



taught me le français



MRS. NEWMAN would be so proud of me. The Multimaniac has finally gone polyglot, thanks to some cool new CD-ROM-based language tutors.

Mrs. Newman was the nice lady who had the misfortune to be my teacher for most of the four years of French 1 that I took in junior high and high school. Now, you know and I know that the normal progression is to take French 1 the first year, French 2 the next year, French 3 after that, and so on. But somehow it never quite worked out that way for me.

It's not that I'm wholly without language skills. On occasion I can manage to write a complete sentence in English. I'm also passably fluent in several computer-based languages—Visual Basic, C, and WordBasic, for example. And believe me, anyone who can master the rigorous and arcane syntax of WordBasic (the macro language in Microsoft's Word for Windows) shouldn't have all that much difficulty conjugating the future perfect tense of *être*.

Speak No Evil

But the problem I had with learning French in high school didn't have to do with conjugation—any problem in that area was something that better study habits could have cured. It was attempting to speak the language that was my undoing. A simple phrase like *la fille est sur le cheval* sounded like the world's most insidious tongue-twister when I tried to pronounce it.

Over the years, this problem has often proved embarrassing. For instance, there was that 26-hour train

ride from Barcelona to Madrid (yes, you can walk the route faster). I'd made friends with a couple of French-speaking Algerians with whom I was sharing a compartment. They'd been kind enough to speak English to me, and I decided that I should return the favor by talking their language. Drawing on all my years of studying French, I carefully composed a sentence in my mind—something like "It's so hot that the overcoat-clad elephants refuse to play pinball."

I went over it again and again, until I was sure that I had it right. Finally, I spoke. My companions reacted with blank stares. I said it again, trying to pronounce each syllable as distinctly as possible. Again the stares. Once more I tried, speaking even more slowly and distinctly. "Ah," said one of my companions, "you are trying to speak *le français*. Please speak English—it's much easier to understand you."

I've borne the shame of that day for many years, but no more. At last, I've discovered a way to conquer my demon. And though I'm not all the way there yet, I have found that it's possible for me to master French, Spanish, German, or even Kanji—and all thanks to the wondrous world of multimedia that made me a maniac in the first place.

Polyglot Perversity

I found a huge assortment of multimedia language-tutor programs available for both the PC and the Macintosh. The real problem I had was figuring out which tutor's talents I wanted to tap. BayWare's Power Japanese has gotten some great reviews, but they all talk about its strength in teaching the language skills



by Paul Bonner

you need for business communications in Japan. The Multimaniac doesn't want to talk business; he wants to rave all night in smoky cafés, so that was right out. Berlitz's Think & Talk German course was impressive—it includes no less than nine CDs full of lessons—but if I'm going to travel somewhere to rave all night, it has to be a land where the culinary arts have moved beyond sausage and dumplings, so German was off my list.

That left Learn to Speak Spanish 4.0, (also from Berlitz) and Fairfield Language Technologies' Rosetta Stone Français. Spanish was certainly tempting. That train ride aside, I have great memories of Spain. And lord knows the food in most Spanish-speaking parts of the world is glorious. But then I started thinking about Mrs. Newman, and how much it seemed to matter to that kind, decent, dedicated woman that I would one day be able

to stand tall and say "Je m'appelle Paul" and actually have someone understand me. French it was.

Let the Lessons Begin

Since I had an entire month to spare, I figured I was in pretty good shape. I wasn't expecting

miracles, but I did kind of hope that by my deadline I'd be reading Proust in the original.

It was a good plan, if perhaps a mite too ambitious. I'll admit right now that in one month I didn't master all the intricacies of

the lingo that makes Paris hop. But I did get far enough to see that CD-ROM-based tutors may represent the best way yet invented to learn a new language.

It took me awhile to come to that realization though. At first I was a bit disappointed,

because the Rosetta Stone French tutor I'd selected turned out to be concerned with the same vocabulary-building, grammar, and pronunciation skills that I'd suffered through in Mrs. Newman's class those many years ago. (Fairfield Language Technologies; 800-788-0822; Windows/Mac, \$395)

Somehow, I'd expected that multimedia would let me skip past the basics and go straight to the good stuff, so that by midafternoon I'd be reciting Baudelaire. But then it dawned on me that, tedious as it might be to have to learn a new vocabulary and syntax, perhaps these were the very skills that one needed to truly master a new language. Having made that conceptual breakthrough, and reconciled to the possibility that I might not entirely conquer the French tongue overnight, I sat back and truly began to enjoy my *séjour en la langue de Provence*.

One thing I always hated about language classes was the teacher's insistence on speaking only in the target language. I always wanted someone to put things into context for me in English. So you can imagine my reaction when I realized that



In Rosetta Stone French tutor you match the French phrase to the picture.

once I got past the setup instructions, every word in the Rosetta Stone course was in French. But somehow, the *no-speak-ze-English* method worked here. In fact, it was kind of captivating. For instance, the first few of Français Level 1a's 92 lessons presented four digitized images on the screen—a boy, a girl, a cat and a dog, for example. As I gazed at these images, a couple of words in French would appear at the top of the screen—maybe *le chat*—and a digitized voice would read them. My job was to click on the correct picture, in this instance the cat.

And so it went. The program kept track of my right and wrong answers, while presenting ever more complex vocabulary and phrases in a variety of permutations of the original lesson. Sometimes it would present text and pictures but no sound, sometimes sound and a picture but no text, and so on. Since pro-



French food may be the best reason for learning the French language.

ses spoken by the friendly digitized voice.

The results were pretty remarkable, especially for someone with a pair of tin ears like mine. The CD format allowed me to go at my own pace and concentrate on exactly the things I needed to learn—something that would never be possible in a classroom setting.


nunciation had always been my biggest bugaboo, I concentrated on the lessons with sound, trying to repeat exactly the phra-

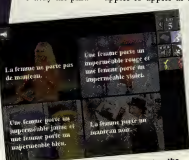
I could hear exactly how something was supposed to be pronounced and compare my own pronunciations. Plus I took advantage of The Rosetta Stone's dictation capability, which let me record my own speech using a microphone (not included) plugged into my sound card. That let me compare apples to apples as it were, my digitized

voice against that of the friendly Frenchie, and enabled me to really polish my accent.

At this point, my French conversational skills are still pretty much at the level of "The boy is wearing a blue shirt and the soup is hot," but soon I expect to move up

to full-scale café raving.

Meanwhile, my accent is so good that people confuse me with Maurice Chevalier (or at least Gerard Depardieu) on the telephone. Mrs. Newman would be so happy. 



Here you pick the written text that matches the program's spoken phrase.

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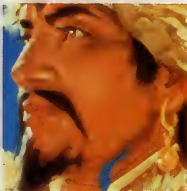
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State Game

E² REVIEWS, TIPS, AND STRATEGIES FOR

THE HOTTEST PC, MAC, AND CD GAMES



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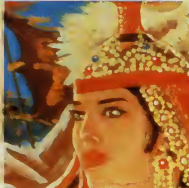
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The Lawnmower Man

By Al Giovetti

Stephen King hated the film version of his story "The Lawnmower Man," and many critics felt that it was little more than cult science-fiction celluloid that paled in comparison to the original. But that didn't stop more than 40 million people from seeing the film, producing revenues topping \$150 million.

GAME-WINNING TIPS

During the ledge of darkness and cyber-boogie arcade sequences, push the cursor buttons repeatedly as soon as you know which direction to push. The game allows only the correct push to work. On the platform-jumping sequences, you must press the button at precisely the correct time.

In the later cyber-boogie sequences, turn into the pathways with the spiked circles, called cyber-stasis spheres, in order to free Caria and Peter Parkette later in the game. You must also jump to touch these spheres during the ledge of darkness or platform sections of the game.

In spin-out, the object is to spell out the word *angelo* on the block by spinning it. First, turn the cube so that there is an upright *A* facing your character. The sequence to gain access from that point is right, down, right, down, right.

Now there's *The Lawnmower Man*, the game, and it takes place totally within the virtual reality postulated in the film. Rob Henderson, the creative director, has adapted the computer animation and graphics files from the movie with Autodesk's 3D Studio to produce a game that plays like a combination of *The 7th Guest* and *Dragon's Lair*. The *Lawnmower Man* boasts the best-looking 15-frame-per-second, 32-color graphics that will

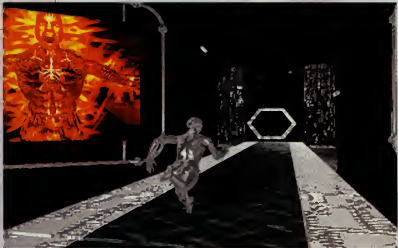
play in Super VGA with only 512K of video RAM and a 386 microprocessor.

The game picks up seconds after the film ends, with the birth of Cyberjobe and the sound of every phone in the world ringing. Through the intervention of Dr. Angelo, a researcher at Virtual Space Industries, Jobe Smith, a mentally deficient gardener, has become a superintelligent, godlike,



Free yourself by solving 28 puzzles in *The Lawnmower Man*.

cybernetic construct within the world's computer networks. Jobe enslaves and imprisons Dr. Angelo, Caria and Peter Parkette, and other figures from his life inside the network. As Dr. Angelo, you must pass 28 increasingly difficult



The cyber-boogie game is taken straight from the film.



Brilliant gold circuits run through Cyberjobe's obsidian body.

game, and a flying game from the movie in which you fly through a maze. The thinking games include a standard multiple-choice intelligence test, a music-tone repetition game, four maze games, a cannon game, and an obscure spelling cube. In the final game sequence, Angelo must avoid lightning bolts and kick Jobe into the cyber abyss.

