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JOHNNY WILSON

With Friends Like Us...

Do Editors Pander to Their Friends and Skewer Their Enemies?

A newspaper reporter who worked the Washington, D.C. beat once lectured me about fraternizing with the industry. He complained that you couldn't attend cocktail parties with the people you cover on one night and write a critical article about them the next day. I protected that his argument was based upon his work experience, in which people were often the issue, and suggested that there was a tremendous difference when product is the issue. I said that good people can and do make bad product. I insisted that I could like people and not like their products. I observed that I had been to numerous industry parties or events where games were touted to which we later gave bad reviews. The product is what counts.

Last year, I played golf with a CEO who is well-known in this industry. I discovered that he had thought for years that I didn't really like him. He thought his products had gotten negative reviews because I didn't like him. Strangely enough, I do like the guy and that never factored into the reviews. Why? Because our duty is to you, the readers, not to the people we like in the industry.

Recently, I was out with the co-founder of one of the great developers in the industry. He expressed fear that my anger with one of his team members (who had unabashedly lied to me) was going to hurt them in coverage of an upcoming game (a potential mega-hit). With surprise, I reminded him of how long I'm beginning to think that I'm perceived as a Don Corleone figure by some of these industry leaders. "All I wanted was to be your friend, but because you have shown me such disrespect I must cause your products to sleep with the fishes." That just doesn't make sense.

If we, as editors, target specific companies and individuals and review their products based on something other than the products, our credibility will fail. You would be able to tell if we suddenly had a vendetta against one company or another. You would see a pattern where all games by that company were treated unfairly.

"You would be able to tell if we had a vendetta against a company!"

Here is the editorial process we go through in order to see that each product, no matter what we think of the people at a given company, is treated fairly. First, we seek to match the game and the reviewer. There is no point having a person review a soccer game if he hates soccer. Likewise, we wouldn't use a person who doesn't know anything about the sport. There must be both interest and expertise in the subject matter and style of the game.

Second, we expect the reviewer to play the entire game. There is no way to adequately judge the play balance, pacing, and fatigue/frustration factor in a game other than to play it. Sneak previews aren't based on play-balanced, paced, and finished code, so we don't require the previewers to finish the game. However, it is vital for reviewers to do so.

Third, a section editor (the editor with expertise within a given genre) edits the review. This edit is not merely to fix grammatical errors, but to ask questions of the article. "Is the idiosyncrasy a design flaw or a feature? Does the reviewer have a blind spot? Is this criticism fair in light of the design and state of technology? Is this merely a concern to the reviewer or is it relevant for most of the audience?" Sometimes, this requires conversations with the reviewer to hash out all of the details. Sometimes, changing the copy to reflect a more precise wording is necessary.

Fourth, all of the editors who have played any of the game formally consider the recommended rating from the reviewer. The main points of the reviewer's criticisms are considered and debated among the editorial staff before the final rating is set and the review is published. Sometimes, two or more editors will go back to play the game to settle a given point. The rating is not decided until a consensus is reached.

This philosophy protects you from the possible prejudice of one reviewer, one editor, or one editor-in-chief. The process reduces the probability of one person getting so angry at one program, one company, or one person in that company that it transforms a review into a hit piece. Our goal at Computer Gaming World has always been to provide the most balanced coverage possible. In fact, if someone asked us to have a vendetta against a company or individual, we'd have to answer à la Don Corleone, "That I cannot do! You asked for justice. This isn't justice!"
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If your PC runs a Pentium 166 or slower, you’re probably frustrated by the system requirements of the latest round of flight sims. Sure, 3D clouds, 1024x768 resolution, and detailed virtual cockpits are wonderful, but not when they run like a slide show on your formerly hot computer.

Playing beta versions of titles like WWII Fighters and Falcon 4.0 told me that the old P166 wasn’t going to cut it anymore. Oh, the games would run, but not in all their glory. It was time to build a PC that could run the next generation of sims at full bore.

Top-of-the-line gaming PCs can now be put together for less than $1,500. I could have purchased an off-the-shelf system for about the same cost, but by building it myself I was able to make sure that my rig would have the best mix of performance and sim compatibility.

Follow me now as I encroach a bit on the territory of CGW’s tech lords Dave Salvator and Loyd Case and put together an ultimate gaming machine—one that’s tuned specifically for flight sims. Once you have the parts, building a PC requires only a Phillips head screwdriver and a good dose of patience. Still, if you’ve never done this kind of thing, you should find a techie friend to help you get started.

The central part of any PC is the motherboard, which holds the processor, memory, and expansion cards. I chose Abit’s new BH6 motherboard because one of its features is its ISA slots and one AGP slot, so it gives me room for expansion. Plus, Abit’s designs do away with those annoying jumpers, allowing you to adjust processor speed and other parameters from the setup menu. This could be important to daredevil users who want to overclock their systems.

For the processor chip, I chose the boxed Intel Pentium II/400. You can find bare OEM processors for $30 to $100 less, but they generally come with a short, dealer-only warranty—often two weeks or less. The extra $30 is worth the peace of mind you get with a three-year manufacturer warranty.

Because the 400MHz processor runs on a 100MHz system bus, I made sure to purchase memory rated for that speed—a single 128MB PC100 DIMM. I wouldn’t suggest anything less than 64MB, especially if you’re going to run Windows 98.

After the processor, the most important component for flight sim performance is the 3D video card. Because I was shooting for both ultimate performance as well as maximum game compatibility, I chose a pair of Canopus Pure 3D II Voodoo² cards. Although there are now other chips that can match the speed of the 3Dfx Voodoo², only the 3Dfx cards support all three major 3D standards: Direct3D, OpenGL, and Glide. By adding the second card, you get a slight speed boost as well as access to a maximum z-buffered resolution of 1024x768 (versus 800x600 with a single card). Note that a single Voodoo² is probably enough for all but the most demanding sim fans.

For 2D video, I wanted a card with decent 3D capabilities as well for use in sims like Flight Sim 98, which can take advantage of 3D in a window (the one capability 3Dfx cards lack). I chose the ATI All-in-Wonder Pro for its TV and video-capture capabilities. If you are on a budget, the ATI Xpert98 offers similar capabilities without the TV tuner.

For sound, I decided to stick with my vintage Sound Blaster 16 card because of compatibility concerns. The new PCI-based 3D audio cards sound dramatically better, but many have compatibility problems with various game controllers and real-mode DOS games. If you want a PCI solution, the Turtle Beach Montego offers superb sound and a good level of DOS compatibility—although a few users have reported conflicts with some digital controllers. If pure sound quality is king in your book, go for the Diamond Monster Sound MX200.

For storage, I chose a Toshiba IDE DVD-ROM drive. It cost little more than a standard CD-ROM drive and also offered the ability to watch DVD films using ATI’s software player. On the hard-drive front, the Maxtor DiamondMax 11.5GB drive offered both speed and plenty of storage. Going with a SCSI setup would have offered even better performance, but the high cost of SCSI hard drives outweighed the performance boost.

I added a floppy drive, a generic ATX case, and a Microsoft Natural Keyboard Elite and IntelliMouse. Finally, I plugged in my CH Force FX, Pro Throttle, and Pro Pedals, and installed Windows 98. I fired up the rig, loaded the beta version of WWII Fighters, and the game ran silky smooth at 1024x768.

Mission accomplished! Now I had a rig that would run the hottest games at full speed—at least for the next year or so.

It’s time to build a PC that can run the next generation of sims at full bore.

PUSHING IT TO THE LIMIT—AND BEYOND

It used to be that the best price/performance ratio came from buying the second-fastest Intel processor. That’s what I chose to do, selecting a Pentium II/400 rather than the only marginally faster 450. But if you’re adventurous, you can put together a very speedy system for hundreds less by purchasing a 266MHz Intel Celeron chip and installing it on a board like the BH6, which allows you to overclock this under $500 chip to 400 or even 448MHz. A 400MHz Celeron will run the typical PC game at about the same speed as a 300MHz Pentium II. What’s the downside? When you overclock a chip, you can shorten its life, potentially damage system components, and sometimes end up with an unstable system. Some chips may not work at all at 400MHz. Because of this, CGW’s official stance is that we don’t recommend overclocking. But if you’re on a tight budget and want to live on the edge, the 266MHz Celeron paired with a board like the BH6 may be the ticket to cheap speed. For more information on overclocking, check out www.sysopt.com/ overc.html and jeffshardware.computerheaven.net.
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Myth Busters

Stories That Aren’t Fit to Print, but Circulate Anyway

Every year has its share of pseudojournalistic bits about the computer gaming industry. My favorite from 1997 had several journalists—none of whom had evidently played a game prior to 1995—questioning whether Sid Meier (who gave us PIRATES, RAILROAD TYCOON, F-19 STEALTH FIGHTER, and a number of action games) could design a real-time strategy game. As these “scans” get repeated, gamers who are usually rational start worrying, and fevered debates dominate many a newsgroup. 1998 is no exception, and so my holiday gift to you is a bucket of cold water. I hope you find dousing these “burning fires” as refreshing as I did.

Myth #1: Turn-based Games Are Dead

Rubbish. Anyone who has enjoyed MIGHT & MAGIC VI knows that a lot of the game’s appeal comes from having both turn-based and real-time modes. As we go to press, PEOPLE’S GENERAL is selling well, and I doubt that EA will demand anytime soon that SID MEIER’S ALPHA CENTAURI have a real-time option. On my most recent road trip, 9 of 12 publishers had a turn-based strategy game in development, and the other 3 were considering turn-based titles to balance out their product lines. Look for titles like CHAOS GATE, JAGGED ALLIANCE II, and BIRTH OF THE FEDERATION to snap turn-based games out of the doldrums.

Myth #2: Real-time Games Are Dying

More rubbish. The recent poor sales of several real-time strategy games (RTS) have alarmed the retail industry, which always feels so original that they’d be just as awful when played turn-based. In any case, whenever you have a fresh idea combined with challenging gameplay, your product sells—as the megahits STARCAST and AGE OF EMPIRES show.

Myth #3: I-Magic Is Getting Out of the Wargame Business

First, you have to assume that the folks from North Carolina were ever really in the wargame business, which is admittedly a bit of a stretch. I-Magic’s sales have never threatened to eclipse those of TalonSoft or SSI, even with quasi-historical titles such as SEVEN KINGDOMS. I-Magic did publish the GREAT BATTLES OF HISTORY series, of which JULIUS CESAR is still worth a look. The odd thing is that while I-Magic has given up on bringing the rest of the Great Battles boardgame series to the PC—a real shame for fans of Samurai in particular (where are the Koi guys when you need them?)—it is using the Eurite Software engine from GREAT BATTLES for a totally new game, NORTH VS. SOUTH. CEO BILL STALEY can talk all he wants about crafting “mainstream hits” since I-Magic went public, but the truth is that the company needs sales and cash you’re going to be suffering some serious withdrawal pains. If you can show a little patience, you’ll be fine. FIGHTING SAIL looks to be everything that GREAT NAVAL BATTLES wasn’t, and Grygby and Brors are hard at work on STEEL PANTHERS IV.

Myth #5: The Industry Is Doomed

For the past several years, various Wall Street pundits have complained to everyone who would listen that the computer gaming industry was doomed by “bad business models.” The truth is, wherever you have vulture capitalists, panic follows soon after. Aside from companies like CUC—which claimed, in a fit of creative accounting, to have lost money with back-to-back million-sellers WARCRAFT II, DIABLO, and

The retail industry always feels most comfortable when analyzing sales trends from two years ago.
Rigor Motorist

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Targeting Canada

Your October issue had a disturbing ad for a Psygnosis game called Global Domination (page 103). The ad says "BAD DAY? Take it out on Canada (no hard feelings, eh?)." I’m Canadien and I know lots of people who are Canadien who subscribe to your magazine, and we’re not ready to take this kind of crap. Some of them are considering canceling their subscription to your mag (not me), so you guys and the people at Psygnosis should lay off the crap about Canada because you might lose some of your subscribers here.

We’re not holding you guys directly responsible but blaming you a bit for putting that dumb ad in the magazine.

—Hugh Jass
Via the Internet

Johnny Wilson responds: Your letter confirms the dreaded rumors we had heard of the demise of a Canadian sense of humor. We didn’t want to believe it. Canada has been the source of some of our best humorists and some of the freshest television comedy. Yet, it seems that some Canadians don’t understand the ridiculously hyperbolic nature of the Global Domination ad.

For the record, I did not have the opportunity to review the ad, but even if I had I wouldn’t have rejected it. Also, for the record, I think the Canadian National Anthem is FAR better than the U.S. national anthem; the Canadian government’s approach to the arts is far more enlightened than that of the U.S.; that the Canadian Rockies are more impressive than the U.S. Rockies; that lacrosse is more exciting to watch than golf (heck, curling is more exciting to watch than golf); that your House of Commons is more interesting than our House of Representatives; and that Montreal will once again be a great hockey team.

Incidentally, what kind of a name is Hugh Jass? Sounds like one of Bart Simpson’s phone pranks. "Is there a Hugh Jass there?"

Synergistic Software

Your November Read Me article ("For Sale: Cendant Software," pg. 371) failed to mention another "important entity" that was affected by the CUC takeover of Sierra On-line et al. Synergistic Software. Synergistic was founded in 1978 by Robert and Ann Clardy. The company produced more than 150 titles, including Thexder and Spirit of Excalibur, and more recently Birthright and Hellfire, the add-on for Diablo.

CUC’s acquisition of Sierra precipitated the disintegration of the Synergistic division—which was purchased by Sierra in 1995—last year. However, the founders are currently in negotiations to form a new development company, working title “Eclectic Games.”

—Jeff Renaud
British Columbia, Canada
Via the Internet

Loyd Worship

One of the best features of your magazine isn’t printed on gloss stock. It’s not a fold-out. It’s not even a cover story. It’s a person, Loyd Case. I’ve been a reader for years as well as a subscriber. I wanted to know what games I should buy hopefully in time to avoid buying garbage, so I turned to you. I’ve also been a bit of a system builder to support these games. Over the past six months, I’ve been building my own version of a cross between Loyd’s No Holds Barred and Lean Machines, as my budget permits. Using the components in these machines as a loose guide I built a machine which, by all accounts, should keep me happily gaming for another two years. I ran each important part by Loyd Case. Despite his busy schedule, Loyd added his two cents where appropriate and eased my mind about what I was about to buy. Last week, I bought the last piece of this system, the CPU, I was thrilled! I’d been testing the system previously with a borrowed CPU and all went well. BUT, with the new CPU I was getting errors.

Through lots of research, phone calls (no thanks to Microsoft’s "support"), and sleepless nights I started to see a light at the end of the tunnel. That light was amplified when Loyd gave me his insights as well. In the end the problem was resolved (Ultra DMA requirements, Seagate Medalist Pro 6.5 GB drive, integrated IDE, and of course MS Windows 98 all played a part). I would like to formally thank Loyd Case and Computer Gaming World for their parts in getting my system online and ready to play. With a guy like Loyd on your staff, you
Even Myths become real on a Falcon
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guys aren’t just a gaming magazine, you’re a computing professional’s magazine too. Keep up the good work!
—Jim Pierce
Tacoma, WA
Via the Internet

CH F-16 Combat Stick
Let me congratulate you on a great magazine. I received the October issue at work, and found great reason to shirk my responsibilities. I was equally excited when I saw Dave Salvator and Loyd Cases’ contribution on the “Killer Rigs” page. Just what I needed—I’m in the market for a good flight stick for under $50. Once I saw the CH F-16 Combat Stick on the list for $34, I immediately jumped onto the CH Products Web site. Only once I got there, much to my dismay, I saw the CH F-16 priced at $89! What gives?
—Steve Murphy

Unfortunately we did print the wrong price in the October issue. However we have seen the F-16 Combat Stick on the street for $49. In addition, Flight Sim Central has the Jane’s F-16 Combat Stick, a slightly higher-end model, for $69. Pricewatch reports two entries around $60.

The $89 price is only if you order it directly from CH Products.

Wherefore Art Thou Scorpius?
It has been 4-5 months since the last of Scorpius’ articles or columns graced the pages of the magazine. She was the best reviewer of the sort of games I’ve always enjoyed that CGW has had (I’ve been reading the magazine for over 12 years now), and I’ve looked in vain a couple of times at these Web sites that are supposed to be where CGW has a Web presence, without seeing anything about her or written by her. What’s the deal, folks?
—Kiwi
Via the Internet

We think she ran off with Martin Cirulis. Just kidding. Scorpius is alive and well and will continue to review games for CGW. She offers her patented brand of dungeoneering pointers this month on Might & Magic VI, and next month she’ll be back with a new game review. Everyone needs a little time now and again to sharpen their claws.

Really, It’s Hard Work
I just finished reading your articles in the October issue of CGW. I look forward to each issue and your often humorous slants on
technology and software. This latest couple on video cards and “how graphics work” articles helped me decide exactly what I’m looking for in a video card. I do enjoy your expertise. Though I am a little jealous of your ability to be paid for “playing” with the new equipment.

—Bill Szuch
Via the Internet

Fresh Filler
Since Jeff Green’s article in your October issue, I’ve made it a point to only read the ads and pass over those annoying “filler” articles in your fine magazine. While flipping through November’s issue, I came upon Empire Interactive’s ad for 101st airborne in Normandy. What immediately struck me was the shield insignia, a United States flag. Gone was the trademark screaming eagle of that most famous WWII airborne unit. I checked back issues; sure enough, the screaming eagle appeared in all previous ads. Where did the screaming eagle insignia go? Can you make a right turn off the elevator and ask sales why the eagle was replaced?

I also spotted Advent’s ad in the November issue. After seeing the picture of the woman chained and collared like an animal, I deep-sixed my Advent speakers and went shopping for a different vendor. I, of course, referred to your “filler” article on speakers before making my choice.

—Sir Galahad
Via the Internet

Amphetamine Boy
I recently entered a contest to win a Voodoo® where they asked to describe in 50 words or less why you deserve to win this prestigious prize. My reply was as follows:
I want to know what it feels like to have your mouth turn inside out, shooting your teeth through the back of your skull, to have your tongue stretched so you can now scratch the back of your head, and to not care about it because your eyes have enlarged 4x their normal size, and you can’t feel your body cause your jaw has torn away all the skin and smashed your toes in one supersonic motion.
Are you saying you wish to deny me of this experience? NOOOOOO!!!
—Drew Fortey
Via the Internet

CGW Archivist of the Month
One of my favorite parts of the magazine is the Hall of Fame. I feel that every game on the list deserves to be honored. However, I have noticed mistakes with the dates listed next to the games (which I am assuming are the original publishing dates). I know for a fact that I was playing Gunship long before 1989. However, not being an established or well-known expert on the subject, I decided to do some research on the matter before bringing it to your attention. Of course, I relied on my primary source of computer gaming information, and it did not let me down. If you will look at issue number 54 of your fine magazine, the December 1988 issue, you will see that Gunship is already in the Hall of Fame. Also note that SimCity, a game reportedly published in 1987, is not in the Hall of Fame or even on the top 50 strategy games list.

—Travis Hamer
Via the Internet

DEPT. OF CORRECTIONS
In our November issue we incorrectly listed a price of $99.95 for NASCAR Racing 1999 Edition. The new edition is actually $49.95, but Sierra offers a $20 rebate for owners of NASCAR Racing II. The 1999 Edition includes a full version of NASCAR Racing II, updated from the 1998 edition, plus the Bush Series Grand National and the Craftsman Truck Series. In our November story about Cendant software, we identified HFS, the company that merged with CUC to form Cendant Corp., as Household Finance Services. HFS actually stands for Hospitality Franchise Systems. We apologize for the error.
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For the best in gaming, turn to the experts at GameSpot and CGW Online. You'll find a wealth of news, reviews, and previews as well as cool demos and hard-core strategies for all of the hottest games. You'll also find excellent technical advice and game-based hardware reviews from technical guru Loyd Case. Don't waste time or hard-earned cash—when you need accurate information, read what the pros have to say at www.gamespot.com.

GAMESPOT

Special Reports

ECTS '98 News Coverage!
GameSpot UK pulled out all the stops and—with some help from GameSpot U.S., ZDNet UK, and PC Gaming World—posted definitive news coverage of this year's European Computer Trade Show. The big games were all there, including Diablo II, Max Payne, Darkstalker, Half-Life, Kung Fu, Honor Guard, and more.

Hot Reviews

GameSpot is ready for the holiday rush with tons of reviews to help you in your gift-buying (and receiving) frenzy. Check out these top picks:

Rainbow Six
Take control of an international team of supersecret operatives, doing the dirty work other nations wouldn't publicly touch. While generally better than Spec Ops, Rainbow Six carries its own baggage, especially where the conflict of realism vs. gameplay rears its ugly head. Find out why you should stuff your stocking with this action game.