Many parts of The Lawnmower Man look as good as the film,

while other parts, specifically those with grass (and there's lots of that to mow) and those in the "ledge of darkness" sequences, had to be scaled down in resolution to run smoothly on the low-end machines the company wished to support. (According to Henderson, the planned sequel will have 16 million colors, 30-frame-per-second video, and MPEG digital compression for VHS-quality graphics.

Steve Hillage, a European sixties rocker, composed the cyber-boogie music of the film-based flying sequence, and Fergus McNiell composed the other 16 themes used in the game.

The music and graphics blend beautifully. The omission of a game-save feature, the poor graphics in the early sequences, and a lack of precise character control in the action-intensive sequences,

though, are enough to mar an otherwise excellent virtual reality adventure. (Sales Curve Interactive; 310-577-1515; CD for DOS, \$69.95)



You must help the bees traverse the maze to their destruction or be stung to death.

arcade sequences comprising 12 different types of action and brain-drain challenges. For each "test" you successfully complete, you're rewarded with a one-minute, quarter-screen, full-motion-video sequence from the film. Angelo wins his freedom and that of the Parkettes only if he completes all 28 sequences.

The arcade sequences include a platform game where you jump from pillars to moving platforms, a running and jumping



TECH TIPS

Sound Blaster users must make sure that the SET BLASTER command, in the AUTOEXEC.BAT file, is in all capital letters. Otherwise, the program locks up.

The developers of The Lawnmower Man are aware of the poor quality of the graphics in the early parts of the game. To encourage players to see the far superior graphics in the latter part of the game, they have supplied cheat codes to warp-speed players directly to them.

To go directly to the ledge of darkness 2 sequence, use code A; and to move directly to the cyber-boogie sequence, use code B below. To use the codes, make sure you are in the directory in which Lawn is installed. Then from the prompt type:

A) DTVPLAY -S SUB\PLATFORM\CATWALK2.SHT-Cx
B) DTVPLAY -S SUB\CYBOOGIE\CB02.SHT-Cx
where x equals the drive letter of your CD-ROM.



The Lawnmower Man's fine music and unique simulation of virtual reality combine well, for the most part, with the arcade sequences and mind games. But the game suffers from inconsistent graphics, a superficial story line, and the lack of a game-save feature.

Genghis Khan II

By Barry Brenesal

You've flown bombers over Korea. Commanded submarines off the coast of WWII Germany. What's left? Try rampaging across medieval Asia and Europe in Koei's Genghis Khan II: Clan of the Gray Wolf.

Like past Koei simulations, Genghis Khan II is about wars and the brief breather periods between them called peace. Your immediate goals are to pacify the neighboring Mongolian tribes and build up your economy as you search for effective generals and hire troops. Your ultimate aim, of course, is nothing less than the destruction of all rival Mongol leaders and the incorporation of their tribes into your national force.

Resource allocation is the key. You can find, promote, and demote generals. Ally with other provinces, and spy on them. Visit merchants, and reorient your provincial economy. Go to war. But every activity your hero undertakes has a vitality cost, and you have only so much vitality to expend per year. Your choices and timing determine whether you end up as Great Khan of all Mongolia or just a yurt salesman in some Ulan Bator suburb.

If you make it to the top, you suddenly jump from a map of Mongolia to the international stage. Now you've got to contend with the major players who control India, France, and more. Each Eurasian nation has its own production capabilities, special troops, and climate, all of which affect battles. Each seeks control to rule the rest.

Genghis Khan II features four successive time-

GAME-WINNING TIPS

Build up the loyalty of conquered provinces quickly, or risk early revolt by their governors. Only governors related by marriage are immune to such treason.

Switch your provinces from herding to agriculture and production as soon as possible. You can sell surplus goods to traveling merchants in exchange for arms and mercenaries.

Don't bother hiring generals with poor ratings. You have a very limited number of slots for officers.



You give orders or delegate the responsibility to your advisor in Genghis Khan II.

based scenarios reflecting different stages of the Mongol invasion. You can choose to play three of these. The fourth is a special challenge for hardy leaders who succeed in the first scenario (the con-

quest of Mongolia) before 30 years have lapsed.

Your chosen ruler and generals in Genghis Khan II are rated A through E for leadership, political ability, war ability, and charm. You need strong generals because your hero can't always be on the front lines; when he isn't, your generals fight under their own guidance. Good leadership and martial skills spell the difference between a charismatic individual who leads his troops successfully into battle and one who trips over his own shoelaces.

Genghis Khan II lacks the joint ally attacks and defenses of Koei's recent Romance of the Three Kingdoms III, not to mention the double-dealing betrayals that are a hallmark of that game. It does provide more troop types to select from, however—16 in all. And visually there isn't much difference between these products. Both Genghis Khan II and Romance of the Three Kingdoms III are among the most attractive high-res VGA games on the market today, with colorful detail that brings to mind hand-embossed medieval illustrations.

Combining exceptional visuals, pleasant music, clever strategy, and simple but attractive animation, Genghis Khan II is a must-have for armchair warriors and Mongol horde leaders everywhere. (Koei; 415-348-0500; DOS, \$59.95)



Choose your generals carefully.



Colorful portraits and dialogs help personalize your battles.

1 2 3 4 5 6 7 8 9 10

A great role-playing strategy game that's colorful and fun—easy to play, but difficult to win.

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It's a dirty job but somebody's got to do it.

Circle 182 on Reader Service Card

Hannibal

By Wayne Kawamoto

Rome wasn't built in a day, and you won't tear it down in 24 hours either—but you can try. Microleague's *Hannibal* offers old-world war gaming with the military exploits of Rome's enemy, Hannibal, a Carthaginian general whom many historians consider to be one of the finest strategists of all time. When in Rome, don't do as the Romans do—instead, spear, fight, and kick some Roman rear flank.

The game accurately reflects the military forces of both Carthage and Rome at the time, along with the populations and respective allegiances of the villages. At the outset you command three major armies, represented with tiny markers on a map. You choose which cities to travel to; once there, you can purchase supplies, mercenaries, elephants, horses, and boats; negotiate with the city; or attack and besiege it.



Hannibal lets you set tax rates in your cities to help pay for the Roman wars.

Some cities are already your allies while others, who associate themselves with Rome, may need some convincing.

Traveling between cities can take days, and you must ensure that you have adequate supplies to feed your hungry armies. Negotiating with or besieging a city can take time as well.

GAME-WINNING TIPS

For adequate funds, earmark at least two-thirds of the imperial treasury for the army.

Break up your armies and send groups of them ahead to get a jump on negotiations.

Make sure that you use the Winter quarter command so your soldiers don't freeze.

Besides looking at the size of a city's army, don't forget to consider the all-important fortifications.

Split or combine your armies as you strategically see fit. You can also set the tax rates in the cities, or subsidize them to persuade them to remain with your empire.

Inevitably, you meet Roman forces and engage in battle, and here's where *Hannibal* falters. Because the manual discusses tactical formations, the game seems to promise 3-D battlefields where you can position cavalry and infantry and battle in real time. What *Hannibal* does instead is determine the winner of the battle based on the size of the army and its

chosen formations—a disappointing ending. All you see are the number of troops for each side and their declining number as battle ensues.

Battle is purely a numbers game in *Hannibal*.

You are also hampered by *Hannibal's* interface, which consists of a main map and several "buttons" that reveal submenus. *Hannibal* was a great tactician, but the game based on his exploits doesn't mirror that quality. It's hard to tell which submenu you're actually in, and buttons that appear to be active aren't. The game's documentation is more a dry history than a useful instruction guide.

Hannibal promises a thrilling chariot ride and instead delivers an elephant that slowly plods through the Alps—historically accurate, but not very exciting, which ultimately proves disappointing. (Microleague Interactive Software; 800-344-6572; DOS, \$34.95)

1 2 3 4 5 6 7 8 9 10

Flaws in the interface and a battle mode that's woefully uninvolved keep *Hannibal* from scaling the heights.

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Circle 28 on Reader Service Card

Spectre VR

By Christopher Lindquist

“We’re going to play Spectre later—you interested?”

It was a rhetorical question from my office pals. I’ve been known to pass up playing a game against a computer now and then. I’ve even given the no-go sign to a couple of challengers looking for some one-on-one in Red Baron or the like. But I haven’t turned down a multiplayer Spectre VR tournament yet, nor do I plan to any time soon.

Velocity’s Spectre VR is the updated edition of the ever-popular Spectre cyberspace action/strategy battle game. The new version not only gives you more advanced vehicles that can fly above and dive below the “matrix” grid, it also lets you compete with up to seven opponents across a network. Now not too many peo-



In team-play mode, you can view your opponents’ names, so picking off your boss is easy.

In another couple of minutes, everyone is connected via conference call on the speaker phones. Let the games begin!

Begin they do—and fast. Once all the contestants enter the “arena,” things happen quickly. Teams almost always deteriorate to an anarchic free-for-all within minutes. Soon all the players are shooting anything that moves while trying to keep their own butts in one piece.

The arena consists of grids filled with a variety of obstacles and enemies that vary depending on your level and whether you’re playing a single- or multi-player game. Acid, ice, cybermud, and other hurdles impede you as you try to collect flags in singles-player mode. Meanwhile, Rovers, Slicers, and Turrets all attempt to make you just another cyberspace memory. This isn’t *mano a mano* competition like in the arcade classic Battlezone, either. Your enemies use artificial intelligence to function as a team with a purpose—scattering you across the grid.

Fortunately, the keyboard controls for Spectre VR are laid out logically, and you can modify them to whatever works best for you. After getting destroyed for the first few rounds, I decided that what works best for me is pulling out my Advanced Gravis MouseStuck and forgetting the keyboard entirely. Unfortunately, I didn’t get to my secret weapon soon enough—one more loss to try to forget. (Velocity Development; 800-856-2489; CD for DOS, no price available)



Spectre VR turns your system into a virtual drive-in.

ple can get the gang together for a quick round of Spectre VR on their home network, but if you’ve ever wanted an excuse for staying late at the office, this may be it.