Commandos: Behind Enemy Lines
This sleeper strategy game will please fans of strategic combat, puzzle-solving, and WWII era warfare alike. GameSpot's Greg Kasavin found it a genuinely original game of tactics, planning, and precision.

Mortal Kombat 4
Midway's popular fighting-game series goes 3D—and gets an excellent translation on the PC. The fourth time around the game has gone polygonal, giving the developers much more leeway when it comes to adding new moves, holds, and characters. GameSpot had an expert review this game—videogames.com reviews editor Jeff Gerstmann.

Warlords III: Darklords Rising
Command a fantasy army in Warlords III: Darklords Rising, the game that reaffirms Red Orb's franchise as one of the best strategy series around. It's what Reign of Heroes fans have been waiting for.

Motocross Madness
Microsoft's new driving game offers everything you could hope for in a motocross simulation and then some, with its multitude of modes and good terrain graphics. Hop on your bike and get ready for some virtual motocross fun.

GAMEGUIDES.COM

Be sure to make GameSpot's GameGuides.com your one-stop shop for strategy guides on the Web. Just enter www.gameguides.com in your browser to find strategies, hints, tips, and walkthroughs for these games:

Tom Clancy's Rainbow Six
As secret operative Six, you'll learn the best way to lead your team of commandos through some of the toughest anti-terrorist campaigns this side of La Femme Nikita. Check it out on the Web or download it!

Syphon's Unofficial Final Fantasy VII Strategies and Secrets
You get a complete walkthrough; gameplay strategies, hints, and tips; incredible tables for every monster, item, weapon, and materia; and advice for breeding chocobos!

Unreal
Learn the best path through each level, the puzzle solutions, the locations of secret rooms, the strategies for defeating all the foes, and the gameplay cheating.

Other Strategy Guides:
StarCraft
Soldiers at War
Age of Empires
YOU HAVE BEEN SELECTED TO LEAD THE ROGUE SQUADRON IN COMBAT AGAINST THE EMPIRE.

HERE'S YOUR DRAFT CARD.

Your draft card? A 3D accelerator card, of course. It's the mandatory hardware necessary for you to enlist in a brand new, rapid-fire Star Wars air combat experience - Rogue Squadron 3D. Immerse yourself in the role of Luke Skywalker, leader of the Rebel Alliance's elite air corps, as you pilot a broad range of well-armed starfighters. From X-wings, Y-wings and A-wings to snowspeeders, you'll be able to unleash Rebel weaponry on the evil Empire in over 15 missions (day and night) - each spanning the vast Star Wars universe. Blast AT-ATs, TIE fighters, Imperial shuttles and more. Strap in, young Skywalker. It's the fight (and flight) of your life.

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ON THE CG-ROM

Speed Thrills
Hit the Road With Four Racing Games and 15 Demos

If you love driving or racing games, this is the demo disc for you. Our lead demo, NEED FOR SPEED III: HOT PURSUIT, is the new arcade racer from EA that showcases beautiful 3D acceleration and has force-feedback support. Speed Busters, previewed in this issue, is another hot racing title on this month's disc. In it, you'll get to race the Hollywood track and sample the damage model. If you're into either realistic motorcycle or Grand Prix racing, check out CASTROL HONDA SUPERKING WORLD CHAMPIONS OF JUNGHANU HOME'S GRAND PRIX 1998.

Friends, Romans, countrymen: boot up the CAESAR III demo. You'll get to play two scenarios focused on city management.

Flying fans should load up ISRAELI AIR FORCE to get a break from the all-American sim fare. Also check out IFIA-18 CARRIER STRIKE FIGHTER.

For action fans, we've got RETURN FIRE 2, JAZZ JACKRABBIT 2, CROP CIRCLES, and MONTZUMA'S RETURN, the 3D-accelerated sequel to the classic platform game, MONTZUMA'S REVENGE.

Strategy lovers will get into the PEOPLE'S GENERAL demo or KNIGHTS & MERCHANTS. Whatever your interest, with 19 demos on this month's disc you're sure to find something that turns you on.

How to Use the Disc
The CD is AutoPlay-enabled and should begin upon loading it into the CD-ROM drive. Otherwise, from the Start Menu in Windows 95, type D: \RUN-ME (where D is the letter of your CD-ROM drive) to run it straight from the CD. You may type D: \INSTALL to create a CGW program group on your Windows desktop for future fun. To run, many demos require the disc to be in the CD-ROM drive in order to run; therefore, we recommend installing the demos from our disc.

To Get the CD-ROM
To subscribe to the CD-ROM version of CGW, call (303) 665-8930. If you already receive the magazine without the CD, you must wait until your current subscription expires before receiving the CD version. Please address subscription complaints to cgw@neodata.com. Neodata is a magazine fulfillment house, which is not owned or operated by Ziff-Davis.

December CD Titles

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NEED FOR SPEED III
See if you can outrace your opponent and the cops in this amazing new arcade racer.

SPEEDBUSTERS
Read the preview this month, then play the demo on disc.

CAESAR III
See if you can handle being a Roman Governor; some assembly required.

ISRAELI AIR FORCE
Take a spin in Israel's newest fighter, the Lavi, in this state-of-the-art fighter sim.
PINBALL HEAD TO HEAD
FOR THE FIRST TIME EVER!

SET YOUR FINGERS FLYING AND YOUR SENSES REELING BY EMBARKING ON THE MOST NAIL-BITING ADRENALINE-PUMPING PINBALL EXTRAVAGANZA EVER TO HIT THE HIGHWAYS. OOZING CHARACTER AND ORIGINALITY FROM EVERY PORE, BIG RACE USA WILL LEAVE YOUR WHEELS SPINNING AND YOUR HEART POUNDING.

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Dead Reckoning supports user add-on levels (Editor included). Additional levels submitted by users will be available for free download from time to time at www.deadreckoning.net. Check www.deadreckoning.net regularly for future contests, add on levels and updates.
ACTION IS BOUND TO BE HARD TO SWALLOW
Giant Killer
Be One Big Badass in SLAVE ZERO

Giant robot games are becoming as common as a wasp in your beer, but SLAVE ZERO takes an entirely new approach: Enormous mechanical warriors duke it out amid towering skyscrapers, grabbing pedestrians, hurling vehicles, and spraying fire on anything that moves.

If, by some act of a very considerate God, you were put inside a 60-foot, bullet-spraying, rocket launching, biomechanical robot, probably the last things on your mind would be heat management and waypoints. No, most likely you’d be trying to hit a skyscraper with a bus you just picked up. SLAVE ZERO lets you do this and then some, in gigantic, futuristic city environments teeming with targets—ex, life. The amount of activity is dizzying, with screaming pedestrians, speeding vehicles, swooping attack helicopters, crumbling structures, and, of course, other giant robots.

At the center of this maelstrom is you, part of a larger rebellion force striving to wrest control of the city away from an evil dictator. The odds seem hopelessly stacked against you ever since the development of the dictator’s Slaves, huge biomechanical combat units. Fortunately, you just happen to get hold of one and thus begins your destructive march toward peace.

While the design team has solid roots in the giant robot arena (director Sean Vesce was lead designer for MECHWARRIOR 2), the focus in SLAVE ZERO is on action and interactive environments instead of the sparse environments in most giant robot sims. To create the game’s huge, destructible cities and allow for...
Angel of Death

REQUIEM Lets You Smite Your Foes the Old Testament Way

Caving some good old fashioned, "eye for an eye" biblical retribution? Then REQUIEM: AVENGING ANGEL might be the manna from heaven you've been waiting for. After a group of rebellious angels (the Fallen) sets out to destroy mankind, the Big Guy himself selects you to go straighten things out. As the angel Malachi you take on human form to square off against the Fallen and their hideous minions.

REQUIEM’s thunderous action sprawls across 30 levels based in such realistic locales as power plants, hospitals, refugee camps, and cities, as well as the more fantastic environments of space stations and the gore-slicked bowels of Hell. You’ll be confronted with enemies such as demons, mind-controlled soldiers, and the Fallen themselves. While we only had a limited alpha version to play, all the enemies displayed a daunting viciousness sure to satisfy the run-and-gun crowd.

REQUIEM will also feature lots of NPC interaction as a core facet of gameplay. Conversations with ordinary citizens will flesh out the plot and open up new levels. Scripted scenes executed in the game as opposed to rendered cut-scenes will also provide hints and story details. It should add up to a more engaging world than the average shooter.

With the usual assortment of machine guns, grenade launchers, and sniper rifles, REQUIEM’s weapons likely won’t strike anyone as special. It shouldn’t matter—gamers will be too busy using Malachi’s angelic powers to notice.

There are about two dozen different powers, both offensive and defensive, and they will be what truly defines REQUIEM. Enemies can be turned into crumbling pillars of salt, set upon with stinging plagues of locusts, torn apart by divine lightning, or have their blood boiled until they convulse, squirt blood, and explode into meaty chunks. Defensively, you will have shielding powers, an enemy-repulsion capability, and the ability to resurrect the dead to fight on your side.

Cyclone Studios has developed their own engine to drive the game, and it’s looking good. The bloody halls of Chaos pulse and are scabbed with the twisting, tormented bodies of moaning penitents; lighting effects enrich explosions and fireball-like Brimstone power; and some especially cool particle effects make the Turn to Salt power a thing of malevolent beauty.

Throw in eight-player deathmatches and multiplayer options that could include pitched battles between teams of Chosen and Fallen, and REQUIEM: AVENGING ANGEL has the look of a winner. Look for it to hit the shelves in early 1999. —Robert Coffey

The city will present plenty of opportunities to exercise your bloodlust.

meticulously detailed animation, the team spent several months creating the Esctasy engine to drive the game. Judging from what we've seen, you couldn't ask for much more. The Slave animation, in particular, is spectacular, with a fluidity of movement that lends this behemoth an almost simian grace.

The single-player game takes place from a third-person perspective. While not having a first-person perspective for this sort of game might seem odd, watching your alter ego violently stomp through the world is a large part of the fun. There will be 16 missions, each with specific, uncomplicated objectives. The missions will grow from being mostly ground-based to emphasizing the vertical nature of the game's towering cities. Accolade is being tight-lipped about level locations, but expect at least one acrophobic nightmare of rooftop-leaping combat and a slimy wade through the city's cavernous sewer system.

Multiplayer specifics are still being hammered out, though straight-ahead deathmatches are definitely planned. The team is considering other options, including one mode where players will have to forge weapons and instead battle by throwing cars, trucks, and anything else they can grab at each other. We're really hoping this idea makes the cut.

Slated for a late Spring 1999 release, SLAVE ZERO is one of the most promising action titles on next year's horizon. Look for more car-stomping, building-ripping coverage in CGW's upcoming cover story. —Robert Coffey

Here's why it wouldn't be much fun playing SLAVE ZERO as a pedestrian.

WHEN IT RAINS IT POURS Get rid of enemies faster than you can say "Sodom and Gomorrah" by turning them into pillars of salt.

Boil a bad guy's blood and watch him pop like a blood-gorged tick. Hallelujah!
A Jolly Good Show

Illo, mate! Fancy a look at the top sights of the European Computer Trade Show? Alright, then, but when you’ve had enough of the birds, check out these games!

Max Payne
Remedy/Gathering of Developers
www.reddogames.com

This third-person action adventure under development in Finland makes TOMB RAIDER look like a Commodore 64 game. Framed cop Payne is out to prove motion shootouts (where even discarded bullet casings can be seen) and a hero who will do for women gamers what Lara Croft did for men. The game’s weapons are all based on real-world equivalents. While this may not be revolutionary, the modeling of the weapons is. MAX PAYNE will feature a 3D particle-based system, so that muzzle flashes are both randomized and more realistic. The same can be said for the smoke trails that issue from hot gun muzzles. The realism of the gun modeling goes all the way to the bullets themselves, which are actually modeled and rendered as they leave weapons at real-world velocities, following realistic trajectories and causing believable damage.

As for Payne, he’ll have plenty of moves, and so will his opponents. It was a pleasant surprise to see opponents dive into the scene, fire a few shots, and roll for cover, rather than just standing there shooting back as you fire at them. The graphic detail is amazing—even the graffiti on the walls is perfect. And the story is as important as the action here—over 80 comic-book-style interludes set the scenes for the various action sequences.

Braveheart
Red Lemon/Eidos
www.eidosinteractive.com

Okay, when we saw this title at E3 under its original moniker, TARTAN ARMY, we wrote it off as “MYTH in skirts.” While it still appears like that, a closer look at the more fully developed version on show at ECTS showed it to actually be one of the standout titles of the show. Because the battles re-created in the game are the same ones from the Mel Gibson drama, Eidos licensed the name and turned the game into BRAVEHEART. The connection to

Nocturne
Take 2/Gathering of Developers
www.podgames.com

We’ve never seen a game that does such a good job of capturing a dark, forbidding atmosphere. Due in the fall of ’99, NOCTURNE is a third-person action-adventure that pits you against a variety of vampires, werewolves, ghosts, zombies, and other annoying members of the undead club. The real-time shadow effects are spectacular, and the storyline seems promising too: The developers are trying to capture a 1930’s pulp magazine style. Over the course of the quest-driven storyline, you’ll play nine different characters. This game makes RESIDENT EVIL look positively bright and cheery.
The Real Neverending Story
Discreet Monsters

One of the most interesting titles to debut at ECTS was this 3D, real-time adventure from Munich-based developer Discreet Monsters. Don’t confuse this with the cutey children’s movie, this game is based on Michael Ende’s original book, which in its native Germany has sold almost as many copies as the Bible. It’s a much darker tale than the movie as the hero, Atreyu, comes up against the evil scorpion queen, Gaya. Gameplay is heavily linked to the storyline and includes puzzles, combat, character interaction, and exploration.

Shadow Company
Interactive Magic

One of several strategic squad-based games that appeared at ECTS, SHADOW COMPANY was arguably the stand-out. You’re a mercenary commander whose team has been stranded in a central African war zone when a corporate client backed out, and now you need to survive and avenge yourself.

To complete the seven campaigns, each of which has between 10 and 30 missions, you must rely on 12 mercenaries whose different abilities hold the key to your survival. You’ll also have your pick of weapons, including rifles, grenades, and flame throwers, plus vehicles that include boats, cars, bikes, jet skis, and snowmobiles. The 3D-enhanced graphics look very tasty, and SHADOW COMPANY is sure to be a winner both in terms of visuals and gameplay.

Taisho: Total War
EA/THE Creative Assembly

Fans of the recently deceased Akira Kurosawa and the television series Shogun will delight in THE Creative Assembly’s impressive new strategy and war game. It combines Risk-style macro-strategy with real-time warfare it’s set circa 16th century in Japan at the height of the Samurai age.

The Real Neverending Story

Psynosis

Psynosis describes Tamsari as "more grotesquely violent than MORKAL COMBAT," and it’s hard to dispute that claim. Tamsari is a first-person 3D action game based on the story of a chap called Tarshi who is trying to piece
Welcome To
Blackstone Asylum

Fasten your straight-jacket. It's time to immerse yourself in the chilling world of John Saul's Blackstone Chronicles: An Adventure in Terror - the first collaborative effort between NY Times best-selling author John Saul and Legend Entertainment. Stunning 24-bit artwork surrounds you in the evil that is Blackstone Asylum - where tortured spirits from the past offer you the only hope of saving your missing family.

And your sanity. Bon appetit.  

John Saul's Blackstone Chronicles

Legend

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Will you be dressing for dinner?
Jeff Gordon is pushing NASCAR racing to the extreme – shattering records and winning races at an electrifying pace. And now, he's climbing into the drivers' seat of another lifelong passion: gaming. But as co-designer of Jeff Gordon XS Racing, he's putting more into the game than just a name. Instead, Jeff is creating a unique and exciting racing experience unlike anything you've ever seen. An extreme racing experience that takes you into the future of speed, and leaves all other racing games behind.
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Hardcore Gamer

The Future of Racing Arrives March 1999
www.ascgames.com
ECTS Continued

together the pieces of an ancient magical sword, which the game is named after. Motion capture is being used to make the game realistic from a martial arts point of view, with a World Karate Champion used to create Tarshi. Grotesque it certainly is—one of the methods we used was to split him from head to foot with a sword.

Galleon
Eidos/Confounding Factor

Galleon will be the first game from Confounding Factor, the developer set up by Core Design and TOMBA RAIDERS veterans Toby Guard and Paul Douglas. As captain Rham—explorer, trader, and buccaneer—you're put at the helm of the clipper Endeavor on a thrilling nautical adventure. Borrowing from the Sinbad movies, you'll fight off skeletal armies and pirate attacks, uncover mysterious shipwrecks, and get involved in supernatural shenanigans. Confounding Factor claims that Rham will be one of the most agile characters ever created, thanks to a proprietary animation system that allows for ultra-realistic movement. Has Lara met her match?

Soulbringer
Gremlin

F
rom the designer of REALMS OF THE HAUNTING comes a classic RPG in which you play a character reborn to take on the old enemies who destroyed him and now threaten the world. It uses a top-down view which shows off the intensely detailed, 3D-accelerated landscape to good effect. The graphics are incredible, and the gameplay underneath is rock-solid. Quest, exploration, and character interaction combine with magic and combat. But here Gremlin has done something a little different, enabling you to guide your sword stroke or string together a series of moves which makes fighting simple and effective. Could this be England's answer to ULTIMA?

Wargasm
Infogrames

N
ice name, groovy game. A fast-paced, 3D combat game that combines joint operations between tanks, armored fighting vehicles, and infantry. One of the surprise hits of the show, it was designed to show off D3D's next-generation graphics engine. This is the most impressive hybrid of action and strategy we've seen since BATTLEZONE.

Compiled by the chaps at PC Gaming World (CGW's UK edition) and America's own Denny Atkin.
ATTACK

...Your enemies at 15,000 feet and blow them out of the sky with eight .50 caliber machine guns and mind blowing accuracy.

...Your opposing team with tight spirals, blinding speed, and bone-crushing tackles.

...Your deepest, darkest fears head-on and watch them limp pitifully away.

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The Battle For Shelf Space
A Cool Quarter-Mil Helps Ensure You See That Game

This holiday season, as you await new games with visions of cyborgs dancing in your head, distributors are struggling desperately to put those games in front of you. Each year there are many more new games competing for the same shelf space. Since three-quarters of all games sold are purchased in stores, and December sales can account for one-fourth of a game company’s revenue, all the ingredients are there for an ugly fight.

“It’s a competitive bloodbath,” says Allan Blum, chief operating officer at Gathering of Developers. “I don’t know of any other industry that has this kind of environment.” Blum refers not only to the competition for shelf space, but also the competition among retailers to undercut each other. “Most clothing retailers carry different brands, but software stores all carry the same thing,” he says. “All they can do is try to beat each other on price.”

In their zeal to lure customers with lower prices, major retailers often wind up cutting their own throats, according to Ann Stephens, veteran retail analyst at PC Data. “Retailers as a whole are selling games at no markup, on average. They’re using their best sellers as loss leaders, and taking budget software and making a profit on it. Generally it’s averaging out to zero.”

How are they making money? Many haven’t. In the last five years, one-third of software retailers have sought credit protection under Chapter 11. And while most big retailers have mail-order wings and online sites, online sales still represent a small fraction of total units. According to Stephens, most people who use mail order are buying expensive business apps. The average game retail purchase is $30.

Retailers do, however, manage to make money. Much of it comes from a special premium they charge to shelf a game in quantity. This is gambling’s dirty little secret: nearly every game company pays hundreds of thousands of dollars to make sure you see their title in stores. All the major players pay in the range of $50,000–75,000 per retailer for end-cap space during December, according to numerous sources.

These fees, known as Market Development Funds (MDF), are where the retailers are making money on games, according to Stephens. “It’s the grocery store model. But there are a lot of problems with that model—if a retailer isn’t making money on titles, there’s no reason to care what they stock. That means the publisher and retailer aren’t playing the same game anymore—they don’t both have a mutual benefit in quality. The consumer in one way will suffer. The buyer will get cheaper software, but he may not get what he wants.” —Ken Brown

December Game Sales

<table>
<thead>
<tr>
<th>Year</th>
<th>PC Game Titles</th>
<th>Units Sold in Dec.</th>
<th>Dec. Revenue</th>
<th>Total Annual Revenue</th>
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<tbody>
<tr>
<td>Dec ’92</td>
<td>1,139</td>
<td>3,629,552</td>
<td>$117,110,351</td>
<td>$375,660,339</td>
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<tr>
<td>Dec ’93</td>
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<td>Dec ’95</td>
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<td>$235,217,720</td>
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<td>14,101,522</td>
<td>$344,334,144</td>
<td>$1,409,918,197</td>
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</tbody>
</table>

Source: PC Data

It’s a competitive bloodbath. I don’t know of any other industry that has this kind of environment.