Our tournament sessions generally begin with 10 to 15 minutes of getting everyone settled in and online, then another 10 minutes working through the inevitable system lockups. (Spectre VR wants all of your machine, be it Mac or PC, so you may spend some time fiddling with device drivers to get things working properly. Unless you have the hottest hardware, you may need to turn off some of the options, such as displaying QuickTime movies on arena walls or shading, to get reasonable performance. Don’t worry: Even if you’re forced to turn off most of the eye-candy options to make the game playable, you’ll find the action as solid as ever.)

1 2 3 4 5 6 7 8 9 10

Spectre VR raises the stakes, especially for anyone with access to a network. It’s easy to jump right in and play, and advanced users will be working out strategies for a long time to come. Be warned that better hardware makes for a better game, though.

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Epic Pinball

By Neil Harris

Sometimes I miss the old days before video games came along. You could walk into a seedy pool hall and find, tucked into a corner and covered with old cigarette ashes, the best game in town. Pinball. The coolest players had the pose down: one knee up on the machine, back arched with the shoulders thrown way back. The mind and body were one with the machine, a physical-electro-mechanical artform.

Computer pinball games aren't quite the same, but Epic brings us about as close as we're likely to get without the secondhand smoke. Epic Pinball is a next-generation product, surpassing Epic's original pinball game, Silverball. There are nine different pinball boards, all in crystal-clear VGA with digital sound. You can try the first board for free as a download from your favorite online service or BBS. If the game scores bonus



GAME-WINNING TIPS

The flipper buttons change the lit and unlit lanes at the top of the play field. Use them to light all the lanes and increase your bonus multipliers.

Read the directions. They are as important here as on a real machine. They will tell you which shots to make, and when, to get the really big scores. There's even a secret in the instructions that gives you a sixth ball each game.

Use the z and / keys, and the spacebar to jiggle the machine. Don't overdo it or you'll tilt, but the right timing can save you from going down the drain.

In the Options menu, choose low angle to slow the game down and increase your reaction time.

Magic has lower scoring and less action than the other boards.

points with you, you can order the other eight setups by phone.

As it happens, the shareware board, Android, is one of the best of the bunch. Your goal is to make the android live, as the game keeps reminding you. If you reach that very special zone where you and the pinball game meld, you can work it until each of the android's systems are hooked up: the basic I/O, the artificial intelligence, and the arms and legs. Some of the shots are very tough, and



Catch that leprechaun—he's worth bonus points.



In Undersea, it's just you and the fishes, so make sure you don't run out of air.

putting them all together in a single game is something I hope to do before I die.

The other eight games you get in the registered version are a mixed bag. My favorite is Crash and Burn, which uses a road-racing motif and has a couple of extra flippers up near the top. This game rewards restraint—you get more points for running three laps before hitting the finish line than you would for crossing the line each time.

The Enigma board oozes cool psychedelic, with cycling colors that change with each level. It's not as complex as the other games, but it's mellow, man—a Zen-like experience.

Epic Pinball isn't perfect. Some of the boards, like Magic, are styled after antique machines. The scoring is much lower, as is the action. I may predate the MTV generation, but I'm not a dinosaur, either. Intellectually, I realize that scoring 300,000 on a shot instead of 30 is just a numbers game, like Spinal Tap turning the amps up to 11, but in my gut I like those big, inflationary scores.

Epic has done a fine job with this one. If you ever liked pinball, even if you never really liked the computerized simulations before, this one is worth checking out. It's the next best thing to a time machine. (Epic MegaGames; 800-972-7434; DOS, \$45 for game packs 1 and 2, \$29 each)

1 2 3 4 5 6 7 8 9 10

Epic Pinball is a splashy and challenging simulation of the old arcade games. Its VGA graphics and challenging design put it at the top of its field.

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OUT.**



Astro Chase 3D

By Bob LeVitus

Fans of thrill-packed arcade-style shoot-'em-ups such as Spectre and Maelstrom will certainly click with Astro Chase 3D. This game is without question the most addictive, adrenaline-pumping title I've played all year.

Things get going when you climb aboard your Ultraship, a flying saucer so advanced it's almost perfect, except it does have the problem of running out of energy. Your mission is to vaporize the Mega Mines on each level before they attack

Earth. When you succeed, you get the typical hero's reward: a more challenging level. When you fail, Earth is destroyed.

The program uses exciting new technology from Mac-Play called the Software Accelerated Graphics Engine (SAGE), which manipulates bit-mapped graphics quickly and efficiently, resulting in highly

detailed and realistic real-time environments. For players, this means that the graphics and game play are fluid, fast, and responsive, even on older color Macs such as the IIsi.

You navigate—left, right, up, or down—with the mouse. The Option key fires Solar Plasma Beams (or the more powerful Cosmic Energy Weapon, if you have it) in the direction the ship is facing. You drop bombs and grenades by

GAME-WINNING TIPS

Move back and forth quickly through the Energy Generators to boost your power. Hold down the mouse button to stabilize your ship, then press the Control key quickly and repeatedly to go back and forth inside the circle.

Use both the mouse and the Option key (sometimes simultaneously) for firing. You can't win the game without mastering both techniques.

On each level, kill all but one Mega Mine, then search for the Power Up Stations and collect the goodies. Vaporize the last Mega Mine to complete the level.

Mega Mines become smarter and get a "guardian" moon in later levels. They also acquire an energy-sapping ray. You must learn how to avoid both to win.

pressing the X and Z keys. The mouse button engages the unique and useful Single Thrust Propulsion system, which lets you travel in one direction while firing in another.

Indestructibility is where it's at in this game. About the only way you can die in Astro Chase 3D is to run out of energy, so monitor your supply carefully. For a quick pick-me-up, fly through an Energy Generator, a sort of espresso machine for the spaceship set. But be warned: Colliding with a space object or tangling with enemy missiles zaps your energy.

When you reach the higher levels (10 and above) you'll find Power Up Stations where you can pick up advanced weaponry, warp speed, and additional saucers. You need all of them (not to mention skill and patience) to complete the game's 40 levels, which are generated at random so you never play exactly the same level twice.

Astro Chase 3D is close to gaming perfection. It's easy to learn but difficult to master, especially the last five or ten levels, which makes it one of the most intensely satisfying arcade games available for the Mac or any platform. (MacPlay; 714-553-6653; Mac, \$59.95)

1 2 3 4 5 6 7 8 9 10

Fast, snazzy graphics, responsive controls, a polished interface, and a compelling premise make Astro Chase 3D one of the best games so far this year.



For a quick boost, fly through an Energy Generator.



Raid the multicolored Power Up Station for additional weapons.

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Fast Action Paq: The First Challenge

By Rick Raymo

C'mon, tell the truth. You play games at work, right? Don't be embarrassed. Your co-workers do the same thing. After all, a little stress reduction never hurt anyone.

Fast Action Paq: The First Challenge for Windows from Mallard Software's Quackers label is specifically designed for when you want to take a little break from the grind without having to take on some massive adventure game.

This four-game disk delivers lightweight yet addictive gaming for folks who can steal only five or ten minutes of fun.

First off, there's Flak Attack. This one has you controlling a single rotating cannon in defense of a...er, ah, gee, who knows what you're defending.

Anyway, you shoot your puny cannon at incoming planes, helicopters, satellites, and parachuting robots. Ammo is limited, so you must avoid tagging UN choppers before they drop ammunition. Blast the little paratroopers, and they give a gratifying little scream before



Wonder why they call this shoot-'em-up Bubble Trouble?



In Mole's Quest, you help the little tola gather his belongings.

they go splat. Miss the little paratroopers, and they blow up your little cannon. It's light violence and fair fun.

Bubble Trouble puts you at the helm of a starship caught in subspace vortices. Here again you shoot like crazy, only this time you have to manage fuel while spinning, blasting, and trying to avoid enemy saucers. This game resembles plenty of others but somehow feels fresh and frenetic.



In Bots you shoot, scoot, and then shoot some more as you try to reach the manufacturing computer.

GAME-WINNING TIPS

Flak Attack: When the parachuting robots appear, ignore all else until you've taken out the little buggers.

Bubble Trouble: Use your fuel like a miser. Sometimes it's better to sit, spin, and shoot.

Mole's Quest: Remember that you can move forward or backward to get the proper position.

Bots: Use the walls to protect yourself whenever possible.



Keep an eye on the ammo supply while blasting the enemy in Flak Attack.

Mole's Quest features cute characters and no shooting. You help Monty the Mole search for his belongings through elevator shafts that move at varying speeds and in different directions. Move Mr. Mole in hops from platform to platform while avoiding charming-but-deadly baddies and finding ways to open the door on the other side. Then bring him back with his recovered appliances before time runs out. Mole's Quest manages to be both winsome and terminally frustrating.

The final game in this collection is Bots. You blast away at waves of robots while moving up a vertical maze to reach the computer manufacturing them. Walls may impede your progress or offer protection. Bots is short on novelty but has enough strategy and pace to intrigue most gamers.

Overall, Fast Action Paq: The First Challenge offers solid gaming that follows tried and true formats. Each title has decent-quality graphics, good sound effects, and a moderate addiction quotient. The price seems slightly high at \$34.95 list, but it should be discounted to tolerable levels at most stores. (Mallard Software; 800-932-3338; Windows, \$34.95)

1 2 3 4 5 6 7 8 9 10

Fast Action Paq loses a point for low originality, another for not delivering enough bang for the buck, and one more for not having a boss key.