—Allan Blum, chief operating officer, Gathering of Developers

Playing Lately

CGW Survey  Here’s what you’re Blowing the most time on.

<table>
<thead>
<tr>
<th>CGW Survey</th>
<th>Here’s what you’re Blowing the most time on.</th>
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</thead>
</table>

1. StarCraft (Blizzard/Cendant) 1 4
2. Might and Magic VI (3DO) 2 3
3. Quake II (id Software/Acivision) 3 6
4. Final Fantasy VII (Eidos) - -
5. Age of Empires (Ensemble/Microsoft) 4 7
6. Diablo (Blizzard/Cendant) 5 19
7. Jedi Knight (LucasArts) 8 9
8. NASCAR 2 (Sierra/Cendant) - -
9. Unreal (GT) 5 3
10. Jane’s F-15 (Origin EA) - -

Based on a monthly survey mailed to CGW subscribers. This differs from the readers’ overall “quality ranking” in the Top 100

PC Data Best-sellers

<table>
<thead>
<tr>
<th>PC Data Best-sellers</th>
<th>Last Month</th>
<th>Average Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. StarCraft (Blizzard/Cendant) 1</td>
<td>$39</td>
<td></td>
</tr>
<tr>
<td>2. Deer Hunter (GT Interactive) 4</td>
<td>$20</td>
<td></td>
</tr>
<tr>
<td>3. Diablo (Blizzard/Cendant) 8</td>
<td>$21</td>
<td></td>
</tr>
<tr>
<td>4. Unreal (GT Interactive) 2</td>
<td>$27</td>
<td></td>
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<tr>
<td>5. Rocky Mountain Trophy Hunter (GT Interactive) 6</td>
<td>$18</td>
<td></td>
</tr>
<tr>
<td>6. Cabela's Big Game Hunter (Acivision) 7</td>
<td>$20</td>
<td></td>
</tr>
<tr>
<td>7. Microsoft Flight Simulator (Microsoft) 16</td>
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<td>8. Myst (Rad Grfx) 9</td>
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<tr>
<td>9. Final Fantasy VII (Eidos) 3</td>
<td>$45</td>
<td></td>
</tr>
<tr>
<td>10. Police Quest: SWAT 2 (Cendant) 5</td>
<td>$45</td>
<td></td>
</tr>
</tbody>
</table>

The top-selling PC games as of August, calculated by PC Data (Reston, VA).
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Half-Life
Brains, Beauty, and Brawn Could Make This the Best Single Player Shooter Yet

by Robert Coffey

With every other action title hollowly promising bloodier carnage, prettier eye candy, and scarier monsters, what can a game really do to set itself apart from the pack? How about delivering a compelling story along with the mayhem? How about creating a believable, realistic world then distorting it so wildly that the gamer shares the protagonist’s confusion, surprise, and fear? How about creating a rich gaming environment loaded with interactive objects and people that, instead of being simple props, enrich and define play? These are the sort of things that the shooter genre has been lacking, and it looks as if Half-Life is set to deliver them.

THE GREAT OUTDOORS
Just because most of Half-Life is grounded in reality doesn’t mean it’s visually dull. Sweeping outdoor locations and spectacular explosions help make it a graphically rich game.

Half-Life

GENRE: Action
RELEASE DATE: Q4 ’98
DEVELOPER: Valve
PUBLISHER: Sierra Studios.

Plot Twists
The story behind the game sets up its dizzying marriage of non-stop action and narrative. You are Gordon Freeman, a research scientist at the top-secret Black Mesa complex, a decommissioned underground missile base. During a slightly less than routine day, an experiment goes terribly wrong, ripping a cross-dimensional portal to an alternate universe. Unfortunately, the creatures on the other side of the gateway have a keen interest in interdimensional real estate and a disquieting propensity for violence.

Since monsters continually enter the now-devastated complex, you must make your way to the surface—killing monsters; CIA operatives sent to erase all evidence of the incident (including you); and government agents planting explosives to destroy the base. It’s not just your life at stake: If the government succeeds in blowing up the base, all those nuclear warheads they’ve forgotten will create some freshly irradiated beachfront property in Missouri.

While this sounds like a traditional “you against the world” shooter plot, Half-Life’s execution sets it apart. The game opens with a long tram ride as you enter Black Mesa. Movie-style credits flash by as you descend into the complex, riding through deep canyons, cavernous interior storage areas, and winding tunnels. When the credits end the game begins, but not with the bulletspraying bang of other first-person shooters. Instead, you leisurely make your way through the facility, chatting with fellow scientists and perhaps dropping by the coffee room on your way. After you don your HEV environmental protection suit you make your way to the lab. Security guards engage you in small talk as they open air-locked chambers. Half-Life spends
its first 10 minutes of gameplay creating a believable, though slightly fantastic, world.

The payoff comes after the dimension-shredding accident. With Black Mesa torn apart by explosions and rampaging monsters, you head for the surface seeking rescuers. It’s no easy trip since the familiar, almost mundane, world of just moments ago has been irrevocably altered into an unknown, chaotic interior landscape—a mangled maze of collapsed walls, plummeting elevators, and wildly firing lasers. Everyone you see is grippe...
Heart-stomping, hair-
straightening, mind-melting action.
(Ready for level 2?)

Plough through five continents with extreme prejudice. And a grenade launcher.

Monkey swing, crawl or sprint-dash when you can't fight your way out.

Wreak havoc through snow, wind and rain with jaw-dropping realism.

Blaze India and hammer into London, Antarctica, Area 51 or the South Pacific.

Enjoy international diplomatic immunity with a set of 9mm's as your passport.

Annihilate your way through 15 levels of high-res mercilessness.

TOMB RAIDER III
ADVENTURES OF LARA CROFT

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PC Gamer

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Q&A With Valve’s Managing Director, Gabe Newell

Q: HALF-LIFE’s action and story play out in a cinematic fashion. Did any films influence or inform HALF-LIFE?
A: Originally, HALF-LIFE was inspired by a Stephen King novel, The Mist. About the only things in the game that really remain are the combination of horror and technology shared between the two, and the designs of the Bull Squad and blind turrets in the Abandoned Silo area. There’s a lot of Jackie Chan in the Assassin character, and there are bits from Full Metal Jacket and Aliens in the game.

Q: Most storytelling is an essentially linear process. Why do you think no one has capitalized on the essentially linear first-person shooter model to tell an involving story?
A: We’re not entirely sure since both the press and fans have been asking for this for a long time. I think what’s happened is that the amount of work necessary to carry it off is so daunting, that even when people set out to integrate a strong storyline, they end up giving in to time pressure along the way and skipping everything it takes to make that possible. To put that in perspective, the script for HALF-LIFE is about twice as long as a typical movie script and doesn’t include all of the synthesized audio generated during the game.

Q: One of the coolest things in HALF-LIFE is the ability to interact with other people in the game—to get scientists to heal you, to have security personnel help you fight. And while there’s also interaction with the environment, the game path is basically set—your actions add flavor to the game but don’t have any real, tangible effect. With flight sims now featuring dynamic campaigns, when do you think we might see a dynamic shooter, in which the consequences of our actions actually affect the progress of the story/game path? Is this even possible?

Salamander-type creatures.
Valve has put a lot of work into the monster’s AI to make them even more challenging. Marines use cover fire and hide behind objects, houndstables are most effective in packs, and some monsters use sound and scent to track you. Monsters have a survival instinct and will run and hide if they think they’re losing a battle. And just as your cadre of protective security guards can follow you from level to level, your enemies will hunt you across levels as well.

Weapons are predominantly real-world items. Early weapons include a crowbar, .357 magnum, shotgun, grenades, and machine gun. Most weapons have both a primary and secondary firing characteristic; for example, the shotgun’s primary attack fires just one chamber, while the secondary mode unloads both rounds. Later in the game, you’ll get a rocket-propelled grenade that you can steer after firing, organic weapons based on the alien technology, and, eventually, some of the surviving scientists will build you a powerful, BFG-type weapon.

Under the Hood
Valve initially licensed the original QUAKE engine but has extensively modified it. Now, more than 70 percent of the engine is Valve’s own code. The result is a dynamic, interactive world. Surfaces reflect damage, damp walls grow moss over time, and destructible objects are liberally sprinkled throughout levels. Though not as flashy as Unreal, HALF-LIFE has some brilliant 3D-accelerated effects, including spectacular explosions, beam effects, and dynamic lighting.

Using a skeletal animation system that morphs the textures mapped onto a creature, HALFLIFE is able to create remarkably smooth, lifelike animations with scores more frames of animation than sprite-based games. Monsters can move discrete body parts, which means that they turn their heads to watch you as they run away or draw and fire weapons while they’re on the move.

For action gamers who’ve longed for a shooter with an exciting, immersive single-player game, HALF-LIFE seems set to deliver the goods. Barring yet another missed shipping date, you can expect it just in time for the holidays.

OOPS, I ACCIDENTALLY TORE REALITY Sure it’s pretty, but this is the tragic experiment that lets all those nasty interdimensional monsters into our world.

Q: What’s next for Valve?
A: Our big focus is going to be on getting TEAM FORTRESS out the door, then there are some technology issues we want to look at for a bit. We’re actually itching to begin work on the next generation of games.

Q: Finally, who’s that evil, corporate guy in the suit?
A: You won’t find that out for quite a while in the game. But he is a pretty evil bastard.

A: I was talking with Warren Spector at ECTS about this topic. I was talking about how we had this seamless world without any explicit levels, and he started laughing at me. He said something like “I bet you have to give people a lot of explicit structure, and you’re eliminating nonlinear elements in your designs as you playtest.” And I said, “Yeah,” and he laughed some more and said, “Been there, done that.” With DEUX EX, Warren’s being even more structured with the player’s experience. The hard part is to give players a lot of freedom without them feeling that they are missing all of the cool stuff, that the freedom they have isn’t trivial, and that they have a sense they’re progressing through the game. I think it is certainly possible to do this, but it’s probably going to take a magnitude more of content to pull it off, plus a pretty thoughtful design.

Q: While HALF-LIFE will support TEAM FORTRESS 2 after its released, what other multiplayer options will we see in HALF-LIFE? What is going to set its standard deathmatch apart?
A: There are two things we’ve been working on: making HALF-LIFE multiplayer less frustrating and making it more fun. The first thing we are addressing by making it easier for people to find and get into games and by looking at weapons design issues to create a multiplayer less lag dependent. We’re making HALF-LIFE multiplayer more fun by having a variety of game modes and game rules—beyond just deathmatch and cooperative play. LOOT is one of the games that Dario Casali has designed; it’s a sort of cross between capture the flag and hide-and-seek.

HIT SQUAD Later in the game, you’ll face menacing monster teams like these guys. Fortunately for you, by then you’ll have the high-tech weaponry necessary to take them out.
Odds of landing this move: 10 to 1.
Odds of fathering children afterwards: 1,000,000 to 1.

Motocross Madness

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Motocross Madness requires a 3-D card.

Microsoft
Myth II: Soulblighter
This Groundbreaking Game Continues to Distinguish Itself

by Joe Vallina

Someday, Myth: The Fallen Lords will be recognized as the beginning of the end of 2D real-time strategy games. It was Bungie's first big PC hit (the company was formally known for its Macintosh games, such as Marathon), and it was also the first real-time strategy game to take full advantage of a 3D engine, letting you swoop down and around to view the beautifully rendered gameworld.

Of course, that's not to say that everything you saw in that glorious 3D imagery was pleasant. Au contraire, visions of dwarves chucking molotov cocktails into a massed group of zombies and subsequently creating little piles of charred hamburger can hardly be called picturesque. But gamers reveled in the gore, and revel even further in the way that Myth's 3D world brought them closer to real combat than ever before.

Well, my fellow heroes, Myth II: Soulblighter adds many new features to Myth's 3D universe and, if all continues as planned, it could pound the final nail in real strategy's coffin.

The story is set 60 years after your character kills Bolor in Myth. Soulblighter, one of the original Fallen Lords, has enlisted some humans as well as some really nasty creatures. He wants a new war, and guess what? You're just the hero to give it to him.

In the demo build I played of Myth II, five new single-player scenarios were working (along with two multiplayer levels), all designed to show off the game's new features. The missions I played included assassinations, search and destroy missions, protection (protecting a building or object) missions, and escort missions.

Burn, Baby, Burn

Far and away, Myth II's greatest addition is the use of fire. As promised, your archers can now use flaming arrows to start fires that can encircle your enemies. By pressing the T key (used to activate a unit's special ability), your archers' normal arrows switch to flaming projectiles that set the grass on fire wherever they land. Units take damage from the fire as it spreads across the ground. But be careful: Your units are just as vulnerable to the flames, so you'll have to watch out not to get caught in your own trap.

Bungie has also added animated polygonal objects, such as drawbridges and giant moving wooden gates. These features will be used to a great extent in Myth II, and they add a new level of realism. In one scenario, you must escort a peasant through an enemy-infested forest to the safety of a town fort before the gates close for good. In another, you must assault a castle with a working drawbridge. Get caught with too few units after it closes and you can expect to have arrows raining down on your head from the tops of the walls.

Magic will play a part in Myth II, as well. For example, after you successfully get all of your units to the drawbridge at the castle, you become an invisible dwarf who must sneak in a back door and up to the ramparts to destroy the winch that opens the drawbridge. After it is destroyed, your men can charge in and start chopping down everything in sight. Magic-users in Myth II will have unlimited magic powers, but the catch is that they have a "mana" bar, which is...
depleted each time they use a spell. (It will gradually replenish over time.)

One other super-cool addition to the MYTH universe is indirect artillery fire. One minute, your troops are trudging along minding their own business, the next they are chop suey. This, of course, is thanks to a giant explosive charge that just dropped out of the sky. To be fair, you do hear the telltale whine of a falling bomb right before the shell impacts, so you can get out of the way—if you're quick enough, that is.

Under My Control

Bungie has also improved the game’s interface. For example, the horrible “mouse-flick” unit-facing control has been eliminated. Now, to have a unit face in a certain direction you simply hold the mouse button down and point the arrow under the unit in the desired direction.

MYTH II’s graphics will be enhanced from those in MYTH. For starters, Bungie says that there will be twice as many frames of animation for the units, and the terrain mesh will be four times as fine as before. All this should work together to provide a much more immersive environment.

There will be several new characters in MYTH II. Five of these were in the demo I played: mortar dwarves, heron guards, Stygian Knights, mauls, and warlocks. Out of the five, for me, the mortar dwarves were the coolest. They look pretty much like normal dwarves, except that they use a mortar to launch their explosive charges over long distances. For more details on the other new characters, see the sidebar on this page.

Making the World Your Own

Bungie is also including two game editors in the MYTH II package. Bowing to the wishes of the masses (who had already used homemade, hacked editors to create custom MYTH missions), the company will include not only a terrain-building editor, but a full character-building editor as well.

Fear, the character editor, is incredibly detailed (Bungie says that 90 percent of the game’s code can be modified with the application). Want your archers to shoot magic arrows? No problem. Want your dwarves to turn into chickens? You can make it so. In fact, if you know anything about game mechanics, you can use this editor to tweak any unit and have it do anything you want. No kidding. If the editor that is released is as powerful as the one in the demo, the online MYTH II hacks will be truly scary.

The terrain editor, Loathing, is the most detailed level editor I’ve ever seen, giving you full control over virtually every aspect of the game world. Loathing allows you to be as general or as detailed as you want, letting you adjust the lay of the land in minuscule proportions or use the broad tool to build up a mountain range in one fell swoop. Wanna-be level designers will be in heaven, and the number of quality homegrown levels on the Net will be enormous. Personally, I can’t wait to see what new hacks and levels the demented minds of CGW readers will come up with using these two incredible tools.

As with the original MYTH, a 3D card will pretty much be a must for this game if you want it to run smoothly and look good. The current build supports 3Dfx and Rendition chipsets, and Bungie promises support for Direct3D in the final game. If you buy your 3D card now, you’ll have it in place when MYTH II ships later this year.

If Bungie continues along the same lines as what I’ve seen so far, MYTH II should surpass MYTH and take strategy gaming even higher. CGW
He went 92 yards, broke two tackles, juked one corner and blew the numbers off the free safety. C'mon, let the guy dance.

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Railroad Tycoon II

Pop Top Pulls Sid's Masterpiece Out of the Can

by Terry Coleman

Like Myers may not be a genius on the same scale as Charlie Chaplin, but he certainly has a good sense of timing. Myers’ Austin Powers: International Man of Mystery is in many ways the quintessential movie for the near-millennium because it allows you to totally immerse yourself in good-natured retro chic. With the current deluge of remakes in every creative medium from TV to film to books, it’s hardly a surprise that computer games are also rapidly trying to reinvent the wheel—though the PC equivalent of Austin Powers has yet to be made.

Channeling Sid

Even Sid Meier is vulnerable, contracts and licenses being what they are, to having his classic works reinterpreted by other designers. When you look at the vast catalogue of games by Sid Meier, you’d expect PIRATES! to be done or maybe for there to be a new stealth fighter game, but RAILROAD TYCOON? After all, you don’t build railroad stations and immediately start pumping out hundreds of railway cars, smashing them up against your enemies’ trains in the center of the map (though that might have a certain guilty pleasure appeal).

Well, RAILROAD TYCOON isn’t in the CGW Hall of Fame solely for nostalgia; it’s an engaging game remembered as the Man Who Saved HEROES OF MIGHT & MAGIC from self-destruction. A low-budget product, HEROES, and its flashier sequel, HEROES OF MIGHT AND MAGIC II, turned out to be two of New World Computing’s biggest hits in years. When MicroProse, evidently in one of its desperate attempts to generate cash flow, started shopping around some of its legacy titles, Steinnmeyer jumped at the chance to remake one of his favorite games.

The Real RAILROAD TYCOON Deluxe

What you notice first about RAILROAD TYCOON II are the vastly improved graphics, which have traditionally been a weak point of railroad games. Sure, MicroProse released RAILROAD TYCOON DELUXE—upgraded to stunning VGA1!—about three years ago, but RAILROAD TYCOON II is the way Sid would have wanted this game to look. Without requiring a 3D card, the design team at Pop Top has managed to create a vibrant 3D world of track and railway cars, along with a beautiful cross-country landscape that elevates RAILROAD TYCOON II above the quaint artificiality of model railroading. If you’ve ever tried to carve trees out of green foam, you’ll appreciate the variety of saplings and towering elms that spring from nearly every outdoor frame of this game.

The 3D in this game is now more akin to that of TOTAL ANNIHILATION than MYTH, which is a good thing given the level of detail. Even with a Pentium II 400, it would be difficult on a scale as large as that of RAILROAD TYCOON II to run multiple trains and stations in a MYTH-style environment with any kind of frame-rate, much less have any processor bandwidth left for the multi-level AI. What’s more, you can actually use the 3D technology for more than eye candy. The entire 3D world can be rotated 360 degrees like a hand-held map, complete with multiple zoom levels—very helpful when you’re trying to carve a different rail route through nearby mountains.

Age of SimRail

As in the original, you start with a certain amount of capital and attempt to build a railroad empire. After you clear away ground and get buildings erected,
you buy your choice of railway cars and start laying track. You build water towers, sanding towers, and roundhouses to keep your trains up and running in top condition. And like any resource management game, RAILROAD TYCOON II requires that you make a lot of tough decisions because, as you progress farther into the game, there are rarely enough resources to take care of every train. All of this is actually a great deal of fun. And if you turn the computer opponent options way down, this part of RAILROAD TYCOON II plays a lot like SIMCITY with boxcars—right down to the familiar bulldozer button on the interface.

The designers have come up with a clever gimmick to show the importance of railways in this era. A given railway in RAILROAD TYCOON II has an area of effect: Basically, the more time and money you put into a station, the wider its influence on the surrounding area. This realistically shows how many towns of the United States came into being in the mid-1800s simply because they were on rail lines. It also requires that you invest more resources in larger cities, such as Chicago or New York, or risk losing business and money to a competitor. Essentially, you are in the job of transporting goods and passengers from one area to another. The farther, faster, and more reliably that you can provide this transportation, the more money you rack up. Once you get through the excellent tutorials and move on to the main game, you must amass $25 million to win—a hefty fortune indeed for the mid-19th century.

This brings us to the most enjoyable aspect of RAILROAD TYCOON II: the devious computer opponents that you face. These are modeled after the great robber barons, such as Cornelius Vanderbilt, and they are quite adept at making your victory conditions difficult to reach. Whenever one of these AI gentlemen is near, rest assured that he will lay his track in such a manner that you must either link up to his rail line—costing you a portion of your profits as his fee—or force you to find an alternate route that could end up being prohibitively expensive. If they can't best you on the physical rail system, the robber barons will try to corner the stock market. Buying and selling stocks in RAILROAD TYCOON II is more involved than in the Sid Meier original, but it also offers you more gameplay options. In addition to buying and selling your own company-issued stock, you may leap into margin buying, short-selling, and even investing in other companies.

From Steam to Bullets
In addition to the traditional Classic Age of Steam Trains in 19th century North America, RAILROAD TYCOON II also covers the development of trains throughout the 20th century. We're not sure yet how a bullet train of 2001 will be modeled since this was still in development at press time. But we do like the mix of campaigns, which includes rails across England, the failed attempt to build a trans-African railway, and the economic realities of Amtrak-like businesses in the modern United States.

If you've ever enjoyed boardgames like Eaurails or 1830, this is your game—especially since it supports LAN and internet play. RAILROAD TYCOON II is one of the best options for long, addictive winter gaming, because it gives a fresh perspective on a classic that just happens to be the antithesis of the "me-too" syndrome.
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After all, nothing beats the feeling of flying a historic WWII fighter. Except, of course, filling it full of lead and watching it plummet pitifully to the ground. Collect your orders and find out how Microsoft Flight Simulator owners can get a $10 rebate at www.microsoft.com/games/combats.
Enemy Infestation

Ripcord’s Intergalactic Bug Hunt Could Be X-COM’s Successor

by Robert Coffey

Alien menaces and real-time combat have one big thing in common—both are overused in today’s strategy titles. That’s not to say these are bad things; on the contrary, if these ideas didn’t have some real appeal they wouldn’t keep cropping up. It’s just that too many games can’t execute interstellar war and ticking-clock combat in a fresh or innovative way. ENEMY INFESTATION hopes to change all that.

Illegal Aliens

Taking place well in the future, the game opens with millions of alien pods desperately fleeing a dying planet in the hope of finding a new world to call their own. While most of the pods fail to survive the trip, a few land on a planet colonized by mankind in order to feed a starving Earth. With numerous settlements on the planet’s surface as well as vast underwater farms, it seems like the perfect place for the mysterious Mantis race to wreak their particular brand of terror.

Taking place from an isometric perspective that’s part X-COM and part CRUSADER, ENEMY INFESTATION (EI) charges the gamer with controlling small squads to combat the alien threat. Most of the game takes place in and around various installations on the planet, including polar ice-mining facilities, research centers, and underwater farms. Unlike the rather cookie-cutter locales in the X-COM series, EI levels are pre-rendered and showcase some truly inventive touches, including interior beaches and gardens provided for the personnel’s recreation and enjoyment.

The bulk of each crisis site is hidden until your team enters specific rooms. At that point the roof basically disappears and you have full access to the area. Roofs don’t pop back in after you leave, but the rooms do become shrouded with a grayed-out fog-of-war effect. As a game device, it should be effective, adding a sense of nagging doubt when you revisit accessed areas. Has the previously clear room been filled with new hostiles? Is your team in any shape to deal with a threat?

Character Counts

Unlike other games where every character is a virtual killing machine, EI will stick you with characters that are next to useless in a firefight. But each will serve a purpose: You’ll have doctors for healing, mechanics to repair critical machinery, biologists to gather samples and develop viral weaponry, technicians to unseal airlock doors, and more. With missions often having a lengthy checklist of goals, each member of your team (up to 12 men) should play a vital role in every mission’s success. Even a basically useless, cowardly bartender can be an asset by carrying the wounded to healing beds, and thus allowing your other forces to focus on the mission.

While characters all come with their own abilities, there will be opportunities to expand their expertise. These will come in the form of bookcases that will provide characters with new knowledge, all for the price of reading a book. For instance, soldiers are good at shooting, hand-to-hand combat and little else. But should your standard military grant find a bookcase housing medical information, he’ll be able to heal others as long as he holds on to the book. In a game where your units take as much punishment as they do in EI, having such an ability is a tremendous asset.

EI’s mission goals include rescues, searches, and fact-finding forays into devastated facilities. This kind of variety should provide a refreshing and satisfying change from the “kill everything” expeditions of other titles (although you can certainly expect plenty of that). For example, one early
mission asked me to repair the environment suit station, scrounge up some weapons, exit the space station to retrieve a tissue sample from a pod, analyze the sample to develop a virus, then modify some fire extinguishers to dispense the virus. After that, it was time to wipe out a whole nest of aliens.

**Tell Me What to Do**

A rather straightforward, mouse-driven interface will let you issue orders and direct troops. One impressive feature is the ability to construct a complex series of waypoints by simply holding down the "Shift" key while clicking. Even actions can be dictated in this manner, making it possible for you to direct a soldier to walk through several rooms, pick up a gun, recharge it, open a door, go up an elevator, and attack a specific alien.

The only interface stumbling block I ran into in the beta version I played was actually getting control of individual units. E1's narrow corridors and crowded rooms often made it difficult to click on a specific unit, and the unit portraits in the interface bar were similarly tiny. Hopefully this will change before the game ships. Fortunately, both individual and grouped units can be bound to hot-keys.

You can give standing orders such as "guard" or "fight" to direct a unit's behavior when aliens appear. Particularly useful and entertaining is the "hide" order—perfect for ensuring that your weak medics and physicists cower behind recharging stations at the first sign of trouble. With many of the battles taking you by surprise, you'll need to make use of these standing orders to protect your teams and just generally stay on your toes. More than once I thought I was safe and relaxed my guard only to be set upon by clawing packs of aliens. While E1 doesn't let you create formations, you will have to properly place units in a room to provide adequate defense in case of an ambush.

**Plot Points**

Not only do the mission briefings fill you in on mission goals and tips for completing them, they also advance ENEMY INFESTATION's twisting storyline.

**Arms and Your Men**

Much of the weaponry you'll be using will be unfamiliar to you so you'll have to try it out in combat to determine its effectiveness. This is a good thing when you find a killer ray gun: it's bad thing when the gas tank you're using helps the aliens multiply. Weapon management will also play a large part in the game. Several weapons carry finite amounts of ammo, forcing you to find more lest you start literally kicking alien butt. Fully recharging energy weapons typically takes a while. Since you frequently begin missions either unarmed or under-armed and each character can carry just a single weapon, weapon management turns into a real juggling act. Alleviating a bit of this stress is a handy interface item that lets you know if there are any undiscovered weapons or items in a mission and, if so, how many. Unfortunately, it stops short of telling you where to find them—that's up to you.

Gamers who found the last X-COM game's lack of multiplayer support disappointing will be happy to know E1 will support multiplayer games out of the box. Up to four players are supported in cooperative mode only, so forget about squaring off against your friends. With any player capable of controlling any unit in the game, it will be interesting to see how this works in practice. Still, it's an idea whose time has clearly come.

ENEMY INFESTATION shows real signs of promise. In the beta version I played it was apparent that some AI tweaking still needed to be done. But the rest of the game seemed pretty solid—except the voice-acting. We can only hope that the voice-acting I heard was a temporary fix until Ripcord got around to hiring some real actors. Slated for release in time for the holidays, E1 might just turn out to be a pleasant surprise on the crowded real-time strategy front.
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Lockout Be Damned, 
EA Sports Is Set to Release 
Another Outstanding Game

By Elliott Chin

As we go to press this month, the NBA lockout is still standing firm, and the beginning of the season is in serious jeopardy. So why don't we care? Maybe because we've been playing a beta of NBA Live 99, EA Sports' latest version of its great basketball franchise. NBA Live's blend of fast action and sports simulation over a hidden mass of stats is an award-winning combination that has won over many fans, including me. As recently as a few years ago I wasn't much of a sports game fan, but one play of NBA Live 96 and I was hooked. The fast action roped me in, and the rest of the game's polish and depth kept me a fan forever.

In most respects, NBA Live 99 stays true to previous editions of NBA Live and, on the face of it, doesn't play all that differently. However, a better engine, greater graphics detail, an enhanced AI, and several other gameplay tweaks have elevated this game to a new level.

Beautiful Lay-ups

The first thing you notice about NBA Live 99 is the improved graphics. The animation and motion capture for the players on screen is amazing. While not quite as fluid as the animation in FIFA 98 or the upcoming FIFA 99, NBA Live 99's animation is so good that it almost feels like you're watching an actual NBA game. The way the players do crossovers, pivots, and other moves adds to the feeling of controlling lifelike players.

When the announcer starts off a game, you see your players streaming out of the locker room, high-fiving each other, jogging gingerly up to center court, or rotating their arms for last-minute stretches. And, of course, the animation is really nice for the lay-ups and dunks.

While many of the dunks in Live 99 look similar to those in previous versions of the game, they're even more detailed this year. You'll see O'Neal hanging for a few seconds on the basket, swinging left and right a little and then dropping down to the ground. If you go for a replay, you'll even see his mouth open and his face turn into a visage of determination—thanks to the more detailed engine. And when he finishes a particularly good dunk, you'll see him celebrate by waving his hands in the air and pumping his fist.
Not only does the new engine add moving mouths to the game, but it also brings 3D faces to life. All the players now have expressions, which are most noticeable in the lineup screens—you'll see the players smiling or scowling. Sometimes the expressions look goofy, but other times the realism is eerily fascinating. The 3D faces also look amazingly like the real players' faces. Rodman looks like Rodman, and Kukoc looks like Kukoc. It's uncanny the way the engine can deliver such accurate looking faces. (During the game, however, the resemblance tumbles a little.) The new engine also more accurately differentiates the sizes of players. Now, big guys like Osterrat and Smits look huge compared to thinner players like Muggsy Bogues.

More in the AI

While the engine and graphics are nice, the enhanced AI is equally impressive. I played a few games against the computer and immediately noticed that the computer was just plain smarter than it was in previous versions of NBA Live. Now, when you drive into a group of opposing players, you are almost guaranteed to have the ball stolen. Wade into that many hands and the ball is bound to be slapped away. The defending players are also better at getting rebounds. The increased number of steals and better overall defense is a welcome addition to NBA Live 99.

Your own computer-controlled players are also smarter. I noticed that they run to the basket more to add assists or rebounds. So when you go for a three-point play and miss, it's now more likely that you'll have a guy under the basket to tip in the ball. I also noticed that the tendency to foul too much at the end of quarters (especially for the losing team) has been curtailed somewhat. The free-throw defense now adds incentive to pass more often in games. And because defending players don't play as close on defense (they give a slightly bigger cushion now), you won't have to worry about having the ball picked off.

NBA Jam or Sim

The better AI also enables NBA Live 99 to differentiate between sim and arcade modes even more than past editions of the game. Now, arcade mode is more, well, arcadey. The action is faster, and dunks happen a lot more frequently; and when they do happen, they're soaring leaps from the three-point line that take you over the basket. Playing in this mode really gives you the sense that you're playing arcade basketball. In regular simulation mode, however, the enforced rules and the newly enhanced AI provide basketball play that's more challenging and realistic. Whereas sim and arcade mode played a bit too similarly in previous NBA Lives, in Live 99 the differences between the modes are far more pronounced.

Another addition to Live 99 is a new practice mode. Currently, practice mode puts you on an outdoor court where you can practice your dunks and special moves, such as the all-new fake moves and fake shots. While practice mode lets you hone your individual skills, however, it doesn't allow you to practice multiplayer plays. I hope EA Sports includes an option to add a second, computer-controlled player to the practice mode so that you can practice assists and passes. There will also be multiple seasons in NBA Live 99 as well as a live draft. Now you can try to build a dynasty to rival the Bulls, as you participate in drafts, make trades, and carry your successes or failures for up to 10 consecutive seasons. The game will track the development of your players' careers and present you with a Decade in Review screen at the end of your tenure. Trades with computer-controlled teams are not bland-dole gimmies; the computer will judge whether you're making a fair offer and decline or accept it.

At the Buzzer

With the better-looking engine, smarter AI, and other enhancements, NBA Live 99 promises not only to continue the excellent gameplay of the series, but also to add more challenge and beauty to this EA Sports gem. If the fouls and excessive stealing can be balanced better and the practice mode and multiplayer modes tweaked (not seating curiously seems to be missing), NBA Live 99 should provide the most satisfying basketball fix to date. Even if the NBA players sit out this season squabbling over contracts, there's no reason why you can't still enjoy classic NBA basketball. CGW
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Fighter Squadron: The Screamin' Demons Over Europe

Real-world Physics Rule in This World War II Sim

by Denny Atkin

The Focke-Wulf 190 dives for safety as tracer bullets from the nose of your P-38 chew into its wing. As the ground rushes toward you, you realize you're heading down an unsafe speed.

But you've worked too hard for this kill to give up now. One final burst and you start to pull up. The 190 seems to have survived your onslaught; but suddenly, as it begins its pullout, the plane's left wing rips free—too weakened from your fire to handle the stress of the pull-up—and the Focke-Wulf spirals into the ground. You recover from your own dive with barely 100 feet to spare, savoring your victory. But then you look out the side of your canopy and realize that you actually bent your plane's wings during the pullout. You're going to have to nurse this one home.

This is just a typical dogfight in Activision's upcoming FIGHTER SQUADRON: THE SCREAMIN' DEMONS OVER EUROPE. In a crowded field of WWII flight sims, FIGHTER SQUADRON has a number of distinguishing features, but none more than its real physics modeling. The sim is being developed by Eric Parker's Parsoft. Fans who experienced the previous effort by that team, A-10 CUBA, will be happy to know that this one makes the already impressive physics model in that previous game look positively primitive.

Wings of Density

I have to admit that even though the game's artificial intelligence was already doing a very good job in combat in the alpha version I tested, I spent at least as much time playing "test pilot" as I did in combat. I performed successful experiments, such as hopping into a B-17, jumping into its ball turret, and shooting an engine nacelle and part of the tail off another plane in the formation. Then I jumped into the cockpit of the other plane and tested how it flew with the damage. Its performance was convincingly hampered.

Then it was time to test-fly the P-38. Looking out the side window while performing high-G maneuvers, I could actually see the plane's wing flexing up and down. Then I purposefully came in for a couple of hard landings. On the first one, I bent the left main gear strut. On the second, I actually knocked the wheel off. What was impressive, though, was what followed. The wheel continued to roll down the runway and down a hill. It finally came to a rest at the bottom, wobbling to a stop like a spinning quartet.

For the less experimentally inclined, the detail of the sim's physics model will translate into a convincing flight environment. Aircraft handling feels authentic, and when you shoot off parts of another plane, its performance will be hampered accordingly. Don't follow too closely behind a
bandit when you're blasting him. If you saw off a wing, it will spin back toward you in a manner eerily reminiscent of WWII gun camera footage; if you hit it, it'll do damage to your own plane. Bullet modeling is very good, with the effects of gravity and gun convergence on your tracers very evident when firing at distant targets.

It was particularly impressive when I made a close pass behind a Hawker Typhoon during a dogfight and actually felt my plane jerk as it passed through the plane's "wake." This brought back an immediate déjà vu to a real-life dogfight against Robin Kim in Sky Warriors T-34s—the plane reactor to the slipstream in the sim just as it did in real life. While other upcoming sims may match FIGHTER SQUADRON when it comes to getting the performance and handling numbers right, no other sim I've flown has so fully captured the feeling of the entire flying experience.

**Fire in a Crowded Theater**

Combat takes place in three theaters: Dover, covering battles over the English Channel; North Africa; and Rhinel and Germany. These theaters are compressed in size; targets would take an hour to fly in reality can be reached in a few minutes of flight in the game. While this will offend purists, it simply means you won't be faced with the choice of equally unrealistic time compression or spending a lot of time flying a boring, uneventful straight line to the target.

The terrain here is absolutely beautiful, with rolling hills and river valleys that promise to be great for low-level dogfighting in multiplayer mode. Roads run between the towns, which are modeled in nice detail, and transparent smoke emits from chimneys. Even this smoke is useful, because it can indicate the current wind conditions. Fogging is used to keep the frame rate up without generating an unrealistic experience.

You can fly missions for three sides in a variety of aircraft. For the U.S., you can pilot the B-17G Flying Fortress, the P-38J Lightning, and the P-51D Mustang. For England, choices are the Lancaster Mk.II bomber, the Mosquito fighter-bomber, and Spitfire and Typhoon fighters. Finally, German pilots can fly the Focke-Wulf 190A, Me-262A, and the Ju-88 bomber. When flying bombers, you can man each of the plane's positions, so you'll be able to put the plane into autopilot and jump into a turret when you're engaged by fighters.

The current build of the game has 10 missions in each of the three theaters, but there are far more than 30 different flying opportunities. Each mission has aircraft from all three countries taking part, and you can fly the mission from the viewpoint of any of these aircraft. You might fly a dam-busting mission in a Lancaster bomber, then fly it again from the perspective of a Spitfire escort.

Next you can revisit this mission from the other side as a P-47-190 pilot trying to take out the Lancasters. In addition, there are training missions for each aircraft, a scramble instant-action mode, and multiplayer missions. The latter weren't implemented in the version I flew. However, given the layout of the terrain, the superb damage modeling, and the smooth multiplayer play in Parsoft's earlier A-10 CUBA, multiplayer mode should be quite intriguing here.

**Call in an Editor**

The sim also includes a complete mission editor, so you'll be able to add your own missions or download new ones from the Net. You can set waypoints, orders, and targets; assign squadrons to escort other squadrons; and adjust weapons and fuel loadouts. You can also adjust numerous aspects of each squadron's artificial intelligence: Skill, Aggression, Loyalty, Morale, and Sanity. Even in this early version, the AI is quite convincing. I could drop planes into an arena and they would engage in realistic fireballs.

More extensibility will come from Parsoft's Open Plane Interface. The developer will document the formats and flight model structure for the sim's aircraft, so third-party developers will be able to create new planes. However, they won't be doing an actual plane editor. And after having had a few of Parker's intriguing flight physics discussions go skyrocketing over my head, I don't think creating new planes will be a task for the initiated. I hope an enterprising third-party developer like Game Tool Technologies will come up with a user-friendly plane editor.

FIGHTER SQUADRON has enough unique features to stand out from the pack. When you factor in its quality physics model and extensible plane set, it has the potential to offer long-term gameplay.
Welcome to the Microsoft® SideWinder® Freestyle Pro joystick. Now you can throw yourself into the action. Literally. Every on-screen movement is controlled with your own movement. It’s called motion-sensing technology. Accurate and highly responsive, not to mention works with your favorite games. It’s programmable buttons and super slick design fits your hand like a glove. Which is handy when you’re throwing yourself from one side of the room to the other.

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by Keith Ferrell

Longevity offers challenges as well as opportunities. Just as with television, when a computer game series gets older, in the best of circumstances, it also gets wiser and better. The groundwork is established freeing its creators to move on to explore other issues. Audiences are familiar with its underlying concepts but, handled carefully, that familiarity can breed renewed excitement rather than jaded contempt.

Based on the pre-release version of SimCity 3000 I’ve been looking at, the designers at Maxis have decided to pursue excitement, both visceral and intellectual. From what I’ve seen—with, admittedly, some of the game’s most promising features not yet implemented—the designers have succeeded.

Nine years ago, when the original SimCity made its debut, resource management and exploitation games were something new. The story goes, in fact, that Broderbund, the game’s original publisher, insisted on putting disasters, including Godzillas, into the game in order to increase the program’s “playability.” They missed the point. Playability was something SimCity possessed plenty of. It was just a different sort of playability. Managing all of the various resources and problems of a city’s growth and health proved to be an almost hypnotic challenge. SimCity was a prime example of the “I’ll just play five more minutes” type of game. Parameters could change in the course of those five minutes, leading you to give it 5—or 50—minutes more. There had never been anything quite like it. SimCity broke new ground (pun intended) and, for a while, had that ground to itself.

No more—SimCity’s influence has been felt on games such as Civilization and all of its offspring, as well as any number of pick-a-planet-and-colonize-it space adventures. You can even find its influence in Command & Conquer and that game’s cousins and clones.

But SimCity’s goal—Godzillas notwithstanding—has always been more peaceful than that of the games it inspired or sired. Build a city. Fill it with people. Keep them happy, prosperous, productive, and safe. Large goals, with large challenges that grow larger with the passing of each simulated day.