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Interplay's 10 Year Anthology

By Peter Olafson

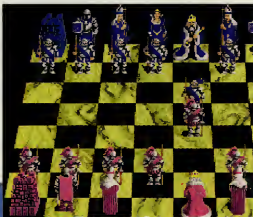
Interplay's 10 Year Anthology: Classic Collection for CD-ROM is a birthday party at which the guests get the presents. Under the gift wrap are ten games—some long out of print—that the company either published itself or produced for Activision or Electronic Arts between 1983 and 1993, a dozen working demos of more recent Interplay titles, and a slew of audio CD tracks. It's all topped off with an inch-thick, handsomely compiled manual.

True, it's easy to look down your nose at compilations. They do tend to be inspired by commercial rather than artistic concerns and usually emphasize quantity and price over quality. But Interplay Productions didn't make its name by marketing the same old same old. Its best games have soul, its second-best have spirit, and it has nothing worse than that.

By and large, the anthology games were well

created—and *Dragon Wars* (1989), which expanded upon what *The Bard's Tale* started.

Also included is *Battle Chess* (1988)—a game that, five years later, still inspires imitation. Interplay didn't simply do a chess game, it reinvented chess. The queen walks with a wiggle, the rook metamorphoses into something out of the *Fantastic Four*, and flying cherubs hold up the menus.



The queen sashays into position in *Battle Chess*.



A relatively quiet moment in the caustic world that is *Wasteland*.



Don't linger around the pool in *Out of This World*, or you'll be invited back in.

chosen. Another publisher might blow off its early work as unsuited to a 1994 market, but Interplay has unblushingly included 1983's *Mindshadow* and 1986's *Tass Times in Tonetown*—both text-and-graphics adventures—in all their prehistoric CGA graphics and PC-speakersound authenticity. *Mindshadow* was notable in its day for setting off a small wave of amnesia-driven adventures, and *Tass Times*, penned by noted Infocom writer Michael Berlyn, set a standard for happy weirdness.

Perhaps no single Interplay game has proved more influential than *The Bard's Tale* (1986), which inspired a whole era of 3-D role-playing games. That's here as well, along with the post-apocalyptic RPG *Wasteland* (1987)—widely regarded as one of the best computer games ever

And there are exquisite licenses included too: *Lord of the Rings*, Vol. I (1990) and *Star Trek: 25th Anniversary* (1992)—the latter just released in a new "talkie" CD version using the original actors. Interplay made the material for these two games its own by expanding on the original game universes in sensible ways, almost as though Tolkien and Roddenberry were looking over their shoulders.

Another old friend in this reunion is *Out of This World*. When it was first released, this arcade-adventure provided us with a sense of *déjà vu*. By the time you discovered all the nooks and crannies, you knew it like your own home and moved through it as though the polygonal character were an extension of your limbs.

The only questionable inclusion here is *Castles*. I liked this fortressbuilder initially for all its tiny workmen and subsurface plot lines, but it seems incomplete on reacquaintance. There's no place to go once the castle is in place, when the game



should just be beginning.

There's also some innovation tossed in along with the compilation of older games. During installation, digitized black-and-white photos of designers, programmers, producers, and players pop up on screen, along with their reminiscences about the games. It's a lot more interesting than filling out the registration card (the in-vogue installation filler) and you'll be interested to learn that Tass Times was originally called Enio the Legend, and that Wasteland has a mildly risqué declaration hidden along one of its frontiers.

However, that's about the extent of the pomp and circumstance. And that's a shame, because this anthology commemorates an event worthy of recognition. Interplay is one of the industry's success stories—a point confirmed with corporate giant MCA's purchase of a minority share—and the ins and outs of that story might have made good reading or why not have the commentators speak in their own voices? (After all, the whole shebang takes up just 67MB on a disk that can handle 600MB!) How about having introductions to each game as is common in literature anthologies? Or why not follow the model of the music industry in transferring classic albums to CD, and remaster the originals for higher video and audio-fidelity.

In the absence of updates and new material, who exactly is this for? Long-time computer-game players will already

have played most of these games. Newcomers who were introduced to PC gaming in its full-fledged 1990s incarnation may be disappointed to find that most of the pre-1990 stuff isn't up to current spec. (I had trouble getting some of the older stuff to work, and there's no troubleshooting section in the manual.) And collectors looking for previously unreleased masterworks or new versions of old stuff—à la Sierra's VGA updates of its first round of Quests—will find nothing distinctive here.

Still, the play's the thing, and while machines have grown faster, colors more vivid, and sound less synthetic, the play hasn't changed. Most of these games were wonderful when they first arrived, and many are still wonderful now—at a fraction of the price. While I could wish for more anthology, the little presentational touches won't go unappreciated. Happy tenth, Interplay, and here's to many more. But on the next big birthday, go wild, OK? (Interplay Productions; 800-696-4263; CD for DOS, \$79.95)



A fanatic tries to start something in Dragon Wars. Where'd he get the haircut?



Discover adventure in Dragon Wars and its predecessor, The Bard's Tale.



Ten reasons to love Interplay, packed onto a single CD-ROM. (Well, nine, actually. Castles is a handsome ruin.) It's a good value for anyone unfamiliar with this label's superb work, but otherwise, who is this for?



Engage in space battles in Star Trek: 25th Anniversary.



Revisit old favorites like Lord of the Rings, Vol. 1 in this ten-year anthology.

Wrath of the Gods

By Bob Lindstrom

Here's a toga party that doesn't have beer, loud music, or coeds. Still, you'll probably find something to celebrate among the wine, temples, and gorgons of *Wrath of the Gods*, Luminaria's new CD-ROM adventure game.

They went to the toga source for *Wrath's* plot: Greek mythology inspired characters, situations, and puzzles in the game. As your character roams ancient Greece searching for his father (doesn't that seem like what everybody in ancient Greece did?), you'll encounter the mythological cyclops, a hydra, and some water naiads, as well as mythical luminaries such as Hercules, Atlas, and Medusa.

Although *Wrath's* literary roots set it apart, its icon-based point-and-click interface and the mouse-controlled "little guy" borrow heavily from Sierra On-Line's graphical adventures. The main activity is finding and using objects, the foundation of most adventure games. To vary the routine, though, Luminaria has tucked in arcade-like sequences of monster killing and giant bashing and a few ingenious onscreen puzzles in the style of the best-selling CD-ROM, *The 7th Guest*.

Conversation with onscreen actors involves well-performed digitized speech, occasionally spiced by off-the-wall gags as monsters taunt you with Robin Williams-like patter. These unexpected outbursts contribute delightful, if anachronistic, doses of 20th-century humor.

Wrath combines its moderately difficult puzzles with copious hint opportunities, including a video oracle who knows all but takes five points off your score for each tip. Veteran adventure gamers may want more challenge than *Wrath* has to give, yet casual players will find the game entertaining without being frustrating.



Take a dip in an ancient hot tub.



These grotesque sisters have their (one) eye on you in *Wrath of the Gods*.



If you keep this nymph from getting lonely, she'll reward you with puzzle-solving gifts.

The photorealistic graphics are *Wrath's* real strength. The visuals primarily consist of video-digitized actors and beautifully composited photographic backgrounds. As a result, *Wrath* feels like a graphic adventure but looks like an interactive movie. (Luminaria; 415-821-2055; CD for Mac and Windows, \$79.95)

GAME-WINNING TIPS

Brush up on your Greek mythology. Several of the puzzles are based on ancient myths and their solutions closely follow the circumstances of the folklore. If you know how Perseus defeated the Gorgon or outwitted the Graece, you'll have a somewhat scholarly competitive edge.

If you flunked the classics, don't despair. Much of the background information you need is tucked into the info screens. A little careful reading and a good memory will help you get past obstacles without surrendering hard-won points to the Oracle.

Be on the lookout for a certain street merchant. He'll not only exchange valuable gadgets for gems, but also toss in puzzle-solving hints at no charge while you examine his wares.



The mythological atmosphere, unexpected wisecracking humor, and well-produced digital speech should please players in search of a moderately difficult adventure.





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Dragonsphere


By Rick Barba

There's no sense in trying to deny that the fantasy animated-graphic adventure market is a dangerous one," admits Dragonsphere designer Doug Kaufman. "The fine King's Quest series from Sierra virtually defines the state of the art."

So what does Kaufman do? He goes out and designs Son of King's Quest.

But wait, don't stop reading yet. Because darned if Dragonsphere isn't a pretty decent clone

job. Despite its lack of originality, it's still a remarkably competent adventure. All aspects of the standard animated graphic adventure, as defined by the King's Quest series—kings on quests in whimsical worlds, clever



GAME-WINNING TIPS

Use ineffable good cheer to spoil the faerie guard's fun at the entrance to the maze in Brynn Fann.

Expedite your trip across Hightower's stone pillars by taking the map from the wall in the Sorcerer's Room. Hang on to it! You can use it again (in mirror image) to cross the floating discs of the Spirit Plane.

Show her both the Callph and his tent guard with courtesy and effusive praise. If you do, you'll need to win far fewer times at the Game of Sands to gain crucial prizes.



The Kingdom of Callahach

Click on the icon of the place you want to go

It's not exactly King's Quest, but then again, it's not exactly *not* King's Quest either.



Want a warm tuzzy feeling? Put a nice bear hug on icy King Callash.



Your mom told you never to trust a sprite, and darned if she wasn't right.

puzzles, stunning graphics and animation, atmospheric music and sounds—are here, and they're handled quite well. And as far as the story goes, it's strictly déjàvu time, despite one clever midpoint plot twist.

You begin the game as a fellow named Callash, the newly crowned king of Gran Callahach. Alas, a powerful sorcerer named Sanwe hates your guts because he was imprisoned in his Hightower

retreat by your father's court wizard, Ner-Tom. The entrapment spell, known as Dragonsphere, has a shelf life of 20 years. You were a 13-year-old boy when the spell was cast. You're 33 now. Guess what time it is.