SimCity 3000
The Classic City Builder Returns to Its Roots

Everything Old Is New Again

Now, with SimCity 3000, Maxis has returned to the game’s roots, taking advantage of close to a decade’s enhancements in programming tools and computer power to give the game a new look and feel and make it a deeper experience.

The basics remain the same. Pick a piece of land, build houses, stores, and factories; provide power, water, and a transportation system. Now run it. Simple. You know, like Fred Astaire dancing.

SimCity 3000 makes running the city, at least at the highest levels of gameplay, more of a challenge of coordination with your sim-population than you had in the earlier versions. Petitioners in the new game make their desires—and demands—quite clear, and the wise administrator learns quickly to keep a constant eye on the petitioners’ requests.

This time, you get far more of a feel for the personality of your sims. In the earliest versions of the game, information about their

SimCity 3000

**GENRE:** Strategy
**RELEASE DATE:** Q1 '99
**DEVELOPER:** Maxis
**PUBLISHER:** Maxis

ROW ROW ROW YOUR HOUSE Rows homes give a sense of actual city architectural styles and fashions, adding to the realism of residential zones.
lives and the effectiveness of your administration of the city was relayed to you through charts and graphs. That sort of information remains available, but more easily and quickly digestible advice comes from advisors, news tickers, and the ever-present petitioners.

As customary with the SIM series, you can strip away information to provide focused views of one or another aspect of the city and the site on which it stands. Examine power or water supply routes, police and fire zones, and the like. These snapshots of specific managerial areas quickly become an important tool as well as an information resource.

If there was a single aspect of SIMCITY that gave pause to occasional players, it was the speed with which cities became almost too complex to manage quickly, making the game an unlikely source of casual entertainment. That may be even more true of this latest version. While budgeting features were not yet implemented in the copy I examined, there were enough other managerial criteria and concerns present to make it clear that the game will require focus. The city-management tools are there, many of them more easily accessible than before, but they will need your almost constant attention.

And what's wrong with that? SIMCITY never pretended to be a casual game. It's a digitally rendered thought-experiment, and quite a good one at that. No wonder the game has shown up in so many classrooms over the years.

Interfacing With Your Public

The newest incarnation of SIMCITY may take a bit more time to get used to than the original. The interface is clear and well-designed, but it's not particularly intuitive. Playing, as I did, without a manual, is tough: One hopes for clear, concise documentation, as well as reference sheets or charts to help navigate through the multilayered menus. Onscreen or online help would be appreciated as well.

Controls are sensible and easily mastered—once you get a feel for them. Moving the cursor does not cause the screen to scroll automatically; you have to hold down the right mouse button for that. This bothered me until I remembered how annoying autoscroll can be when you don't want to scroll.

Some aspects of running your city have been simplified—providing power and water to your citizens and their enterprises is more automated than I recall from earlier versions.

Other aspects are more realistic—particularly the handling and disposal of your city's garbage. As in the real world, this quickly becomes a dance of various trade-offs and compromises, each of which affects your population and the effectiveness of your city administration. Neighborhoods develop personalities and, one assumes, virtual voting habits. Depending on your policies, you'll find yourself more popular in some parts of town than others.

Without the budgeting features implemented, I hesitate to comment on the economic side of things, but I have little doubt that economic tools will likewise show a leap in sophistication over previous versions.

On the whole, SIMCITY 3000 delivers a far more realistic feel for the populations of its cities, and the behavior patterns of blocs within that population than did its predecessors. Some of the depth is accomplished graphically. Richer renderings are used to deliver information as well as aesthetic appeal.

Look at Me

Some of the enhancements are cosmetic—and cosmetic of a high order. SIMCITY has never looked better. The graphics, particularly in any of the several close-up zoom views, offer a nearly photographic level of detail. People and vehicles move through the city. Plant, water, and other details are likewise more realistic and convincing than ever.

Disasters continue to play a part in the sim-saga, and there are plenty of catastrophes here waiting to undo your hard work.

Sound effects enhance the illusion to a degree that surprised me. The sound is contextual—its nature changes depending on the part of town you're in. Visit a park and you'll hear children go to an industrial zone and you'll hear the sounds of work. It's a nice and effective touch.

A news ticker contains information, but also a repetitive series of "cute" statements that grow tiresome. You can remove this and other control features from the screen. There's also a good selection of background music scores from which to pick.

The introduction of a variety of beautifully rendered famous buildings, including the Alamo and the United Nations, is a delight and provides the gamer with the opportunity to put familiar pieces of grand architecture in the midst of Anytown.

A feature called Starter Towns, not yet implemented, promises to offer historical towns and the challenges those communities faced. I would like to see some of the theoretical and fictional towns offered as well. But I suppose that most of us will create our own cities, towns, and burgs, as we always have. Starting with a patch of ground, we build our dreams—into utopia, dystopia, or something in-between.

The results in SIMCITY 3000 are, more than ever, up to us and our planning and managing abilities. The designers of this program have done well by it, honoring a justly famous predecessor and at the same time adding touches and tools of their own that should help ensure SIMCITY a solid place in gamerooms and classrooms for the next millennium.

www.computergaming.com
Speed Busters

After Releasing the Best Racing Sim in Years, Ubi Soft Takes on NFS With SPEED BUSTERS

By Jeff Green

Talk about your fast starts. Ubi Soft's F1 RACING SIMULATION, released earlier this year, was an outstanding Formula 1 game that instantly took its place next to MicroProse's GRAND PRIX series and Sierra's NASCAR games as one of the best racing sims in years. Not bad for a rookie title.

Now Ubi Soft is hoping to make the same kind of splash in the arcade racer market with SPEED BUSTERS, a fast-paced, action-oriented NEED FOR SPEED-like that uses the F1 RACING engine. Would you want to play SPEED BUSTERS over NEED FOR SPEED III? We were wondering this ourselves. But after a few spins with the beta (the game should be out by the time you read this), we discovered that, as with F1 RACING, Ubi Soft has built in enough innovations and unique gameplay elements to distinguish itself and to seriously challenge its competition.

Dinosaur Crossing

If anything, SPEED BUSTERS is even more arcadey and cartoonish than NFS. Subtitled AMERICAN HIGHWAYS, the game comes with six main tracks set in a variety of locations, including Aspen, Los Angeles, Louisiana, Nevada, and Canada. Although each track includes recognizable "real life" iconography, the fantasy element is cranked way up in this game. Thus, a spin through the Nevada desert will include a gathering of flying saucers overhead, while the Hollywood track includes a detour through a movie studio with a giant Godzilla-type creature roaming the street.

The great thing about these animated objects is that they're not just window dressing. Instead, these are real objects that you can collide with and that will actively get in your way and impede your progress as you race. On the Hollywood track, Godzilla might take a swipe at your car and send you careening out of control. On the Aspen track, a rock slide might strike your car or a snow blower might obstruct your view. The environments will change as the laps progress.

Auto Eroticism

In contrast to the cartoonish environments, however, is some semi-serious driving. Because the game is based on the F1 RACING engine, car handling is more sophisticated than in the average arcade racer. It's still easy, and your options for tweaking your vehicle are limited, but it's still quite common to spin out or lose control. Surface is a real factor here—you're going to slow down in the gravel and slide in the snow.

Unlike NFS, SPEED BUSTERS does not include real licensed vehicles, but instead uses seven fantasy cars based on 1950s and 1990s auto-mobile designs. The irony here is that, while you don't get the thrill of racing a real-life Aston Martin or Ferrari, the trade-off is greater realism: These fantasy cars can take and show damage—something that NFS' licensed vehicles aren't allowed to do—and the damage will affect your car's performance. You'll be able to customize your vehicle's look by creating custom "skins," which you will also be able to upload and download from Ubi Soft's Web site.

The game's 3D graphics (which require an accelerator) are impressive—crisp, detailed, and with a broad color palette, with liberal use of transparency and particle effects, which adds to realism. Music is another nice touch. Each track has been scored separately, and within each track, different musical themes are applied to match the environment. It's a nice change of pace from the standard driving game techno/Euro twaddle.

NFS Buster?

Since SPEED BUSTERS is still in beta, we can't render a real judgment yet. There's still a lot that's not implemented, including multiplayer action and the game's Championship mode. Do PC racing fans really want a game with giant dinosaurs and flying saucers? Maybe not the same crowd that wants GRAND PRIX LEGENDS, but we'll see. One thing that F1 RACING SIMULATION proved, though, is that Ubi Soft knows how to make a great driving game. Don't count SPEED BUSTERS out.

Monaco Grand Prix Racing Simulation 2

As we went to press, Ubi Soft announced the sequel to F1 RACING SIMULATION, called MONACO GRAND PRIX RACING SIMULATION 2. At present, we don't know much besides that Ubi Soft is promising even greater control, deeper customization, and a track editor. Look for a detailed sneak preview in an upcoming issue of CGW.
WANTED

21ST CENTURY
ROBOT BUILDERS

ALIEN THREAT IMMINENT >> RELOCATE TO MARS!

Pack your bags and get your ass to Mars. The baddest robots this side of Uranus are gearing up for a battle royale, and you're at the master controls. Build and blow up over 60 different types of robots with futuristic firepower and state-of-the-art 3D graphics. Blast your way through 30 levels of automated hell and savor the action from almost every possible angle, you'll feel each jarring blow, thanks to the spectacular explosions, amazing lighting effects, terrain morphing and heart-pounding 3D sound. Rock 'em Sock 'em Robots! It ain't...

ROBO RUMBLE

BUILD A BETTER ROBOT

Go to #170 © www.computergaming.com/info/1nk
MechWarrior 3 should really be called MECHWARRIOR 3.5. It isn't a giant robot step up in quality from the other successful MECHWARRIOR games, it's a soaring jump-jet leap. The leap includes deformable terrain: The buildings have destructible geometry, incoming artillery rounds pockmark the ground with craters, and even the Mechs leave distinctive footprints. Similarly, the artificial intelligence has been improved considerably: It can ambush you and use the terrain against you. And the command interface is considerably more friendly: There are pop-up windows you can use to position your subordinates (who are significantly "smarter" than their MECHWARRIOR predecessors) and direct them into action.

ONE GIANT LEAP FOR MECH-KIND

BY JOHNNY L. WILSON
**DOWN, BUT NOT OUT**

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**Shooting Scars**

Playable from either a first-person (cockpit) or third-person (chase-the-Mech view) perspective, MECHWARRIOR 3 features enough eye-popping action to make you think your monitor is in danger of exploding. A Bushwhacker pulverizes a stone column into dust, initiating a chain reaction in which the corner of a building falls atop an unsuspecting Owens and crushes it. The crushing damage causes an explosion, and the Owens becomes unsalvageable slag. A Mad Cat gets pummeled to the ground by a barrage of autocannon rounds. But while it looks as immobilized as someone on the wrong end of a Muhammad Ali knockout blow, amazingly, the Mad Cat extends an appendage and pulls itself to its feet like the gigantic humanoid it resembles. Mechs hide in bodies of water and jump jet—seemingly out of nowhere—to ambush your lance. Mechs step on and obliterate objects. MechWarriors navigate huge caves and tunnels and fight in urban environments and the great outdoors. Mechs with damaged legs take on a crippled bird walk as they limp and stumble in the fight—a fascinating effect whether viewed from the third-person perspective or experienced firsthand in the jiggling cockpit view. Everything about the look of MECHWARRIOR 3 has the impact of a long-range missile. It won’t soon be forgotten.

**Smoke Jaguars in Your Eyes**

MECHWARRIOR 3 is set within the Twilight of the Clans series of novels. That makes it A.D. 3058 in the FASA universe when the heroes of the Inner Sphere are still struggling against the renegade might of the Clans. In the single-player campaign in MECHWARRIOR 3, the gamer and his or her fictional comrades will face the might and technological superiority of the dread Clan Smoke Jaguar Clan. It begins with a rather routine police action (à la Korea?), which immediately goes awry (naturally, the player doesn’t know that right off) and continues to escalate. Fortunately, gamers have some new tools at their disposal.

First, the new mission editor enables you to edit waypoints for your Mech and Mobile Command Base (MCB) immediately after the mission briefing. From the same map where you observed the mission objectives and known enemy concentrations, you’ll be able to grab, click, and move waypoints. What’s particularly interesting is that during the course of the
campaign you'll find that the data provided by your mission briefing is simultaneously invaluable and spotty. At times, you'll need to trust your instincts and reset the waypoints for your survival.

Second, you now have a one-click zoom, which enables you to pinpoint long-range targets better. This view not only looks great, but assists you in making sure that you're taking out a Mech efficiently enough to be able to scavenge from it. Salvage is vital in MECHWARRIOR 3. By changing the green targeting circle first to yellow and then to red, the interface even lets you know that your weaponry is in, respectively, extreme and then effective range. This feature adds new tactical nuances.

As an aside, experienced MechWarriors who have always enjoyed targeting one leg and shooting it until it is amputated will still be able to use that tactic. However, you will now have to deal double-damage to the leg to sever it. Single damage causes a distinctive, animated limp. It's very satisfying to have your enemy doing a high-tech version of the chicken dance while you outmaneuver the lamb-duck pilot and take out a higher priority objective.

Third, you now have command of a MCB—rather a mixed blessing. It is a boon because for the first time you can replenish your ammunition and repair damaged armor in the midst of a mission. You merely enter the MCB and it starts to work on you. Unfortunately, the AI Mechs will try to ambush the MCB while it's en

route to certain waypoints and will directly attack it with your Mech inside if they can.

Fourth, since heat plays a critical factor, MechWarriors can now hit a keystroke to automatically flush coolant through their Mech's system. You can do this twice during a mission, and it's invaluable when you're firing your most powerful weapons against large enemy Mechs or taking too many energy blasts from a Firefly.

Fifth, you can now establish up to five weapon groupings. You have to do this in the Mech Laboratory before initiating a given mission. But this is easy and offers a customizability that gamers have longed for since early in the series.

Finally, MECHWARRIOR 3 sports the widest assortment of Mechs in the history of the series. You'll pilot or face the following beautifully portrayed Mechs: Avatar, Blackhawk, Bushwhacker, Cauldron-born,
WELCOME TO THE PROMISED LAND.
THE ONLY PROBLEM IS, NOT EVERYONE
KEEPS THEIR PROMISES.
2200 AD. What’s left of civilization has landed on a mysterious alien planet. And it’s up to you to chart the fate of humanity. Which of seven governing factions will you choose to lead? Each has its own strengths and weaknesses—and its own agenda. It’s legendary Sid Meier strategy gameplay taken to a whole new level. Just don’t forget to watch your back. Get the full story and demo at www.alphacentauri.com

Mechs with damaged legs limp and stumble in the fight.... It's very satisfying to have your enemy doing a high-tech version of the chicken dance.

Enemy Thine

Of course, all of the improvements described above don't really matter without improved enemy AI. Frankly, MECHWARRIOR 3 has great AI. Even though the version we played doesn't have the AI fully tuned, we can tell that the enemy Mechs are going to be smart. AI routines for the computer-controlled MechWarriors will run the gamut from rookies through regulars to elite. The mix of piloting skill will change according to the mission setup and limitations. You also won't necessarily know the skill of the pilot from the size of the Mech. Big doesn't necessarily mean better, but as elite enemy pilots proliferate, you will notice that Mech configurations will change from standard configurations to more exotic ones.
Funny things happen when people play with a flame-throwing dragon...
The biggest improvement in the AI routines is the fact that they are no longer primarily scripted. Enemy Mechs will act and react according to tactical routines precipitated by their own mission objectives, damage situation, ammunition supply, number of enemies faced, primary attack types, and pilot skill. You can no longer simply assume that you'll have only a given number of Mechs to face when you enter a particular combat venue. The force mix of the enemy will depend on a number of dynamic factors as will the level of their aggressiveness.

SimMech

New hands have been at the controls of MECHWARRIOR 3 since the game's inception. (Zipper Interactive took over development from fledgling FASA Interactive, a division of the publisher that created the BattleTech universe.) But from what we've seen, the new hands appear to be elite ones. Zipper is peopled largely by military contractors who helped build the U.S. Army's SimNet experience. (SimNet was the networked universe of combat vehicle simulations that prepared U.S. troops for the Gulf War.) SimNet was so realistic that some tankers have been known to exit the simtank vehicle to take compass readings; others sweated profusely throughout the exercises as though their lives were really on the line.

The folks at Zipper observed military personnel using SimNet at Fort Knox, Kentucky, and were greatly impressed. They've since

**JET LAG**

When you tire of making a big splash, you can jump-jet out of the water and onto the beach. Should you land on something like this unfortunate crate, it ceases to be an obstacle.

**BIGFOOT LIVES**

Even the aesthetic touches, such as differing footprints left behind in various terrain, have implications within the game.
they get all fired up!

"Drakan... steps beyond the safety of me-too game design." PC Accelerator

"Drakan has 'play me' written all over it." PC Gamer

"Never before seen level of continuity in a 3D environment." Next Generation

"E3 Sizzler." Computer Gaming World

Jump on the back of Arokh, a two-ton warrior dragon with firepower to burn. And you'll need all the firepower you can get to survive the treacherous ground and aerial combat in "Drakan: Order of the Flame". Experience the thrill of flying through vast, breathtaking 3D worlds. Master 50 different hand-to-hand combat weapons, employ up to seven different spells and do serious damage from the air with six different dragon attacks. And with multi-player support for up to eight players, "Drakan: Order of the Flame" lets you battle it out via the Internet or LAN, or go head-to-head over modem. Strap yourself into the ultimate hot seat.

Drakan
Order of the Flame

ARRIVING FEBRUARY 99

More screen shots and a chance to win cool prizes at www.psygnosis.com/drakan

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The idea of the "average" gamer's holiday may well be as much of an aberration as the "typical" nuclear family depicted on these pages. Images of blow torches and depleted uranium shells instead of the sugar plums of old may dance in the heads of gamers tucked in their beds on the proverbial "Night Before." Mayhem is as likely to define merriment for gamers as much as the jolly old fat man of holiday lore.

As in holidays past, our Holiday Hot 100 appears to assist you in explaining your holiday wishes to those of a gentler persuasion. Our editors have once again drawn up lists of the best games in each genre that are likely to come out this holiday season or are already out. However, like Jacob Marley's ghost in the Dickens classic, some of what is shown may be visions of what might be or could be—rather than what must be. We've tried to include only those products with a high chance of releasing before the holidays, but we can't guarantee that the development elves at every company will actually make their ship dates.

We boldly suggest that you check out this guide, circle the games you'd most like to unwrap during the holiday season, and pass the magazine along to your favorite gift giver. With your help, they can avoid being virtual Scrooges because they just didn't understand what you wanted. Yule be glad you did.
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Meet the Microsoft® Sidewinder™ Force Feedback Wheel and the Force Feedback Pro joystick. Feel the force of every game action in the palm of your hand, thanks to a colossal 16 bit, 25 MHz processor. And with Game Controller Software you can program buttons to the actions in the games. Did we mention you can use them with over eighty games? Buckle up. You’re in for a bumpy ride.

Microsoft Urban Assault™ comes free with the Force Feedback Pro. Microsoft Monster Truck Madness™ 2 and Microsoft CART Precision Racing™ come free
...The wheel rattle in your hands as you crush rocks with your monster tires.

...The joystick snap with the impact of a rocket ripping into your tank.

...The intoxicating power of being totally and completely immersed in the action.

with the Wheel.
HALF-LIFE takes the worn premise of alien invasion and injects it with vibrant new life, thrusting gamers into the most immersive alternate world yet burned onto a CD-ROM.

little touches and scripted scenes that create an incredibly cinematic feel. Spin around a corner to see a howling research scientist pulled to his doom through a shattered ceiling. Run into a hallway and jump when a mutant tears through the door behind you. Escape on a descending elevator platform and hastily reload your puny .45 as slithering aliens plummet after you. The overwhelming sensation you have when playing HALF-LIFE is of constantly trying to catch your breath.

Adding to the challenge is the advanced AI of the monsters, who'll hunt in packs, pursue you through the levels, and retreat. Fortunately, you're not always forced to deal with them alone. You can direct security personnel to accompany you and even get some characters to administer much-needed medical treatment.

The Valve team has pushed the QUAKE 3 engine to its limits and has added a lot of its own code. The results are horrifyingly detailed monsters, brilliant explosions, and a gameworld that almost seems alive. Dynamic textures allow you to see bullet holes in walls and let you bash almost anything you see. All this adds up to a game any action fan would love as a gift.
2. REQUIEM
Windows 95 CD-ROM, $50
3DO, (650) 261-3000
www.3do.com

FALLEN ANGELS HAVE
come to Earth, infecting the popu-
lace with their evil and summon-
ing demons to do their bidding.
You are Malachi, one of the
Chosen, a loyal angel who's been
sent to do whatever it takes to
stop the Fallen from creating a
ture Hell on Earth. It's the ultimate
battle between Good and Evil, and
it rages in 3DO'S REQUIEM.