Off you go to confront the evil. Meanwhile back at the castle, your jealous brother MacMorn is stirring things up with mom. You know the score: dark palace intrigue, stunning betrayals, your standard dysfunctional royal family. Of course, you outwit demons and teleport objects. You hop across chasms, turn into snakes and such. Yeah, it's a wild, wacky, kings-questing kind of world, burning off the screen in 256 blazing colors. Man, you even get to make a ratsicle.

All right, maybe I slapped this game around a bit, but overall, I honestly enjoyed Dragonsphere. In fact, I liked it better than King's Quest VI. I just wish it didn't feel like King's Quest VII. Maybe next time the MicroProse design team can translate its competence and true love for the fantasy genre into a story that feels slightly less worn. (MicroProse; 800-879-7529; DOS, \$59.95)

1 2 3 4 5 6 7 8 9 10

Despite the King's Quest-ish quality to this game, Dragonsphere is an entertaining fantasy romp. Not the top of the genre, but a decent job.

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The Elder Scrolls, Chapter One: Arena

By Barry Brenesal

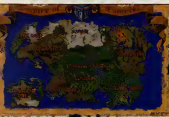
Looking for a game that will see you through next winter? This is probably it.

What distinguishes Bethesda Softworks' new *The Elder Scrolls, Chapter One: Arena* from other role-playing fantasies is its size. With its 400 unique cities, towns, and villages spread over 8 provinces, the land of Tamriel is so huge that it can easily handle 8 major quests, several hundred secondary quests, and dozens of artifact quests. How long can winter last, anyway?

Tamriel, of course, has its share of woes when you arrive. Chief among these is the treacherous Battlemage Jagar Tharn, who imprisoned his young master, the emperor, in another dimension and took his form. Among the living, only you know the truth—and only you can find the 8 pieces of the broken Staff of Chaos that will summon back the emperor and slay the treacherous Tharn.

Arena lets you design your hero using 18 character classes and 8 races. Eight more attributes govern the way you interact with the world—how well you haggle for merchandise, how easily you pick a lock to filch something you can't buy, and how swiftly you can run when the city guards catch you at it. You increase stats by performing quests and slaying monsters. There are 48 spells for the magically inclined, and a spell-builder module in the Mages' Guilds allows you to concoct your own original bit of mayhem.

The problem with presenting so much detail is making it look and feel diverse, and here *Arena*'s record is mixed. There is some nice architectural variety between provinces, and you'll find attractive weather displays in any given town.



Your quest takes you through Tamriel's eight provinces.



Goblins are only one of the monsters you face.



Seasonal weather changes make for some spectacular effects in *The Elder Scrolls*.

GAME-WINNING TIPS

Many treasure items are randomly distributed, so save when you discover a trove. If you don't like what you've found after "analyzing" it, reload the game and check out your booty again.

Don't try to play this game without sound! Your first signal of oncoming violence is usually some monster slaving behind you.

Don't leave the starter dungeon right away—check out every corner thoroughly. It contains many magical items and plenty of gold, which no adventurer wannabe should be without.

But city commerce is always limited to identical equipment stores, inns, a mages' guild, and a palace. None of the inhabitants have any discernible facial features (a common problem with polygonal graphics). The 3-D building interiors are disappointing, with many objects you can't access. No amount of description in dialog boxes ("the large, cheerful great room of the Silver Sailor's Inn") can make you feel comfortable in these bleak places among blank heads.

Arena's quests fare much better. They're strictly object-retrieval or monster-destruction types, but these ingeniously constructed, multilevel dungeons provide considerable variety. Shadow and light effects are particularly good. You're guaranteed to wince as you enter a gradually darkening portion of some unexplored corridor.

Arena's bestiary is grim. It's filled with villainous versions of all hero classes plus nearly two dozen monster types that include lizardmen, skeletons, and golems. Your opponents battle with a strategic sense that becomes more apparent (and deadlier) at higher levels.

While *The Elder Scrolls, Chapter One: Arena* has nothing revolutionary to offer in role-playing fantasy, it is nevertheless a worthwhile game for the sheer depth of its quest capabilities that far outnumber the competition. Accordingly, this one's a must for any mage, thief, or sword-swinging aficionado. (Bethesda Softworks; 800-677-0700; DOS, \$69.95)

1 2 3 4 5 6 7 8 9 10

Despite some repetitive elements, this first-person-perspective game offers hours of fantasy role playing for those that want it.

Nomad

By Rusel DeMaria

It's amazing what a galaxy full of aliens expects from a lone human in a borrowed spaceship. But there you are in somebody else's ship with a full tank of gas, exploring more than 250 planets and 150 alien entities, all the while blasting away at the ships of the galaxy's common robotic enemy, the Korok.

The goal of Gametek's *Nomad* is to prevent a Korok invasion of territories controlled by the bio-

logical aliens. It turns out that the way to do that is to destroy the MCR (Master Control Robot), but that's no easy task, and you want to reach the end.

First get sociable. You have to talk to a wide variety of creatures to find out what's going on, check the Com-Nets at inhabited planets to get messages and learn about missions that must be performed, read your ship's automatic log book to review your adventures and mission parameters, and so forth. Successfully performing missions is the way to progress in the game, earning higher ranks, awards from various races, and free goods.

Most of *Nomad* involves trading for better equipment—most important, for more and better missiles. There are four kinds of missiles, ranging

from Hunter Missiles (weak) to Quietus Missiles (one hit's all it takes). Needless to say, Quietus Missiles are expensive, and you generally get them from the arrogant Phelones, catlike creatures who drive a hard bargain. You have to put up with their attitude even though you're just trying to save their feline tails.

Nomad grew on me. It's fun completing missions and getting the rewards. The rather crude control during the combat sequences has a limited appeal reminiscent of old High Noon-style gun battles. You shoot faster than they do, you win. There's some limited maneuvering, but let's face it, this is no X-Wing.

Ultimately, though, *Nomad*'s success doesn't rest on realism, real-time combat, or on its rather average graphics and sound. Rather, it depends solely on the attitude of the player. You need patience to play this game. To solve the mystery you must locate the appropriate objects and gather certain facts. But clues are sparse and rather obscure. You have to be very thorough as you examine dozens of objects, talk to alien after alien (most of the time without learning anything new), and explore planets in more than 50 star systems. Be prepared to spend days (or even weeks) playing *Nomad* if you want to reach the end.

Accordingly, if you're looking for a game that can give you a good ratio of hours played versus dollars spent, *Nomad* may be a candidate. You supply a mind-load of imagination, an anal-retentive attention to detail, and a cargo hold of patience. (Gametek; 800-927-4263; DOS, CD for DOS, \$59.99)



Try to get the enemy in your sights—while staying out of his.



Scavenge the Korak ships to build your inventory.

GAME-WINNING TIPS

Chocolate is more valuable than you might think. Don't trade it too early.

Choose courier missions at first, until you have a good supply of missiles.

In combat, accelerate toward enemy ships. You may be able to force them to retreat, or at least maneuver. Keep peeling them with missiles until they explode.

Sometimes you get valuable items when you destroy an enemy ship. Check your inventory after battles.

Find the Alien Alloy Tablet. It gives a clue that's necessary to get code words from specific Koroks.



Get at least one Arch-Bot so you can explore previously inhabited planets.

logical aliens. It turns out that the way to do that is to destroy the MCR (Master Control Robot), but that's no easy task, and you want to reach the end.

First get sociable. You have to talk to a wide variety of creatures to find out what's going on, check the Com-Nets at inhabited planets to get messages and learn about missions that must be performed, read your ship's automatic log book to review your adventures and mission parameters, and so forth. Successfully performing missions is the way to progress in the game, earning higher ranks, awards from various races, and free goods.

Most of *Nomad* involves trading for better equipment—most important, for more and better missiles. There are four kinds of missiles, ranging



Despite average graphics and sound, this space exploration/trading/combat adventure will appeal to those who like to discover what's going on for themselves.

Tomcat Alley

By Christopher Lindquist

PREVIEW

If you come to Tomcat Alley, you'd better be ready for a fight.

But unlike what so many other CD-ROM games offer, it won't be a fight with a clumsy interface. You won't undergo the torture of click-and-wait while the disc spits out mundane video clips between action sequences, either. No, in Tomcat Alley the only fighting you'll do is dog-fighting, and plenty of it.

The game's plot is right out of an old "Mission: Impossible" episode—mad Russian Colonel Alexi Povich has hidden his private arsenal of MiGs, bombers, and missiles somewhere in the Mexican desert. It's up to you and your squadron of F-14X Tomcats to smoke him out and then just plain smoke him. Why is the Mexican government allowing you to run roughshod over its countryside?

Because it's a game, stupid, and a fun one at that.

Tomcat Alley marks the debut of the "third generation" of Sega CD games, and the improvement is impressive. While Sega CD has already seen the first of its "interactive cinema" games (such as Ground Zero Texas), which look more like prime-time TV shows than computer games, Tomcat Alley

takes things further. The half-screen or smaller video window has been replaced by full-screen motion video (though the grainy, pixelated picture may still remind you of Sci-Fi Theater on a UHF station five miles out of antenna range). Gone also are the concentration-breaking delays while data is loaded from the disc.

Flight-sim fanatics beware: If Falcon 3.0 is a PBS documentary, Tomcat Alley is definitely Saturday-morning cartoon fare. That isn't to say Tomcat Alley doesn't break the gee-whiz barrier, though.

In a break from flight-sim tradition, you aren't the pilot in Tomcat Alley. You're the radar intercept officer, which means all you



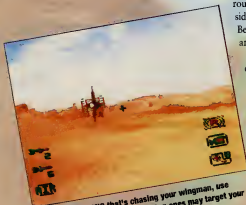
Don't waste your chaff and flares if there's a MIG on your tail, select another bogie to go after instead.

have to do is locate way points, fire weapons, and operate the defensive systems, reconnaissance camera, and radio. The controls are simple, but the game isn't.

You're presented with a set of way points for each mission. You tell the pilot where to go by moving the cursor over a point and pressing the B button. Click accurately, and you end up behind the enemy bogies or on target to take out ground defenses. Blow it, and the MiGs get first crack at you.

Shooting down enemy targets consists of picking a weapon, locking on, and firing. The first few are pretty easy, but by the time you reach mission seven, you'll be lucky to keep your own butt in the air, to say nothing of dusting theirs. Fortunately, Sega says it has added an "easy" option to the game to let players get comfortable with the controls.

Unlike many CD-ROM games that have extremely limited outcomes to each situation, Sega has built in up to ten alternatives for each encounter in Tomcat Alley. While a mistake could cost you your life, it might also mean just a reprimand from your commander and a chance to try again. It's this unpredictability that makes Tomcat Alley fun to climb into again and again. That's how life works. That's what makes Tomcat Alley work, too. (Sega of America; 800-872-7528; Sega CD, \$59.99)



To take down a MIG that's chasing your wingman, use radar-guided missiles; heat-seeking ones may target your cohort instead!

1 2 3 4 5 6 7 8 9 10

This game deserves good marks just for eliminating click-and-wait. And with exciting game play, involving cinematics, and good replayability, Sega's got a sure-fire winner.

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	excellent				poor
Editor's Page					
Multimedia Takes On TV	1	2	3	4	5
E2 Mail	1	2	3	4	5
Sharp Edge	1	2	3	4	5
Spotlight	1	2	3	4	5
Game On					
Thanks for the Memories	1	2	3	4	5
Party Girl					
Everybody's Gone Surfin'	1	2	3	4	5
Tube Man					
Road Work Ahead	1	2	3	4	5
Game Over					
Video Dial Tone	1	2	3	4	5

FEATURES

	excellent				poor
Pump Up the Video	1	2	3	4	5
Now Starring on a Computer Near You	1	2	3	4	5
The Machine Behind the Scenes	1	2	3	4	5
Big Fun, Little Boxes	1	2	3	4	5
Multimaniac					
How My PC Taught Me le Français	1	2	3	4	5

STATE OF THE GAME

	excellent				poor
The Lawnmower Man	1	2	3	4	5
Genghis Khan II	1	2	3	4	5
Hannibal	1	2	3	4	5
Spectre VR	1	2	3	4	5
Epic Pinball	1	2	3	4	5
Astro Chase 3D	1	2	3	4	5
Fast Action Pac:					
The First Challenge	1	2	3	4	5
Interplay's 10 Year Anthology	1	2	3	4	5
Wrath of the Gods	1	2	3	4	5
Dragonsphere	1	2	3	4	5
The Elder Scrolls, Chapter One: Arena	1	2	3	4	5
Nomad	1	2	3	4	5
Tomcat Alley	1	2	3	4	5
Unnecessary Roughness	1	2	3	4	5

TECH SHOP

	excellent				poor
Calling All Modems	1	2	3	4	5
Now Hear This	1	2	3	4	5
S.O.S.	1	2	3	4	5

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Unnecessary Roughness

By Wayne Kawamoto

It takes practice to complete big passes.



"Infinity Cam" brings the action up close.



View plays from almost any camera angle and distance.

Unnecessary Roughness makes it Monday Night Football any night. Accolade's football simulation is strong enough to hold the line against formidable competition such as Dynamix's Front Page Sports: Football Pro. It stands tough by offering

solid pigskin basics, top-notch strategy, tremendous graphics and sound effects (including Al Michaels doing the play-by-play), and the names, ratings, and pictures of real NFL players.

Although it's not the most detailed football game on the market, Unnecessary Roughness is the easiest to learn. While others offer college drafts, season-to-season play, and other minutiae, Unnecessary Roughness concentrates on the

GAME-WINNING TIPS

Study and understand the plays.

Use the practice mode to go through the plays against various defenses before the actual game.

To start, set the passing level to "beginner."

To ease the learning process, choose a 1993 powerhouse team for yourself, and a basement one for your computer opponent.

basics—the exciting sights and sounds of the game, and first-rate action and coaching strategy. While Unnecessary Roughness isn't for purists, it does offer satisfying digital pigskin perfect for armchair quarterbacks.

As coach, you set the strategy by using preset plays or ones you design yourself. Unnecessary Roughness incorporates an easy-to-use and flexible play editor to create customized offensive and defensive configurations. You can send your players through virtually any route and assign them positions such as receiver, running-back, or blocker. Then you can test your newly created plays against defenses based on actual NFL line-ups.



You need strategy, not just fancy fingerwork, to win at Unnecessary Roughness.

Once your team is ready to roll, you can play a single game or an entire season against either the computer or a friend. If you want to depart from pro football schedules, the league and season editors let you create your own leagues and playing schedules.

You become one with the action by controlling the quarterback and subsequent ball carriers on offense. On defense, you choose the player you want to control. Running, passing, rushing, and blocking—you do it all.

Unnecessary Roughness offers four levels of passing. For beginners, the action freezes so you can cycle through available receivers without the pressure of a rush. After you select a receiver, he automatically runs toward the ball to try to make the catch. Once you're an expert, you can try the pro level where you control the quarterback and the designated receiver, all while avoiding a mean pass rush.

Graphically, Unnecessary Roughness has the edge over any competing package. Its vibrant Super

VGA graphics and animation are outstanding, and the different camera angles flawlessly display the game's excitement. Camera angles can be infinitely changed, and there's the requisite instant replay capability. The game's sound effects realistically convey the raucous crowds and the bone-crunching tackles. Al Michaels' commentary adds novelty and excitement, even if the audio is "clipped" at times.

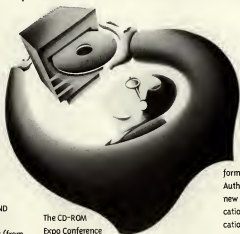
Unnecessary Roughness provides the rough-and-tumble essence of football. This game is PC football at its hard-hitting best. (Accolade; 800-245-7744; DOS, \$59.95)

1 2 3 4 5 6 7 8 9 10

Unnecessary Roughness brings easy-to-play football excitement to the PC with vibrant graphics and outstanding action. It's as much fun as Monday Night Football (maybe even better).

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Calling All Modems

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Once you've decided on a speed, you have to choose between an internal or external model. External modems are easier to set up and configure. Plus you get to watch the little red lights,

which helps pass the time when you're waiting for that Wolfenstein 3D patch to download from the Internet. But you will have to use up a serial port, so if yours are already occupied go with an internal modem. Internal models also tend to be slightly less expensive than external models.

Before you buy an external modem, look on the back of your PC for a free serial port (it's the connection with the pins sticking out). Determine whether it's a 25- or 9-pin connector and get the proper cables.

Fax capability is another consideration. For just a slight additional expense, you can send messages to your off-line friends and take advantage of the fax-support services that most multimedia and game companies offer. You'll be grateful for this easy tech help when you're staring at your 13th error message of the day.

As for software, well, most modems come with communications programs of some sort. Unfortunately, they're generally stripped-down versions of otherwise decent packages. If you're serious about cruising the 'net, you'll want a full-fledged communications package like Procomm Plus for Windows or Microphone II for the Mac. If you can't decide on a software package, spend your first online sessions asking other users for recommendations. This survey should be easy, since all the modems we looked at come with free offers for subscriptions to online services such as America Online, CompuServe, and Prodigy.

To narrow your choices further, we kicked the tires on five reasonably priced 14,400-bps modems. All five include fax support, and one even turns your PC into a voice-mail system.

Price: \$149

Models: Internal PC

Software: Windows fax, data

Warranty: Lifetime

Technical Support: Toll call, BBS, America Online (Cardinal Technologies; 717-293-3000)



Cardinal MVP 144 DSP Fax Upgradable Digital Modem

This internal model is what's known as a software upgradable modem. That means it has a programmable digital signal processor (DSP) at its core. By simply copying new software to the modem's DSP, you can quickly update it to run the newest, fastest communications protocols. You'd have to re-

place a traditional non-DSP modem altogether, or at least buy a new set of chips.

On the other hand, upgrading your modem can be a headache. While most of the process is automated, it's still not as easy as plugging in a new modem, especially an external one.

Still, the Cardinal wins points by coming with a lifetime warranty and Windows communications and fax software.

Because the Cardinal modem is an internal model, be prepared to give up a slot. No

Mac version is available.

Hayes Accura 144 + Fax144

Hayes has always been a top name in modems. In fact, "Hayes-compatible" is the standard. Not surprisingly, the new Hayes Accura line is a safe bet all-around.

Hayes Accura modems are designed with consumers in mind. Everything you need to get online is in the box—including a serial cable. And Hayes gives you plenty of software too: both DOS and Windows fax and communication software with the PC version of the

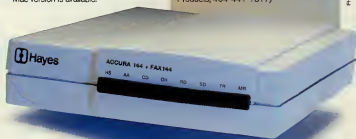
Price: \$299

Models: internal PC, external PC and Mac

Software: DOS, Windows, Mac; fax, data

Warranty: 2 years

Technical Support: Toll call, BBS, CompuServe, GEnie (Hayes Microcomputer Products; 404-441-1617)



PHOTOGRAPHS BY DAN CLARK

Accura, and Mac fax and communications software with the Mac model.

Intel SatisFaction/400e

Without a doubt, this is one of the highest-quality fax/modems around.

The modem itself is built like an anvil. A heavy-gauge power cord supplies the juice to the aluminum-clad SatisFaction, which feels like it could download a file at full speed and drive nails at the same time. The SatisFaction even includes a scanner port so that you can scan in documents you want to fax.