Dark and foreboding, REQUIEM
is beautiful to look at, with incred-
ibly detailed environments that
embody the spreading corruption
of the Fallen. The action takes
place in dank cityscapes, sinister
cathedrals, and the bowels of
Chaos itself. The attention to detail
is as evident in the intricate
design of stained glass windows
as it is in a painting hung in a
seedy bar. While the game will run
in software, you'll need a 3D card
to get the most out of it.

REQUIEM will feature only five
traditional weapons as opposed to
a shooter's usual bloated arsen-
al. The focus will be on the 24
divine powers of Malachi. As an
angel, he can turn
eemies to salt, make
blood boil, control
minds, and fire devas-
tating lightning bolts.
His powers are not all
offensive either; they
include shielding and
deflection. To succeed,
gamers will have to
master all the skills, not
just the killing ones.

NPCS will help propel
the story through
sequences animated by
the robust game engine.
With moving mouths
and faces, they're some
of the most lifelike NPCs
we've seen in a shooter.
Interaction with them is integral
to moving through the game and
should alleviate the key hunts that
normally plague such games.

3. BATTLEZONE
Windows 95 CD-ROM, $49.95
Activision, (310) 255-2050
www.activision.com

MORE THAN AN UPDATE
of the arcade classic, Activision's
BATTLEZONE not only reinvents the
hoary tank genre but sets the
standard in the growing realm of
action/real-time strategy hybrids.

Taking place during
the great Space Race
of the '60s and '70s,
BATTLEZONE ranges
across the planets and
moons of the Milky
Way as the United
States and Russia slug
it out to possess a
strange new element.

While the game retains the
hover-tank blasting action of the
coin-op original, it adds a whole
new layer of strategy, stressing
resource management, troop tac-
ts, and base building. All of this
takes place from the cockpit of the
gamer's missile-slinging command
tank via a mouse-driven interface
that is one of the slickest and
most intuitive to be found in any
game. A handy 3D topographical
map helps you and your units
negotiate and exploit the treach-
erous cliffs and canyons that scar
each planet. A rich back-story sets
up the deftly designed missions,
culminating in battles and base
assaults that erupt in an explosive
orgy of blasting gun towers, cir-
cling rocket tanks, and the thun-
derous attacks of the slow but
deadly Goliath walkers.

Some terrific 3D effects—
including choking smoke, brilliant
explosions, and the lovingly
detailed units themselves—make
BATTLEZONE a visual delight.
Multiplayer action is a blast, feat-
turing deathmatches in which
players can man weapon-loaded
lunar probes as well as the full-
bore strategic game. Certain to
please any gamer, BATTLEZONE is
not to be missed.
It can take you from New York to South Africa. It can take you from the year 1803 to the year 2000. It can take you from penniless manual laborer to powerful multimillionaire. It can take you from a normal, well-adjusted, well-rounded person to an obsessed, single-minded, one-track train head.

If you want to hop on a plane, car or ship, hop on another game. This is a real railroad game, not just a strategy game that happens to involve railroads. Everything is authentic, from the period video and pictures interleaved within the game to the design and interface. A.I. opponents are based on real people. And all maps are real (based on satellite photography from the U.S. Geological Survey and other sources).

Don’t get left at the station.

A strategy game that runs on a totally different kind of engine.

34 different cargos and 59 engines from around the world.

1024 x 768 graphics in 16-bit color. Up to 300,000 polygons on the screen at once.

40 different tycoons all share one goal: bankrupting you.
4. THIEF:  
THE DARK PROJECT  
Windows 95 CD-ROM, $49.99  
Eidos Interactive, (415) 547-1200  
www.eidosinteractive.com  

ONE OF THE MOST ORIGINAL IDEAS IN ACTION  
gaming distinguishes THIEF: You're cast as a burglar  
who must utilize the utmost in stealth to achieve his  
goals. Discarding the run-and-gun mentality that  

SHOGO casts you as a young officer in the United Corporal  
ity Security Force. All the anime conventions are there:  
an intricate story filled with a host of characters; loads of  
mecha action; and a wide variety of over-the-top weaponry.  
Using Monolith's own LithTech engine, which stands up well  
to the QUAKE II engine, SHOGO features branching missions,  
action that alternates between being on-foot and piloting the  
Mobile Combat Armor, well-  
animated characters, and an  

dominates most first-person  
games, THIEF creates a palpable  
tension while you eavesdrop on  
enemies, use water arrows to  
douse torches, creep along heavily  
shadowed walls, and dispose of  
the few bodies you leave behind  
(lest the guards discover them).  
The 3D-accelerated graphics are  
great, creating moody cobblestone  
streets bathed in gloom and bring-  
ing the dank, forbidding, pseudo-  
medieval world to life.  

5. SHOGO: MOBILE  
ARMOR DIVISION  
Windows 95/98 CD-ROM, $49.99  
Monolith Productions, (800) 241-4263  
www.monolith.com  

WHILE MOST FIRST-PERSON  
shooters tend to share the same  
sort of feel, Monolith has looked  
eastward for the concept and  
design of SHOGO: MOBILE ARMOR  
DIVISION. Inspired by such anime  
as Patlabor, Macross, Gundam,  
and Neon Genesis Evangelion,  

A stunningly beautiful gameworld  
and breathtaking action set DARK  
VENGEANCE apart from the pack.  

intriguing story. For anyone who  
even remotely enjoys anime,  
SHOGO is a great gift choice.  

6. DARK VENGEANCE  
Windows 95 CD-ROM, $54.95  
GT Interactive, (212) 726-4205  
www.gtinteractive.com  

A STUNNINGLY BEAUTIFUL  
gameworld and breathtaking  
action set DARK VENGEANCE apart  
from the pack. Bash your way  
through a classic fantasy setting  
as one of three characters: a  
heavily muscled Gladiator, a spell-  
wielding Warlock, or a crafty  
Trickster. Each character comes  
with a unique set of weapons, like  
a staff that materializes vicious  
bats and a devastating mace that  
covers its wielder in protective  
stone. With each character deliver-  
ing dramatically different action,  
the replay value is high.  
Hand-to-hand combat goes  
beyond merely mashing a "Fire"  
button because characters have  
multiple attack moves and can  
dodge and block attacks. More  
than 40 monsters—such as  
knaves that made of stained glass,  
dark elves, and wolf bats—chall-  
enge you in 18 missions, includ-  
ning three character-specific levels.
You see Pinky, the plan is to develop a secret hypnotic message that will make humans think I am their almighty ruler, and embed it in an action-packed video game. Naturally we will be the stars, people will play the game by themselves and become horribly addicted. Then they will want to play the game with their friends, and their friends will become addicted. Soon, they will play the game over the Internet, a silly little information infrastructure that humans use to "chat" with each other. Anyway, once we control the Internet, every human being will bow down before me, their rightful master. And by the turn of the new millennium, the world will be ours!

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multi-player maze game
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PHILIPS
Let's make things better.
7. ODDWORLD:
ABE'S EXODUS

Windows 95/98 CD-ROM, $49.95
GT Interactive, (212) 726-4205
www.gtinteractive.com

The wonderfully odd characters of Oddworld return in this captivating sequel to ABE'S ODDYSEE. This time the Glukkons are using Mudokons to mine bones for SoulStorm brew, and it's up to Abe to rescue them. He has a number of tricks at his disposal, such as possessing his enemies or using his farts as floating bombs. Abe's charming speech ability is also important to the game, and his vocabulary has improved.

EXODUS boasts lush graphics and challenging puzzles consistent with the world. Even better, you can now save at any point. Unfortunately, our version forces you to quit your game before you can load a saved game. We hope the final version will fix this.

8. KLINGON
HONOR GUARD

Windows 95 CD-ROM, S55
MicroProse, (510) 864-4550
www.micropros.com

The best game using the UNREAL engine this year may not be UNREAL, but KLINGON HONOR GUARD (KHG). Set in the Next Generation universe, the game casts you as a member of the Guard charged with tracking down renegade Klingons who have attacked the High Council.

KHG features 26 levels ranging through seven alien worlds. Better still, it spotlights some of the most popular Star Trek denizens, including Andorians, Naussicans, and, of course, hordes of Klingons.

You'll be armed with a full complement of weapons to help you spill the magenta-hued blood of the Klingons, including particle-dispersal cannons and the vicious Bat'ath. Actors from the series provide the voices.

9. SIN

Windows 95 CD-ROM, $49.95
Activision, (310) 255-2050
www.activision.com

SIN FROM BEING just another first-person shooter are the people behind it—Ritual Entertainment. With the acclaimed LevelLoad designing levels, you can expect lots of insidious surprises and challenges. The story-driven action begins when your alter ego, John Blade, is called in to thwart a less-than-routine bank robbery only to discover a larger plot that propels him across six dynamic game regions. Weapon-loaded vehicles are available in limited portions of the game, all the better to mow down SIN's crafty enemies, who use cover and shadow, follow you (even up elevators), and shoot at you through glass.

10. HEART OF DARKNESS

Windows 95/98 CD-ROM, $49.95
Interplay (800) INTERPLAY www.interplay.com

Designed by the team behind OUT OF THIS WORLD and FLASHBACK, this game was lost in development limbo for years but has finally seen the light of day. Don't let its lack of 3D or its side-scrolling gameplay put you off. HEART OF DARKNESS (HOD) is a compelling platform game that requires thinking and reflexes. Seamlessly integrating FMV and gameplay, HOD features lush background art; detailed, animated characters; and stellar use of sound. Perhaps the game's only flaw is that it's too short. Fans of side-scrolling platform games won't want to miss this one.

Looking to take your action gaming proclivities into the real world? Paintball is a good (and legal) option. If that's your bent, consider picking up Kingman International's new Spyder Elite paintgun for $225. Capable of firing balls at 298 feet per second and featuring a turbulence venturi bolt for increased accuracy and distance, the Spyder Elite more than gets the job done. www.kingmanusa.com
A NEW QUEST HAS BEGUN.

16-bit color with real-time lighting
180 motion-captured 3D characters

60 spells to create and adopt
11 plot-twisting chapters
Tactically complex, turn-based combat

Return to a land of intrigue and adventure. Lead your band of five characters on a quest to recover the Tear of the Gods, a mystical relic coveted by a madman bent on spreading darkness across the land of Midkemia. From the dizzying heights of Krondor's Palace, to the haunted depths of a temple dedicated to an evil as ancient as the gods themselves, never before has an RPG given you so much of what you want.

RAYMOND E. FEIST'S

Return to Krondor

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Even More Gift Ideas for Action Fans

IT'S TOUGH TO WHITTLE
the crowded action genre down to just 10 titles since there are plenty of games worthy of attention. There are just too many to squeeze into that main list, so here are a few more suggestions.

Even the most Luddite non-gamers probably know of Lara Croft by now. She and her freshly pierced navel will be hitting store shelves sometime before Christmas in TOMB RAIDER III. This year's model features 15 nonlinear levels taking place in locales as various as the South Pacific, India, and the United States' (in)famous alien research facility, Area 51. TOMB RAIDER's signature lush graphics keep getting better and sport multicolored lighting effects, water reflections, and weather like fog and snow (in which Lara will leave footprints).

Fans of DESCENT will likely enjoy the hoverbike-riding, laser-blasting action of FORSAKEN. Gamers speed through twisting, enemy-loaded tunnels in a truly 3D world, where passages are just as likely to be over your head as to either side. While the game will run without a 3D accelerator, you need one to truly enjoy the breathtaking graphics. Incredible lighting effects and searing explosions distinguish this title. This is an ideal gift for anyone getting a Voodoo² card this year.

UNREAL is easily the most beautiful first-person shooter in some time, topping even QUAKE II when it comes to glittering eye candy. The unique, imaginatively designed alien worlds are engrossing and populated with tough monsters. QUAKE II loyalists will enjoy the QUAKE II: GROUND ZERO expansion pack. Designed by Rogue Entertainment, the geniuses behind the QUAKE mission pack DISSOLUTION OF ETERNITY, this CD-ROM is packed with 14 diabolical new single-player levels, 10 new DeathMatch levels, and loads of new weapons, power-ups, and monsters—all the things that make dealing death fun.

Iggy Pop is the perfect thing to listen to while playing QUAKE II and the like. Songs like “Gimme Danger” and “Search and Destroy” prove Iggy was gibbing iron Maidens long before id digitized them. Pop it into your CD-ROM drive and go to town with that rail gun.

Spotlighting a 20-year-old CD in a magazine so obsessed with bleeding-edge technology may seem strange, but Iggy Pop is the perfect thing to listen to while playing QUAKE II and the like. Songs like “Gimme Danger” and “Search and Destroy” prove Iggy was gibbing iron Maidens long before id digitized them. Pop it into your CD-ROM drive and go to town with that rail gun.

If you prefer spells and staves to guns and ammo, check out Activision’s HERETIC II, powered by the QUAKE II engine. You play from a third-person perspective as you seek to find a cure to a hideous plague spreading across the continent. But don’t think the fantasy setting and third-person perspective make this some sort of “Elf Raider.” The emphasis here is squarely on action as you hack, slash, and blast fireballs through richly imagined cities, swamps, and dungeons.

Finally, online gamers might enjoy FIRETEAM or STAR SIEGE: TRIBES. FIRETEAM ships with a microphone headset that allows you to converse with your squad-mates in realtime to coordinate attacks in this third-person shooter. This Internet-only game won’t ship until early 1999 but can be ordered directly from Multitube. Dynamix’ STAR SIEGE: TRIBES also emphasizes team play, but from the more traditional first-person perspective. TRIBES features variations of “Capture the Flag” on huge alien worlds and can be played on a LAN or the Internet.
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www.rageofmages.com

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1. KING'S QUEST:
MASK OF ETERNITY

Windows 95 CD-ROM, $49.95
Sierra On-Line, (425) 649-9800
www.sierra.com

WE'VE BEEN ANTICIPATING
the eighth game in Sierra's long-
running KING'S QUEST series for
close to two years now and, hon-
estly, we've spent most of that
time being skeptical about it. But
now that we've actually played
the game, we are willing to pub-
licly eat crow and say, with assur-
ance, that KING'S QUEST: MASK OF
ETERNITY is the adventure game
we most want to play this holi-
day season.

Veteran designer Roberta
Williams, who goes all the way
back with the Sierra series to
KING'S QUEST I in 1984, is again at
the helm, and there clearly was no
reason to doubt her sure hand. As
promised, Williams has taken this
game in a completely new direc-
tion, while adroitly preserving the
spirit of the series. It's a remark-
able achievement.

We are willing to publicly eat crow and say, with
assurance, that KING'S QUEST: MASK OF ETERNITY is the
adventure game we most want to play this holiday season.

KING'S QUEST: MASK OF
ETERNITY once again takes
place in the kingdom of
Doventry, and as before,
you embark on a heroic
quest to save the land. But
that's about all this game
shares with the past.

Williams' story is set in
a completely 3D world,
with an engine as powerful
and robust as that of any
current-generation action
game. Really. Connor, your
character, travels the beau-
tifully designed levels in
the game from either a
third- or first-person
perspective. You will have to
engage in combat now (part of
our early skepticism), but the cool
thing is that it's not only scalable,
it's actually fun, too.

The greatest thing about the
game, however, stems from the
fact that despite the radical
changes it's still an adventure
game at heart. A real one, based
on puzzle-solving, in which the
only way to succeed is by using
your brain.

We've bemoaned the death of
the adventure game all year. With
KING'S QUEST: MASK OF ETERNITY,
Sierra—appropriately enough—
has given the genre new life.
2. GRIM FANDANGO
Windows 95/98 CD-ROM, STBA
LucasArts, (888) LIC-GAMES
www.lucasarts.com

WE’VE WRITTEN ABOUT the latest comic adventure from LucasArts several times now, and what can we say? We still can’t wait to play it. As most gamers know by now, GRIM FANDANGO is an all-3D adventure game based on Mexican folklore and set in the Land of the Dead. You play the role of world-weary dead man Manny Calavera, a skeletal inhabitant trapped in the Land of the Dead. He’s anxious to get out and commits a desperate act that plunges him into a web of intrigue straight out of DOUBLE INNOCENCE and any number of other classic noir movies. The game was designed and written by Tim Schafer—the brain behind LucasArts’ DAY OF THE TENTACLE and FULL THROTTLE—and despite the grim-sounding subject matter, you can expect the script to be chock-full of the same smart-alecky comic genius found in those games.

What is totally different this time around is the game’s look. Like Sierra, LucasArts has (at least temporarily) abandoned its long-standing 2D graphics engine for an entirely new 3D one. Gone is the much-loved SCUMM engine in favor of one that lets you physically maneuver your character through the world (even with a gamepad). The gameplay is the same as it ever was, just a bit more dynamic: Instead of clicking around the screen for hotspots, for example, Manny will physically turn his head when he walks by an object that you can interact with. The bottom line on this one is simple: It’s a LucasArts adventure game. We want it.

3. SANITARIUM
Windows 95 CD-ROM, $49.95
ASC Games, (203) 327-3366
www.ascgames.com

IT MAY NOT BE THE cheeriest holiday gift in the world, but this dark, disturbing adventure game, designed by DreamForge Entertainment, came out of nowhere earlier this year and totally blew us away.

Unlike Sierra’s KING’S QUEST and LucasArts’ GRIM FANDANGO, SANITARIUM breaks no new ground graphically, but that doesn’t matter. What sets SANITARIUM apart is its skillful storytelling, which takes a gripping plot and plays it out in a way that remains utterly unpredictable and unsettling until the very end.

The game puts you in the role of a man who wakes up in an insane asylum, unable to remember who he is or how he got there. As you attempt to discover your identity, you’ll embark on a metaphysical mystery over a series of surreal levels that will leave you constantly questioning whether what you’re seeing is “real” or not. Are you experiencing these horrors, or are they the fevered dreams of a madman—or both? If they are just dreams, what do they mean? These questions will keep you glued to your computer screen.

The game’s isometric perspective and traditional puzzle-solving gameplay are decidedly old-school, but they work well, and the puzzles (for the most part) are brilliantly integrated into the storyline. SANITARIUM is the darkest, most disturbing, and—in terms of plot—most memorable adventure of the year. A perfect gift for those long winter nights.
Available on Windows 95 CD-ROM. Visit your local retailer or call 1-800-695-GAME, day or night, U.S. or Canada.
To those who always wanted to rule the world —

stop thinking so small.

Introducing Star Trek: The Next Generation® Birth of the Federation,™ the first PC strategy game to put you in the center of the vast STAR TREK® universe. Control one of five alliances, each with its own agenda: the diplomatic Federation,™ the stealthy Romulans,™ the warrior Klingons,™ the entrepreneurial Ferengis™ and the ruthlessly efficient Cardassians.™

Command over 50 authentic 3-D starships. Engage in ultra-realistic 3-D combat. Explore black holes, worm holes — every corner of space. Up to five players can compete via LAN, modem or over the Internet. Think you’ve got what it takes to rule the universe? Make it so.

STAR TREK
THE NEXT GENERATION

BIRTH OF THE FEDERATION™

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THE BLACKSTONE CHRONICLES
Windows 95/98 CD-ROM, $59.95
Legend/Mindscape, (703) 222-8515
www.legendent.com

ONE OF THE FEW GOOD things that came about while Random House owned Legend Entertainment was that the big publisher arranged for acclaimed adventure-game designer Bob Bates to meet horror novelist John Saul. Some three years later, after a series of best-selling books and a

TV miniseries, we finally get to play the game on which all of this is based. The MYST crowd will swoon over the pretty pictures. And serious adventure gamers should be happy that they have a creepy, cerebral, psychological thriller. The game is based on some of the more unsavory aspects of mental health hospitals.

THE NEXT ELDER SCROLLS game from Bethesda Softworks is not the sequel to DAGGERFALL (which is still a ways off). Instead, it's an adventure game that attempts to tell a smaller story in the world of Tamriel. Like MASK OF ETERNITY, REDGUARD is a 3D game that combines elements of action and adventure while focusing strongly on plot and character interaction. The game's look is, mercifully, light years beyond that of DAGGERFALL. And the plot—much more tightly focused than the mess that was DAGGERFALL—should serve to keep adventure gamers enthralled.