But this modem isn't the easiest thing in the

Price: \$399

Models: External PC

Software: DOS, Windows; fax, data

Warranty: 3 years

Technical Support: Toll call, fax, BBS, CompuServe, MCI Mail (Intel Corp.; 800-538-3373)



world to use. It makes you load drivers into DOS, even if you want to fax only from Windows. You end up lean on memory for running applications. There's also a floppy disk problem: Intel ships its software on 5 1/4-inch disks. (Three-and-a-half-inch disks are available for a shipping fee.) Many systems now ship with only the smaller drives. A word of advice for Intel: Get with the 90s and start using 3 1/2-inch disks.

Practical Peripherals PM14400FXMT

Don't be fooled by the cryptic name. This modem is incredibly easy to install and use. The Practical Peripherals is a minttower modem that can sit flat on the desk or be tipped on its side to save space. You can

read its front-mounted indicator lights either way.

Unlike some modems, Practical Peripherals supplies two well-organized, clear volumes—one for hardware and one for software—rather than a deluge of tiny manuals found with some modems. That means no more hunting for the slim Fax Software for DOS manual that fell behind your bookcase.

The Practical Peripherals, like the Cardinal, also wins kudos for a lifetime warranty (that's your lifetime, not the modem's). Most modem warranties tend to be quite long, but Cardinals and Practical's are exceptional.

About the only slip Practical Peripherals makes is shipping the DOS and Windows software on 5 1/4-inch floppies. You can get

3 1/2-inch disks by mail, but like Intel, this company

needs to realize that truly floppy floppies are a dying breed.

Zoom VFX 14.4V

If you take the time to train it, this modem will do everything but wash your car. The Zoom is a solid modem, like the other four reviewed here, but what sets it apart is that the company has taken the high-speed fax/modem to another level by adding voice mail.

Tired of listening to phone messages that aren't for you? Zoom's software and hardware let you create individual voice mailboxes for you, your spouse, the kids, or your business—up

Price: \$259

Models: Internal PC, external PC and Mac

Software: DOS, Windows, Mac; fax, data

Warranty: Lifetime

Technical Support: Toll call, fax, BBS, CompuServe (Practical Peripherals; 800-442-4774)



to 999 different mailboxes in all. You can even convert received messages into .WAV files and play them back through your PC's sound card.

Voice mail on a PC isn't for everyone, though. Setting up mailboxes takes time. There's a convenience factor missing, too: Most people don't have their computers sitting next to the front door or on the kitchen counter where most answering machines usually are. You also can't be certain that you'll receive your messages after a power surge or loss. But if you want a modem that'll let you play online games and help you run your business, take a look at the Zoom.

Price: \$269

Models: Internal PC and Mac, external PC and Mac

Software: DOS, Windows, Mac; fax, data, voice

Warranty: 7 years

Technical Support: Toll call, fax, BBS, CompuServe (Zoom Telephonics; 800-666-6191)





Now Hear This!

You remember the old drive-in theaters, don't you? You parked your car in a muddy lot facing the biggest screen you ever saw. The last rays of the sun marked the start of the movie in all its three-story glory. Then the notes of the opening theme warbled through that cheesy speaker hung from your car window. All that crackling made it sound like some AM radio station broadcasting out of Bolivia, instead of the year's hottest action flick.

Most speakers included with today's multimedia computer systems sound like that too. And audiophiles know, even the most expensive stereo equipment sounds lousy when it's attached to low-quality speakers. Most PC sound boards don't produce audiophile-quality sound to begin with, so good speakers are even more crucial. Well-made speakers won't correct all the sins of your multimedia sound system, but they'll sure help. A good pair of speakers will make your games come to life and your multimedia titles sing more sweetly, but buying the right pair isn't always a simple matter.

Before you hit the stores, think about what you need from your speakers and how much you're willing to pay for it. The cheapest speakers run \$15 or less—and you get what you pay for. You can find good-quality speakers from well-known audio companies like Altec Lansing, Acoustic Research, or Sony for less than \$100. If you really want to step up, Altec, Acoustic Research, and companies such as Bose, Cambridge Soundworks, and Roland have great-sounding pairs of computer speakers for \$300 and up, though such high-end speakers might be overkill for most multimedia users. It's all up to your ears and your wallet.

Space is another factor. Do you have extra room on your desk, or do you plan to mount the speakers to the sides of your monitor?

Speakers come in many sizes, from tiny (and tiny) to larger "bookshelf" systems. For the best sound, you'll need enough space to place both speakers at the same height and the same distance away from you. That's why wall mounts are a good choice.

Just as important, think about what sort of listening you'll be doing. Will you use the speakers mostly for playing back the blips and beeps featured in arcade games, or are you more the musical type who will be composing and playing General MIDI soundtracks? And what about audio CDs? Does your CD-ROM drive do double duty as your audio CD player?

Some speakers may play certain types of audio well, but others poorly. The only way to know for sure is to give 'em a listen.

Rules to Listen By

Now that you know what you want in a set of speakers, here are some rules to shop by. Make sure the speakers you buy are "magnetically shielded." Speaker magnets can spell death for your monitor and hard drive unless they are sufficiently shielded to keep their magnetic waves at bay.

Not convinced? Remember when you were a kid and you used a magnet to create



multicolored waves on mom and dad's TV screen. It's sure fun when you're eleven, but it's downright annoying if you're trying to play The 7th Guest. It's bad for the monitor to boot. Many manufacturers make shielded speakers for use with both computers and "home theater" systems, and you can find them all over the place, including computer stores, electronics stores, and even stereo shops. Wherever you go, if the speakers don't say "shielded," move on.

Computer speakers must also have sufficient power. Don't even bother with unpowered speakers unless you plan on buying a separate power amplifier to use with them. The amplifiers on most sound cards are puny (only a couple of watts per speaker) compared with even low-end stereo receivers and amplifiers, which can go up to 100 watts or more. And sound card makers don't design the amplifiers on their cards with audiophiles in mind, so amplifier

COMPUTER SPEAKER SHOPPING LIST

Take this list with you to the store to make sure that the speakers you buy meet your needs. Shopping around? Make copies of it for each contender.

Product Name: _____

Price: _____

Location: _____

Notes: _____

Speaker Dimensions:

Yes No

Wall-mount option

Monitor-mount option

Magnetically shielded

Self-powered

Watts:

Yes No

Subwoofer

Equalizer controls

Will store let you test speakers at home?

How test CD sounded

quality tends to suffer. Finally, amplifiers stuck inside your PC aren't on the friendliest turf. Cards and processors all leak electrical signals that can make your sound card's amplifier snap, crackle, and pop unnecessarily.

The amplifiers on good-quality powered speakers are generally more powerful and cleaner than what you'll find on your sound card, and keeping the amplifier away from the inside of your system helps too. To make your powered speakers sound their best, be sure to attach them to the unpowered "line out" jack on your sound card. That's the one that doesn't go through the card's potentially noisy amplifier. If your card doesn't have an unpowered jack, check the manual to see if there is a way to disconnect the amplifier.

Decisions, Decisions

You'll also need to decide on a few other things when picking out speakers, like figuring out what wattage you need. Remember that watts don't equal loudness. Efficient speakers can do more with less, and all those watts could be supplied by a noisy amplifier that you won't want to turn up anyway. How loud the speakers go will also be affected by the output setting on your sound card, so a system that left your ears ringing in the store might not pack as much punch at home if you have a different sound card.

If you want stomach-churning bass, look at systems equipped with a subwoofer. No matter what the manufacturers may claim, the tiny cones in most multimedia speakers just can't move enough air to deliver effective bass. Subwoofers are separate speakers designed specifically to deliver powerful low notes. Because low-frequency sounds are nondirectional (meaning your ear has trouble telling where they're coming from), you put the subwoofer just about anywhere in the



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same room as the speakers. That means a subwoofer can be placed safely away from your monitor and hard drive while still delivering enough oomph to rattle your windows.

Do you want equalizer controls? Some speakers come with treble and bass controls, while others offer just a volume knob. Equalizer controls can help smooth out annoying squeaks and squeals or boost bass to a listenable level.

Hearing Test

When deciding on speakers, rely on your ears, not technical specifications, to measure sound quality. Specs such as frequency response, watts, and woofer and tweeter dimensions might make a speaker sound good on paper but not necessarily in your den or home office.

Bring a favorite CD with you to the store and ask the salesperson to let you listen to it through the speakers you're interested in buying. Since audio CDs deliver sound quality that's far superior to that from multimedia

Top Five Tips for Easy Listening

1 Don't just go by how the speakers sound in the store. They may sound great in the store because they're hooked up to a \$500 sound board, but not so hot when you hook them up to your PC.

2 Don't judge speakers by their technical specs, like frequency response or watts. Instead, trust your ears.

3 If you want to be able to control the speakers' sound, look for speakers with equalizer controls. They'll enable you to fine-tune the sounds coming from your speakers. Some


speakers come with treble and bass controls, but others provide only a volume-level knob.

4 Attach powered speakers to the unpowered "line out" jack on your sound card. That way they bypass the sound card's noisy amplifier. If your sound card doesn't have an unpowered jack, see if there's a way to disconnect the amplifier.

5 For the best sound, no matter what size your speakers, place both speakers at the same height and the same distance away from you.

titles or games, they make a good test. Even better, buy the speakers, set them up at home, and give them a live trial (but make sure you can return them if you don't like them). The system that speakers are attached to can make a big difference—even if it sounds great in the store, you might be dis-

appointed when you get home. At the same time, speakers that don't sound so hot on a noisy sales floor might be perfect in the relative quiet of your living room.

So do your ears a favor: Take some time and listen, listen, listen before you buy. Your multimedia experience will be all the better for it. 

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Give Boot Disks the Boot

Is there a program that will allow me to choose the configuration I want each time I start up my system? I ask because we all know how these new games eat memory for breakfast, lunch, and dinner. I prefer to load my favorite games on my PC and store their floppy disks out of the way. But I'm still stuck with a bunch of "boot disks" that I have to keep by the computer since each game wants its own way with my memory.

Ray Oringer
Ketchikan, Alaska

Ah, boot disks! At least the more conscientious companies supply you with a semiautomated way to create a boot disk for their particular game instead of leaving you to your own devices. But you still end up shuffling among a stack of disks to run all your favorite games. And how often can you actually find the right boot disk when you need it, eh?

Sure, you could create a tedious assortment of batch files that would start the proper configuration for each game. Then you'd run one of these puppies to change your current configuration files, hopefully without overwriting other game configurations you want to keep. What a hassle.

Rejoice: There is an alternative! You can free yourself from boot-disk fascism and retake control of your PC with products designed to make your life simpler. Surprisingly, one of these gems comes directly from Microsoft (that's right, the company that took ten years to eradicate EOU.N). MS-DOS 6 and later lets you choose among multiple system configurations from a menu each time you boot your computer. For example, the menu item Windoze might launch you directly into Windows 3.1, while another choice labeled Maxed Out would eliminate all extraneous device drivers, freeing up more memory for the real RAM hogs.

Creating this menu is fairly simple, too: You divide your CONFIG.SYS and AUTOEXEC.BAT files into "configuration blocks" that contain the

proper drivers and such for each game or program. Each block gets a name that corresponds to its menu label. So when you select a menu item the boot process executes only those commands in that particular configuration block. If you have drivers that are common to all of your configurations, like a mouse driver, you can store them in a main block that is run every time you boot up. Voilà! No more boot disks! (Look in your MS-DOS 6 manual under "Multiple Configurations" for detailed information. You do still have your manuals, right?)



If you have a moral objection to handing over any more of your hard-earned money to Microsoft by upgrading to DOS 6, you can support shareware instead. There are several "multiboot" programs that let you pick and choose how your PC will behave at boot-up time.

One reader, W. Scott Gibson, suggests a program called Autocon by Larry Weaver. You should also check out another utility called Configuration Editor by Ira T. Ashkenes. Both work like MS-DOS 6 but can be used with older DOS versions. You can find both programs on a variety of bulletin board systems, including CompuServe.

Good-bye boot-disk shuffle, getting the graphics you paid for, and speeding up CD-ROM.

What You See Ain't Always What You Get

When I load up a new game at home, why doesn't it look the same as the screens shown on its box?

Dave Stanton
Orlando, Florida

Come on, I'm sure your fourth-grade teacher told you never to judge a book by its cover. So why would you judge a game by its box? Some game vendors play by the rules and use only box art that accurately represents what the game will look like when you play it. Others figure a little glitz and glamour can't really hurt, and it can only help sales, right? These tricky types sometimes use the original high-resolution graphics on which the game is based instead of the actual "gameplay" images. Those top-end, multibillion-color shots sure look good, and they should. It probably took a superpowered graphics workstation a whole day to create them.

You, of course, don't have all day to wait for a single screen to appear on your monitor, so game developers reduce the number of colors and cut back on the clarity of the images for the version they ship to you.

A slightly less sneaky tactic is to show the highest-quality image that the game is capable of. If you have a lower-res video card or monitor, or even less memory, you might not see the same pretty pictures.

If you really want to make sure you're going to see something that resembles what's on the box, look for games that say something like "Actual PC Screens" under the screen shots. And be prepared to shell out some big bucks for the best graphics hardware you can get.

Pegging MPEG

Do the computer games in MPEG format play on a CD-I or any other game machine that has an MPEG upgrade?

David W. Shaw
Stentale, Colorado

Will cassettes work in your CD player? Will records play in your 8-track? Same answer.

MPEG defines a common standard for compressing video. It's being used (or soon will be) on a variety of platforms, including PCs, Macs, CD², 3DO, and CD-i. Even so, it doesn't let games built for one platform run on the others. That's more work than a simple graphics standard could be expected to do.

Now, there may be some MPEG titles that will run on all of those platforms. I'm talking about those MPEG movies on CD-ROM you've heard hyped by movie makers and hardware vendors alike. Commodore says that a CD² player with an MPEG upgrade can play MPEG movies made for the CD-i, and Sigma Designs claims the same thing for its ReelMagic MPEG multimedia upgrade kit for PCs. 3DO is promising to do it too. So you'll at least have access to MPEG movies, even if the games are still out of reach.

Time On Your Side

I have a nice alternative to slow CD-ROM drives that I am sure others have thought of already. I use my machine for games 90 percent of the time, and I wanted to run CD-based ones but was not really impressed with the speed of any CD-ROM drives I've seen.

So I bought a single-speed CD-ROM

drive and a 425MB hard drive, which I've doubled to 850MB with Stacker. As you probably know, games don't compress all that well, but I'm still getting anywhere from a 1.5:1 to 1.7:1 compression rate, which allows me to put over 600MB on the drive. I am getting a 1.5MB/second transfer rate, and the games run quite nicely. The price of the hard drive and the CD-ROM was around \$900—not much more than some of the new (triple-speed) drives.

Tim Tomasco
Regina, Saskatchewan

That's a very interesting idea. For only \$900 you get lightning access times and laser transfer rates. With a single ingenious swipe you've effectively created a "decuple-speed" (that's ten times) drive years before CD-ROM drive vendors have.

With that same swipe you've also managed to eliminate nearly every benefit of the CD-ROM format. For starters, you neglected to mention how long it takes you to fill that monster hard drive each time you want to play a new CD-based game. I figure, with a single-speed drive, you're going to need about an hour to load a game that uses most of the CD, upwards of 600MB. What do you do if someone

comes over and wants to see that cool new game you've mentioned, but it's not the one loaded on your hard drive? That single-speed CD-ROM drive won't cut it for most titles, so what do you say? "OK, I'll just start loading the game," and then suggest going out for a pizza? And, every time you want to change games, you have to format the disk or delete the entire thing. That could take forever, too.

I'm sure a few people are so enamored with their favorite games that they may follow your lead, but for my nickel, I'll stick with the silver discs and minor delays.

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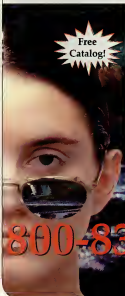
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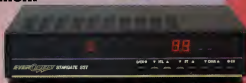
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Video Dial Tone

If the regulators ever let it happen, video dial tone will change the world.

A technological advance that will make sending and receiving two-way video programming as easy as making or getting a phone call, video dial tone consists of a nationwide broadband delivery network connected by a sophisticated switching system. Think of it as a souped-up, high-powered version of the telephone network, able to carry full-motion video as well as voice conversations.

As the fast lane on the so-called data superhighway, video dial tone will change the way we shop, learn, meet, and play. It'll create millions of jobs and probably destroy as many more. After all, something's got to happen when a handful of distribution channels available to a privileged few blossoms into a multitude of channels suddenly available to almost everyone.

Its biggest effect, for better or worse, will be to alter the role of marketing as we know it. If you don't believe it, just stop and consider how many products and services there are in the world, how many people need a specific product, and how rarely the twain meet. With mass-market media such as magazines and TV, advertisers can never be sure exactly who's reading or watching. And the difficulty of getting shelf space in crowded stores to display a new product is legendary.

Once everyone can turn on a TV or computer and tune into a video dial tone, those problems are history. For the first time, it will become profitable to market specialty products to small groups of specifically targeted customers.

Using the switched video network, entrepreneurs or inventors who come up with an idea for a product would put out a request for designers, manufacturers, marketers, and investors. Fledgling companies could display their products on a special channel to attract

support in exchange for a percentage of profits. A video auction market might even develop that becomes entertainment in itself—people would try to guess the potential for success of ideas and products.

Speaking of entertainment, video dial tone will let game designers publish their work and let people buy it on a per-play basis, a kind of shareware with mandatory billing. This would let small game makers actually make some money off their creations. It would be far easier than downloading games from bulletin boards, and you wouldn't pay for repeat plays of games you didn't like. Look for more and better games as a result.

Video dial tone isn't just about games, though. How many people do you know who'd like to be in the movie business? There are thousands of people who can tell wonderful stories and who may have the ability to turn those stories into entertaining movies.

The availability of video dial tone will let actors, screenwriters, directors, producers, and videographers use cheaply available video equipment to create their work, without all the Hollywood studio overhead and distribution costs that balloon budgets into the megamillions. As in marketing, actors and technical people will work for a percentage of the profits.

Upon release, the producer will simply call up the phone/cable company, upload the movie, and receive a 900 video number.

When anyone can get into the game, I bet we'll see an explosion of new movies, including cult efforts catering to all types of groups and subgroups—the left-handed, chess play-

ers, geriatrics, cat owners, you name it.

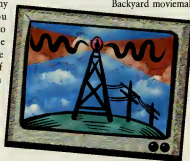
But how will you know what to watch? After all, there will probably be some excellent home-brewed masterpieces and a whole lot of real dogs. Savvy producers would make previews to convince you to check out their creations. Maybe the previews could take up a couple of channels by themselves. In fact, unscrupulous producers might be tempted to put all their money and effort into the preview instead of the actual movie. Before we know it, we'll end up with a Congressional debate about preview regulation, and a whole new set of crazy issues will suddenly seem important.

A better solution may arise on its own. Backyard moviemaking might give rise to

a second level of business—backyard critics! Reviewers will watch all the offerings in a given category and use the video network to sell ratings of the movies. For a few bucks, you could watch their critiques complete with clips from the movies.

Video dial tone will also affect education, strengthening the link between school and home. The idea of work will continue to change, becoming even more individualized. Who needs to commute when your video dial tone offers all the business information you need? Video dial tone will make the world much bigger and much smaller at the same time. I can't wait.

Nolan K. Bushnell invented Pong, founded Atari, and created Chuck E. Cheese. He is currently chairman of Octus, in San Diego, California, the maker of PTA software. Write him c/o Electronic Entertainment.



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