Stocking Stuffer

The hallmark of any great adventure game is its story, so why not get the adventure gamer in your life some actual books? John Saul's creepy six-volume, serialized novel The Blackstone Chronicles is available in a collected set for $14.95 from Random House. For an even creepier, more cerebral reading experience reminiscent of SANITARIUM, check out Haruki Murakami's unforgettable cult classic, Hard-Boiled Wonderland and the End of the World ($13, Vintage International).

Other Adventures

If we had a sixth spot on either this list or the RPG list, we would have definitely included QUEST FOR GLORY V: DRAGON FIRE. The fifth game in Sierra's beloved, long-running adventure/RPG series has been in development forever, but at last it's almost complete. It's a great-looking game that will surprise a lot of people. REDJACK: REVENGE OF THE BRETHREN is the latest adventure from CyberFlix, which hit it big in a weird way when a year-old game of theirs unexpectedly popped back up on the charts. The game? TITANIC. This time they tackle pirates in a traditional old school-style adventure. It's no secret that we're not the world's biggest RIVEN fans, but far be it from us to be so Scrooge-like as to not recommend it for the holidays. For the early adopter in your life, it's also now available on DVD, as is Broderbund's JOURNEYMAN PROJECT 3: LEGACY OF TIME.
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Role-Playing

1. MIGHT AND MAGIC VI

Windows 95 CD-ROM, $49.95
3DO, (650) 261-3000
www.3do.com

The Monster RPG

Of 1998, MIGHT AND MAGIC VI, showed up midyear and instantly won over legions of RPG fans with its addictive, endless, and exhaus-
tive gameplay. Months after its release, most of us are still playing this game, still trying to conquer the tougher denizens of Enroth and still not bored or sick of it all. Why? Because like all of the games associated with New World Computing's MIGHT AND MAGIC franchise, MIGHT AND MAGIC VI, through crafty design, manages to provide hundreds of hours of gameplay while never feeling out-of-control and unmanageable the way DAGGERFALL does.

While remaining utterly faithful to the series' spirit, the game stands as a serious improvement over the previous entries in every way. It sports a deeper spell book, a better experience and skill model, and a real-time/tum-based toggle that keeps you moving at a brisk pace yet lets you slow down for strategic thinking during combat. The 3D graphics won't get mistaken for UNREAL, but they're quite good and don't require an accelerator card. Extra touches—such as a cloth map, hidden dungeons, and undocumented item enchantments—speak to the overwhelming generosity put into this game.

Yes, the storyline is minimal at best, the NPCs are annoying and mostly useless, and some of the dungeon combat is painfully tedious, but these are small marks against a gigantic gift of an RPG. If there's a role-playing fan in your life who hasn't played this yet, MIGHT AND MAGIC VI is the number one holiday pick.
recent experience with the beta shows the payoff. The graphics—from the gameplay's isometric view to the meticulously designed interface, screens, and character portraits—are detailed and evocative. Combat is real-time, but a strict adherence to AD&D rules ensures that it's more than a click-fest. The well-designed interface simultaneously balances tons of options while keeping everything simple and intuitive.

RPG of the year or another AD&D letdown? We can't yet say for sure, but we know which way we're leaning.

2. BALDUR'S GATE

Windows 95 CD-ROM, STBA
Interplay Productions,
(949) 553-6655
www.interplay.com

BALDUR'S GATE IS THE most anticipated RPG of the year, and it should be out by the time you read this. If it holds up to everything we've seen so far, it just might move up a notch when we get to our end-of-the-year rankings. BALDUR'S GATE is a hugely ambitious five-CD game set in the Advanced Dungeons and Dragons' Forgotten Realms world. Not only is it the first AD&D computer game in years to even have a chance of not totally sucking, but it also has the makings of a classic.

Both a single- and multiplayer game, BALDUR'S GATE takes place along the Forgotten Realms' Sword Coast, where an iron shortage sets in motion a series of events that will take you from your quiet castle life out on to—what else?—epic heroic quest. You begin the game as a single character (which you'll generate using any of the classic AD&D races, classes, and alignments). But you'll end up with a party of up to five other characters.

Bioware, the game's developer, has been working obsessively on this game for years, and our
Death is the only reward for those who fail.

Behind you lie the gates to the stronghold of New Jollis, the largest city in all of South Vormis. You stand in the central quarter before the legendary Big Rocs' Cafe. The Duke has declared a state of martial law until the brigands that have been terrorizing his lands are defeated. Great riches and fame await the heroes that succeed, and their names shall be sung by troubadours throughout the land.

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Adventure and Glory await you in this Radical New Online Role-playing Game.

- Over 200 Race/Class combinations
- Scores of shops with thousands of items
- Intricate plot lines, not just hack and slash
- See what your character sees in a 3D world
- Hundreds of magic spells that you can alter to suit your needs

www.rubiesofeventide.com
experiences and a different style of gameplay will find the richest and most emotionally affecting story of the year in FINAL FANTASY VII.

4. Fallout 2
Windows 95 CD-ROM, $59.99
Interplay Productions,
(949) 553-6655
www.interplay.com

Fallout 2 is definitely a case of "more of the same." But since the original was the best role-playing game in years, that's not necessarily a bad thing. The sequel to our 1997 RPG of the Year, Fallout 2, returns you to a postapocalyptic California, where you set off once more on an epic quest among mutants, giant scorpions, and other irradiated Californians. Interplay has been awfully quiet about this one since the abrupt departure of designer Tim Cain; but after playing the beta, we're not too worried. Fallout 2 should retain the original's unique setting, proven gameplay, and sense of style and humor. It's not breaking new ground, but it should be a lot of fun.

3. Final Fantasy VII
Windows 95 CD-ROM, $54.99
Eidos Interactive, (415) 547-1200
www.eidosinteractive.com

This first PC port of SquareSoft's legendary Japanese console RPG series wasn't quite the home run some of us hoped for (it was marred by some installation problems and less-than-stellar graphics and sound), but it's still a landmark game. Final Fantasy VII (FFVII) is easily as huge as Might and Magic V, but that's where the similarities end. FFVII is more like a movie or novel in which you guide a rotating cast of characters through a complex story filled with acts of heroism, love, heartbreak, betrayal—and lots and lots of combat.

The game's plot (much too complicated to describe here) combines elements of science fiction, fairy tale, and heroic adventure. The graphics evoke Japanese animation (anime), with an exaggerated, cartoonish style (in 3D, for which an accelerator is recommended but not required). The game is far more linear than PC role-players are used to. The flip side, however, is that each character you portray is so deep and emotionally complex that once you've been playing a while, you'll find yourself becoming genuinely attached to him—and rooting for him—as you continue.

You need to change your expectations for a game like Final Fantasy VII. It is, at root, a console game best played with a gamepad (there are even some arcade sequences to negotiate). But RPG fans who are open to new
THIS GAME WILL KICK YOUR STRATEGY-LOVING BUTT

KILLER STRATEGY.
KILLER INTELLIGENCE.

KKND2
KROSSFIRE

WWW.MELBOURNEHOUSE.COM/KKND

download the demo. prove us wrong
5. RETURN TO KRONDOR

Windows 95 CD-ROM, STBA
Sierra On-Line, (425) 649-9800
www.sierra.com

WE'VE STOPPED COUNTING

how many times this game has appeared on various CGW lists over the years, but Raymond E.

Feist's long-delayed sequel to the classic BETRAYAL AT KRONDOR looks like it's really, truly, finally going to ship this fall. We're giving it one more chance. Developed by Pyrotechnix, RETURN TO KRONDOR tells a brand-new 10 chapter story, penned by Feist, which is set in the fantasy world of Mickemia in a time just after the events occurring in BETRAYAL. It's turn-based, it's party-based, it's 3D, it's Feist. Now we're just waiting for Sierra to say, "It's done."

Other RPGs

There are a ton of other RPGs on the horizon in this newly revived genre, so plan on sharpening your sword and pulverizing your enemies for many months to come.

HEXPLORER, from Infogrames, is a big, retro-looking RPG with a GAUNTLET/DIABLO feel—which means lots of head-bashing and treasure-looting. Its look is a little dated, but the game's easy to get into, and has a nice sense of humor. See our full review in next month's CGW.

RAGE OF MAGES is a dark, detailed Russian import with a unique "mission-based" structure. We'll have a review on this next month as well.

If budget is a concern, and you don't mind venturing into the land of the really old-school, then you can't do much better than Jeff Vogel's award-winning shareware RPG, BLADES OF EXILE, which offers tons of gameplay and a scenario editor (www.spidweb.com).

In the way distant-future department, there are a number of exciting announcements.

Interplay is following up BALDUR'S GATE with an AD&D game that looks to be at least as epic as that game, if not more so. PLANESCAPE: TORMENT is being developed by Zeb Cook, the man who created the Planescape universe for TSR, along with Colin McCombs, another TSR refugee. The game, built on the BALDUR'S GATE engine, is still way off—but look for a big sneak preview in an upcoming CGW.

As we went to press, two new RPGs were announced based on popular pen-and-paper games from White Wolf Game Studios. The first, ASC Games' WEREWOLF: THE APOCALYPSE, sounds awesome, but it's at least a full year away. Developed by Dreamforge Entertainment (makers of SANITARIUM) and using the UNREAL engine, WEREWOLF will take you from London to Greece in an action/RPG that plunges you into the heart of a war between the Garou (the good) and the Wyrm (the bad) werewolves in White Wolf's dark universe. The second game is VAMPIRE: THE MASQUERADE, published by Activision and developed by Nihilistic Software, a very strong looking startup with talented refugees from LucasArts, Rogue and more. For fans of White Wolf's games, 1999 is looking like a landmark year for PC games.
Discovery consists of seeing what everybody has seen and thinking what nobody has thought.

Albert Szent-Györgyi
Earth

We follow the precepts of our father. His law is clear: Use no magic when steel and muscle will suffice, or disaster and chaos will follow. We keep the law. Our armies enforce it.


Four Kingdoms, four creeds. Four immortal siblings have fought for 1500 years to rule the land of Darien. But one of the rivals discovers an ancient artifact, and it shatters the balance of power overnight. Massive armies collide. Supernatural forces level entire cities. Chaos destroys the land and the stability of the universe is shaken forever.

Features

- Four unique sides with different build hierarchies
- Hardware support for improved graphics and special effects
- Rich, in-depth story and character development
- Physical changes in veteran units
- Lay siege to castles and cities
- Non-player humans, wandering monsters and life forms
- Pre-built multiplayer bases and/or units
- Multiplayer missions & varied victory conditions
- Switchable radar/main map view
- Custom keyboard mapping
- Multiplayer capabilities over LAN, TCP/IP, modem and Internet.

Wind

Time has forgotten us and we have forgotten time. Our city is the forest. Our road is the wind. Those who visit our shores uninvited will perish.
Fire: We seek the unknown. We find knowledge and power hidden from ordinary minds. Through skill and study, we will attain the impossible and the world will tremble.

Four powerful siblings.
A vanished monarch.
One massive realm.
The epic quest to control it all begins this March.

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KINGDOMS

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Water: We travel the waves. We have seen sights our siblings can only imagine. Faraway lands share their secrets with us. We explore. We discover. We build our wealth and power.
It's been a rough year for classics/puzzle fans, who could very well find a lump of coal in their stocking, because of the vast amount of shovelware out there. Oddly enough, it's not a whole new product but rather a sequel that will shine most brightly when unwrapped this Christmas morning. Creatures 2 is not merely an improvement in almost every way from the original, it's perhaps the best pure AI simulation ever made.

Like any parent, you'll drive yourself nuts trying to figure out which of your Norn's 15 digestive fluids is out of sorts when he or she is sick.

That it's a really fun game as well is all the more amazing. The Norns you raise from birth are more charming, more loquacious, more clever—their capacity for learning is supposedly improved by 85 percent—and much more addictive than in the original. You'll find yourself chuckling for hours over the more than 100 different Nornian facial expressions, and, like any parent, you'll drive yourself nuts trying to figure out which of your Norn's 15 digestive fluids is out of sorts when he or she is sick.

The world in which your Norns romp and play here is more than twice the size of the gameworld in Creatures, with extensive ecosystem modeling. Still, you'll find it far easier to navigate in the sequel, because of its new, improved interface.

As puzzle games go, Creatures 2 requires a fairly powerful machine: You won't need to invest in a Voodoo card, but that old 486 that runs you don't know Jack just fine isn't going to cut it here.

The game isn't perfect, and some of the information available borders on overkill. Then again, one of the best things about Creatures 2 is that the game can be enjoyed on a number of levels.
2. STRATEGO

Windows 95/98 CD-ROM, $39.95
Hasbro Interactive, (508) 921-3700
www.hasbro.com

BACK IN THE 1960s,
Stratego was a very popular family game—remember that agent Mulder’s sister, Samantha, was abducted (or not) while the two children were playing this very boardgame—in large part because it took a lot less time than Monopoly or Risk. Since then, parlor games on the PC have scored a few hits and a lot of misses.

One reason we like STRATEGO is that it doesn’t try to fake being either a real-time strategy game, as BATTLESHIP did, or a bizarre simulation of rolling dice from a simulated cup, as the horrific YAHTZEE did. It simply re-creates the parlor classic with a few cool options that you’d have tried on the boardgame if only you could have molded those darn plastic pieces yourself.

For instance, STRATEGO lets you and a buddy team up to take on the computer or two of your office mates over the LAN or Internet. And with a turn-based game, there’s not a lot of lag to go around. As with RISK, there are a lot of different maps and cool soldiers from which to choose (one of them is a dead ringer for our managing editor when we’re late with an article, complete with epaulets). Everything else is as you’d expect, complete with spies to take out the enemy’s marshal, scouts to find out real values of hidden units, and miners to defuse those annoying bombs.

Meteor Mayhem is a good example of Smart Games’ unique style; it’s the first asteroid game that relies on brainpower rather than reflexes. Rock, Paper, Scissors derives a clever logical conundrum from the old schoolyard game. And even a wargamer might touch his inner shepherd by guiding a flock across a hexagonal grid in Sheep Dog.

As if the fresh gameplay weren’t enough, Smart Games (now part of Hasbro) has finally pushed the graphics and animation up several notches, so you don’t have to feel guilty when you’re playing it on the plane. And you can leave the lame airline crossword to the guy drinking all the little bottles of cheap booze.

3. SMART GAMES

CHALLENGE #3

Windows 95/98 CD-ROM, $39.95
Smart Games/Hasbro, (508) 921-3700
www.hasbro.com

EVEN THOUGH MOST OF us have trouble resisting the New York Times Crossword or even the poor imitations found in most local newspapers, literal translations of these to the PC have managed to redefine tedium.

Enter Smart Games, a small New England company that found new ways of producing brain teasers that worked better on a computer.

Although the Smart Games folks have occasionally strayed into small puzzle niches, they’ve generally stayed with a winning mix of different teasers. As a result, SMART GAMES CHALLENGE #3 features 20 all-new puzzle types, including word problems, some action-oriented puzzles for TETRIS lovers, a few traditional puzzles, and our favorites—puzzles that you must solve through sound cues and nonlinear thinking.
4. Gubble II

Windows 95 CD-ROM, $39.95
Actual Entertainment, (888) 228-8251
www.actualentertainment.com

**WE’LL ADMIT IT; WE**
weren’t that thrilled with the first Gubble. This time, however,
Gubble D. Gleep seems more cute
than annoying, and has legs. Instead of being trapped
in his space pod, Gubble can
now run, jump, duck, and fly,
which allows for
some variety
when you
explore the
more than 100 new
levels (including a few
hidden bonus lev-
els). Gameplay is
pretty similar to the
first
game—you help Gubble
fit screws into
screwdrivers and
fit drills into rivets—but the puzzles are more intricate. Plus, being
able to transform into a ball or use
decoy Gubbles tends to elicit a
chuckle or two.

5. DON’T TOUCH

**THAT DIAL**

Windows 95/98 CD-ROM, $39.95
Berkeley Systems/Sierra, (800) 757-7707
www.sierra.com

**NO, THIS ISN’T**
**YOU DON’T KNOW**
**JACK 3.5; IT’S MORE**
**LIKE JACK IV 2 ON**
**SPEED. IF YOU CAN**
**REMEMBER THE**
**WORDS TO “Plop,**
**Plop, Fizz, Fizz”
**OR THAT SOME AD EXEC**
**IN THE 1970S THOUGHT**
**YOU COULD CONVINCE**
**PEOPLE THAT RELIEF IS**
**SPILLED R-O-L-A-D-O-S, YOU’LL**
**DO WELL AT THIS GAME. WE**
**LAUGHED AT A FEW OF THE**

**Puzzles &**

**Other Classics**

**Plop, plop, fizz, fizz, oooh ____________**

1. what a relief it is!
2. have it your way!
3. Fizzles are where it is!
4. I always use
Depends!

Questions in the demo, but be warned: This is the first product in this style that Berkeley is publishing without Jellyvision’s design talents. While some will laugh uncontrollably, others may find this to be the biggest one-joke affair since Magic Johnson’s talk show.

For the holidays, try some boardgames from the appropriately named Cheapass Games. This company specializes in off-the-wall topics such as *Kill Doctor Lucky* (all of the fun missing from *Clue*), *Parts Unknown* (selling body parts to Dr. Frankenstein and his competitors), and *Lord of the Fries* (you’re a zombie grill cook in Hell). The games often require you to use plastic pieces or dice from your *Monopoly* set, but these games are such a riot that it’s well worth the trouble. $5–$6 per game;
Cheapass Games, (206) 324-6728; www.cheapass.com

Before you ask whether we need another chess game for the PC, keep in mind that *Chessmaster 6000* should again offer the best mix of grandmaster-styled computer opponents anywhere, with improved graphics and multi-
play mode. Other sequels find Berkeley and Jellyvision teaming again for *You Don’t Know Jack 4*, and Psygnosis trying to recapture the essence of the original with *Sentinel Returns* (complete with music from John Carpenter). Disney’s *The D-Show* offers family fun for the JAC
k crowd, while Hasbro counters with *The Game of Life* (which looks better than we expected). Hasbro also tries to improve on earlier disasters with new versions of *Jeopardy, Wheel of Fortune*, and *Trivial Pursuit* expected for Christmas. And what shopping list would be complete this year without *Monopoly World Cup ’98*?
Take all the screams and chills of your favorite games.

and multiply by two.

Step up to a whole new level of gaming intensity. With a Pentium® II processor powering your computer, suddenly you'll see your favorite games scream to life like never before. The Intel® Pentium II processor helps bring huge sound, fast action and 3D realism to today's most cutting-edge games. New titles like Half-Life® from Sierra Studios are specifically designed to take advantage of the incredible performance of the Pentium II processor. To find out about more amazing new titles created for the Pentium II processor, check out the Intel software showcase at: www.SoftwareForPCs.com

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showcase
The Computer Inside®
vengeance will be yours.

A bold new odyssey of combat and exploration
Vengeance is a discipline. To taste payback you must master 3 radically different styles of combat. The skull-splitting subtleties of hand-to-hand combat; the long-range guile of spell-casting and the knife-edge nuances of trickery. Over 30 weapons. The Phantom Edge. The Living Flame. And the Vampire Staff. And 32 simultaneous multiplayer action. Time to take off the kid gloves and put on the spiked ones.

Vengeance is an odyssey. In a dazzling 3D world that dwarfs everything except the bitterness in your heart, you are bound to undertake an epic voyage of discovery. Vast keeps. Cold crypts. More than 30 enemies. Incredible colored lighting. Insane particle FX. Pure immersion.

Vengeance is a revelation. Blood will have blood, but only the living will uncover their own black secrets. 3 burning souls. 3 unique paths. 3 games in one. 3 golden chances to make the bastards pay.

www.dark-vengeance.com
Available at your local retail store
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The most anticipated RPG of the year.

In the FORGOTTEN REALMS®, we’ve lived through foul pestilence, vicious battles, exorbitant taxes, and even the occasional dragon. But when HE showed up, things really started getting ugly.

Prepare to be immersed into a world of intrigue and mystery on a perilous quest to rescue a storied land from impending war. Even your own soul is at stake as you and a party of adventurers become entangled in a dangerous riddle of betrayed alliances, dark prophecies and murder.

Will you become the unlikely hero of the story, or merely another of its unfortunate casualties? Before you answer, the big guy here might have something to say about it.

Explore an immense, intricate game world - from cloud-covered mountains & rain drenched plains to dark catacombs & abandoned temples - all meticulously rendered in lush, 16-bit SVGA graphics.

Invoke more than 100 spells - Freeze enemies with an icy blast from a Cone of Cold, or incinerate them with a searing stream of magical flame.

Push your leadership skills to the limit as you guide a party of up to six characters, each with a personality that affects gameplay. Don't let your stubborn fighter pummel the arrogant thief - you may need their teamwork in your next battle.

Create your character from six AD&D® races and 26 different classes and subclasses. You control every attribute, down to skin and hair color, weapons, and armor - all accurately depicted on-screen.

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Simulations

1. WORLD

WAR II FIGHTERS

Windows 95/98 CD-ROM, $59.95
Jane's Combat Simulations
(415) 571-7771
www.janes.ea.com

IT'S A VERY, VERY HAPPY holiday for the World War II flight-sim fan. After a number of years of just getting switches and coal in their stockings, wanna-be WWII pilots this year have a number of entries to put on their list. For the pilot who's also going to find a hot new Pentium II PC under the tree, the top choice is WWII FIGHTERS from Jane's Combat Simulations. One of the best looking flight sims yet developed, WWII FIGHTERS is the perfect showcase for hot new hardware.

While the game has dazzling 3D graphics and supports all the major 3D card standards, it's not all flash and dazzle. Set during the Battle of the Ardennes, WWII FIGHTERS lets you fly seven authentically modeled American, German, and British aircraft. Flight models are tunable from beginner to expert, and the game features stunningly authentic virtual cockpits for each plane. The varied supporting cast of aircraft includes the Heinkel He-111, the B-17 Flying Fortress, the B-26 Marauder (rarely seen in sims), and the B-24 Liberator. A variety of stand-alone and campaign missions are available, and a mission editor lets you create your own sorties or download new missions from the Internet.

In addition, you'll be able to test your mettle against other simulation pilots over a LAN or the Internet. WWII FIGHTERS will be supported on the free Jane's Combat.net service, so you should always be able to find a foe.

Multiplayer mode isn't just limited to simple deathmatches, either. You'll be able to fly with and against other human players in full-blown missions. For instance, the mission for one group of human players may be to escort a group of B-17s while another group has to take down the bombers. Watch your six, we'll be in those skies.

One of the best-looking flight sims yet developed, WWII FIGHTERS is the perfect showcase for your computer's hot new hardware.
First, we brought you revolutionary, award-winning, 360° 3D action.

Then, we plunged you into the depths to fight robots that stole your weapons, sucked your energy and worked in teams.

What more could you possibly want?
CUNNING AGILE ROBOTS

From bold and brutal to cautious and shy, these virally infected robots use their brains as well as their bullets. Robots attack and defend in teams, summon backup help, retreat, hide and sometimes just sweep the floor.

FUSION ENGINE
Descent 3's all new Fusion Engine blasts you seamlessly from inside to outside. Melding a flight-sim engine with a room-based, structural engine allows the action to race on at full speed, with no interruptions, indoors...and out.

INTRODUCING DUAL-ENGINE GAME

DESCENT
Turn Your World Upside Down

Parallax Software
Developed by Outrage Software
SoftwareForPCs.com
MERCILESS WEAPONS
From the Flame Thrower to the Black Shark, show no mercy as you crush enemies, set them on fire and watch them suffer.

BEST MULTIPLAYER OUT OF THE BOX
Descent 3 arrives fully optimized for Internet play over a modem. Remember the intuitive simplicity of Descent 1 and 2 network play? Now it's THAT EASY to battle hordes of Descent fanatics around the world.

TRUE RADIOSITY AND SPECULAR LIGHTING
Now you can lurk in the shadows and sneak up on your enemies. Specular and reflective surfaces allow for incredible special effects that portray Descent 3 in an all new light.

POLYGON ACCURATE COLLISION DETECTION
All objects have mass, velocity, moments of inertia, and other real-world properties. Blow off a robot's arm and watch it bounce off a wall and fall to the floor. Launch a missile and see your enemies rocked back from the blast impact.

Bringing the Title Back to the Front Page
Go to #087 @ www.computergaming.com/infolink

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THE HOLIDAY HOT 100

2. FALCON 4.0
Windows 95/98 CD-ROM, $50
MicroProse, (510) 864-4550
www.microprose.com

EVERY YEAR LITTLE
Johnny asks for FALCON 4.0 for Christmas, and every year Santa has to explain that the elves aren’t through building it yet. Will this finally be the year that the long-awaited F-16 simulation finally appears under the tree? It appears so, since the program has finally entered beta-testing, the last stage before it ships.

Still, given FALCON’s history, we’ll get little Johnny that Radioactive Man action figure, just in case.

If FALCON 4.0 does make it out in time, little Johnny will be booting up the most ambitious combat flight simulation ever designed. Created with the assistance of F-16 pilot Pete Bonnani, FALCON 4.0 promises to sport an unprecedented level of detail in its cockpit and weapons-systems modeling. There will be a simplified mode for beginners and more casual players, of course, but hardcore pilots will be able to use targeting and weapons systems that are among the most accurately modeled in a sim.

It’s FALCON 4.0’s ambitious campaign mode that’s probably most responsible for the simulation’s long delay. Not only is this future Korean scenario fully dynamic—the computer generates missions on the fly based on an ongoing air and ground war—but it can also be played multiplayer. Other gamers can join the action during deathmatches and single missions, and they can also enter a campaign in progress by connecting on a LAN or via the Internet. Top this off with a graphics engine that has seen significant enhancements since the demo was released earlier this year and you have the makings of the new king of the hill for hard-core combat simulations.

3. FIGHTER SQUADRON:
SCREAMIN’ DEMONS
OVER EUROPE
Windows 95/98 and Macintosh CD-ROM, $50
Activision, (310) 255-2000
www.activision.com

IN THE COMPETITIVE arena of World War II sims, Activision’s FIGHTER SQUADRON:

SCREAMIN’ DEMONS OVER EUROPE stands out for its amazing physics model. The closest thing to a fighter I’ve flown is a T-34 trainer, so I can’t say that the flight models are 100 percent accurate. But I can say that the feel is the closest to the real thing I’ve found. The challenge of trying to land in a crosswind, the slight pitch change when dropping flaps, the jerk of the plane as you cross the slipstream behind another fighter—all of these feel just like the real thing.

Created by Eric Parker of Paskoff, who was responsible for the impressive A-10 CUBA, this sim exhibits an even more impressive damage model than that title. Slide in behind a B-17, start shooting, and watch an elevator rip off and start spinning toward you. Jink to avoid it (it will damage you if you collide with it) and start shooting at the wing. First an engine starts smoking, then your tracers make contact with the fuel tank and it explodes, ripping off the wing and sending dozens of parts plummeting toward the ground. Come in too hard on landing after your victory and you can actually bend your landing gear. Half the fun in this game is just watching the myriad ways that planes can be damaged.

Of course, there’s plenty of combat here. You can pilot a variety of planes, including B-17s, Lancasters, Fw-190s, P-38s, and Typhoons. In addition to the built-in missions—which you can fly from the viewpoint of any participating plane—FIGHTER SQUADRON includes a full-fledged editor that will let you create your own missions.
The Newest 3D Game is about to step out of the shadows.

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LEFT FOR DEAD

The Next Dimension in 3D Realtime Tactical Combat.

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Your TEAM is dug in 5 miles west of the extraction point. The enemy is slowly surrounding you. You're down to your last few rounds - cold, dog-tired, wounded. The only easy day was yesterday.

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- A complete arsenal of weapons to choose from
- Engage the enemy over unprecedented distances
- Play in either 1st or 3rd person across miles & miles of outdoor environments
- Over 40 gut-wrenching missions
- Premiering Voxel Space® 3 graphics terrain with 32-bit color
- Missions developed with the assistance of a former U.S. Army Delta Force Officer
look forward to intense canyon dogfights. Many members of the sim’s development team are active IAF pilots, and the missions and aircraft performance reflect both historical and potential Israeli conflicts. Particularly interesting is the ability to jump from plane to plane to perform each element of a strike. You may start in an F-4 and be tasked with taking out air defenses, then switch to an F-15 to eliminate enemy fighters, and you might finally take the stick of an F-16 to destroy a nuclear plant.

6. EUROPEAN AIR WAR
Windows 95/98 CD-ROM, $79.95
MicroProse, (510) 864-4550
www.microprose.com

IN THE WORKS FOR
nearly as long as FALCON 4.0, MicroProse’s EUROPEAN AIR WAR isn’t the most technically

4. F-16 MULTIROLE
FIGHTER/MIG-29 FULCRUM
Windows 95/98 CD-ROM, $44.95
NovaLogic, (800) 858-1322
www.novalogic.com

WHILE F-16 MULTIROLE
FIGHTER and MIG-29 FULCRUM are both all-new, full-fledged, stand-alone sims, NovaLogic plans to ship them bundled together for a limited time. The games exhibit a new level of realism for NovaLogic—due to the fact that the company had the assistance of Lockheed-Martin and a former Soviet test pilot—but they also contain simplified radar and targeting systems that make them accessible to beginners and casual gamers.

Both sims feature stunning 3D graphics, active virtual cockpits, and full-blown mission editors. Since two of the five campaigns are shared between the games, you can fly them from the perspective of both American and Russian pilots. But the biggest appeal here is free multiplayer action with more than 100 other human pilots flying F-16s, MIG-29s, and F-22s on NovaLogic’s NovaWorld server.

5. ISRAELI AIR FORCE
Windows 95/98 CD-ROM, $59.95
Jane’s Combat Simulations, (415) 571-7171
www.janes.ea.com

THE SPIRITUAL SUCCESSOR
to the series that started with U.S. NAVY FIGHTERS and wrapped with FIGHTERS ANTHOLOGY, Jane’s ISRAELI AIR FORCE closely resembles that series in its basic structure. Once you’re in the sim, though, things look and feel quite different. The sim sports 3D support and a voxel terrain system that offers unprecedented elevation detail—advanced WWII sim in the pipeline. But what it may lack in pure flash it promises to make up for in gameplay. This is the only WWII sim slated for release this year that has a dynamic campaign—two, in fact. You can fly for England or Germany in the Battle of Britain; then you can take to the skies as an American pilot in the battle over Europe.

The missions in EAW can accommodate up to 256 planes in the air simultaneously, so look for intense furballs. The game also sports instant-action and multiplayer cooperative play.
SPEED KILLS.

ATI RAGE FURY. So fast, you won’t know what hit you.

ATI RAGE FURY

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7. FLY!
Windows 95/98 and Macintosh CD-ROM, $49.95
Terminal Reality Inc./Gathering of Developers, (972) 221-2664
www.terminalreality.com

SO FAR, NOBODY'S BEEN able to unseat Microsoft's FLIGHT SIMULATOR 98 from its throne as king of civilian flight sims. But if technical merit really affects a game's popularity in the market, TRI's FLY! should do just that. This sim sports flight models created with the assistance of Cessna, instrument panels with unprecedented detail, and full air-traffic control. The satellite-mapped terrain features accurate elevation, five major cities modeled in detail, and all major airports throughout the world. TRI is encouraging outside development, so look for a variety of add-on aircraft and cities to appear. If you're interested in learning to fly, check this one out.

8. F22 TOTAL AIR WAR
Windows 95/98 CD-ROM, $49.95
DID/Infogrames, (408) 289-1200
www.did.com

WHILE F22 AIR DOMINANCE FIGHTER was arguably the best overall sim of the crop of F-22 simulations, many fans of DID's EF2000 simulation were disappointed to find that ADF didn't include a dynamic campaign engine, like the earlier sim. F22 TOTAL AIR WAR, originally planned as a dynamic campaign add-on, morphed into a full-blown new version of the game. In addition to numerous graphic improvements such as volumetric clouds, the game features a full-blown dynamic campaign designed with the input of USAF veterans who actually planned strikes during the Gulf War. A $15 rebate coupon will be included for owners of F22 ADF.

9. APACHE-HAVOC
Windows 95/98 CD-ROM, $49.95
Empire Interactive, (800) 216-9706
www.empire-us.com

DEVELOPED BY RAZORBACK, APACHE-HAVOC lets players experience helicopter combat from both Western and Russian points of view. Designed from the ground up for multiplayer games, it lets you take the stick of the AH-64D Apache Longbow or the MIl Mi-28N Havoc in both cooperative and antagonistic missions. While the game is accessible to casual players—systems modeling isn't quite as detailed as that of LONGBOW 2—hardcore gamers will appreciate the fact that the dynamic campaigns can be played in multiplayer mode. The impressive graphics engine includes river valleys, forest lines, and numerous other spots that can be used for cover, allowing you to use authentic helicopter tactics.
Introducing your new flight simulator.

www.sierrasports.com
It takes off. You feel it. And you control everything from a street-style console to full-on simulation. It's a Viper Racing from Street Sports. Win your way through four realistic, challenging 700 hp GT3-R GTS Test your skills against your own best laps with the ghost car feature. Packed with the excitement of backseat driving with super-realistic damage modeling. And “drive anywhere” technology means the racing doesn't end with the pavement. This Viper is unlike anything you've ever driven. Or known.
THE HOLIDAY HOT 100

10. COMBAT FLIGHT SIMULATOR
Windows 95/98 CD-ROM, $54.95
Microsoft, (800) 426-9400
www.microsoft.com

MICROSOFT FINALLY LISTENED to user requests and put the guns back in FLIGHT SIMULATOR. Considering that it's built on the FLIGHT SIM engine, COMBAT FLIGHT SIMULATOR is an impressive effort with fast frame-rates on 3D card-equipped systems and missions based closely on historical scenarios. Flight modeling, as you'd expect, is top-notch—controls feel far less twitchy than they do in the civilian sim. An impressive help system and a 250-page manual should make this sim accessible to beginners. The real potential here, though, comes from the huge third-party FLIGHT SIM support network. Since gamers can add new planes, new scenery, and new missions, this sim could re-create virtually any WWII era battle.

From the looks of things, Santa's reindeer are going to have to be extra careful this holiday season because the fantasy skies are going to be crowded with combat aircraft from just about every era. All these titles are worth a look if you're shopping for a virtual pilot.

SSI'S LUFTWAFFE COMMANDER takes a unique view of WWII air combat, letting you fly as a German pilot anytime from the Spanish Civil War through the fall of Germany. Great attention to detail has been paid to the flight modeling in this historical sim—the Iron Cross mode promises to be one of the most authentic WWII flight models yet. The sim would easily be in our Top 10, except there's a question about whether it will ship by Christmas. The same goes for SSI'S SU-27 FLANKER 2.0, which takes all the elements that made the original a favorite of hard-core sim pilots and adds spectacular 3D graphics and a less-intimidating flight mode for more casual pilots. It's a top choice, but it looks like it may miss the holiday ship.

Developed by General Simulations, F-16 AGGRESSOR is the sim to check out if you're looking for a sim with an Iron Eagle-style action storyline. You're a mercenary F-16 pilot in this sim, which sports an impressive 3D engine and realistic flight modeling wrapped around its STRIKE COMMANDER-ish storyline.

A good choice for Tom Cruise wanna-bees is MicroProse's TOP GUN: HORNET'S NEST, which looks much more impressive than the version we saw back at this year's E3. While it's clearly targeted at the action gamer and the inexperienced flight-sim pilot, the game now also features a mode with a reality-based flight model.

While RED BARON II was disappointingly buggy, don't overlook RED BARON 3D. This updated version sports very realistic flight modeling, massive multiplayer support, and sharp 3D graphics. Best of all, purchasers of the original RED BARON II can get the new version free from Sierra.

If you missed Jane's F-15, it's a sure pick for your Christmas list. The current king of hard-core flight simulations, it outclasses all other jet sims in its level of systems and flight model detail. Also check out LONGBOW COLLECTION, which features a 3Dx-enhanced version of LONGBOW GOLD as well as LONGBOW 2, all in a single package. Helicopter fans will want to check out Mindscape's TEAM APACHE for its impressive special effects and the intriguing crew-management gameplay elements. Multiplayer fans would enjoy a copy of the boxed version of WARBIRDS under the tree. The $30 program doesn't include much in the way of offline play, but it does include $30 worth of free play in the massively multiplayer WARBIRDS arena.

Finally, check out Mission Studios' JETFIGHTER: FULL BURN for an intriguing blend of action-flight sim and WING COMMANDER-style storyline. It's not the most techni- cally advanced sim out there, but it packs a hefty fun factor.
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REVENGE
DEATH
BEFORE
DISHONOR.
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So sharpen your Bat’leth and prepare to defend your honor in the heart of the Klingon empire — presented in awesome Unreal™ 3-D action. Shred vicious Nausicans, Andorians and even other Klingons. Overpower intelligent enemies who adapt to your assaults, including fiendish TarChops and Ro’peDs. Take on Deathmatch and multiplayer challenges created by the Internet’s top level designers.

It’s the ultimate test for the ultimate warrior.

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“IT’S A GOOD DAY TO DIE”
Space Sims

1. INDEPENDENCE WAR

Windows 95/98 CD-ROM, $49.95
Ocean/Infogrames, (408) 289-1411
www.independencewar.com

SPACE SIMS HAVE
tended to be formulaic over the
past few years. They have emph-
ized fast-paced, WWII-style com-
bat à la the space scenes in the
Star Wars movies. Although the
pickings are still a bit slim (the
space sim seems to be a niche
genre), this year the field shows
considerably more life and variety
than in recent years. For any
gamer who remotely enjoys the
concept of space flight and com-
bat, the top choice will be
INDEPENDENCE WAR, brought to
you by Ocean and developed by
Particle Systems in England.

INDEPENDENCE WAR is best
known for its Newtonian flight
model. Yes, there have been other
games that employed such a
physics model, but they are either
too old (such as WARHEAD or the
Elite series) or simply not very
playable (think MANTIS or the
MICROSOFT SPACE SIMULATOR).

INDEPENDENCE WAR features a rock-solid physics model, allowing you
to feel the inertia of the 150-meter-long corvette you command or
the time-dilation effects when you fly at near-light speed.

INDEPENDENCE WAR features a
rock-solid physics model, allowing
you to feel the inertia of the 150-
meter-long corvette you command
or the time-dilation effects when
you fly at near-light speed.

On top of that solid foundation,
INDEPENDENCE WAR builds great
mission design. Instead of run-of-
the-mill "fly around and kill lots of
fighters" missions, INDEPENDENCE
WAR has you laying traps for
nefarious pirates, finding and
repairing malfunctioned satellites,
and catching antimatter bombs,
among other things.

In addition, INDEPENDENCE WAR
utilizes 3Dfx cards to their fullest,
yielding improved ship exteriors,
nebulae, missile smoke trails, and
shellding effects.

While it may not have multi-
player action, everything else
about INDEPENDENCE WAR is first-
class. The 3D-accelerated graphics,
the mission design, and the
physics engine combine to make
INDEPENDENCE WAR a unique
space sim after years of clones. No
other game has managed to cap-
ture the feel of space combat in
addition to the feel of command-
ing a large starship. It's for these
reasons that INDEPENDENCE WAR
is the best pick for space-sim fans
this Christmas.
Wow! Audio for your computer that enables your ears to track sounds the way your eyes are tracking those words. Which means now it suddenly


Bang, you'll know just where to look. That's because not by dividing it between speakers—by creating real sounds that work the way your ears do. It comes in handy when you need to

Check out Sin™, the cutting edge new game from Activision & Ritual - It's got A3D.

WIN a Diamond Monster Sound MX300 featuring A3D 2.0 & Vortex 2!

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Desperately searching for nourishment. Willing to stop at nothing to get it. Two species. Determined to survive. Two worlds. Destined to collide.

Get ready for the most intense real-time battle in the universe. Blast your way through 5 colonial bases and 50 brain-crunching scenarios—all in isometric, retina-frying 3D.

Choose from 5 different types of characters, each with its own special function, and a random arsenal of weapons. Go it alone or team up with your friends over the internet.

If you made it through Starcraft™, it's time to meet the real enemy.

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Pre-order at your local retailer today:
www.npcordgames.com
2. HEAVY GEAR II

Windows 95/98 CD-ROM, STBA
Activision, (310) 255-2000
www.activision.com

AFTER LOSING ITS
BattleTech license, Activision acquired the Heavy Gear license from Dream Pod 9, only to premiere with the lackluster HEAVY GEAR. On the heels of that experience, Activision scrapped its aging MECHWARRIOR 2 engine and created a whole new 3D-only engine, enabling it to redesign HEAVY GEAR II from the ground up.

HEAVY GEAR II uses Activision's new Dark Side engine, which allows for much better graphics at faster frame-rates compared to the previous engine. The terrain is true 3D rather than polygons slapped on top of each other, but you'll need a 3D accelerator card as a consequence. You're placed in a Special Ops unit behind enemy lines, so your missions will vary to include stealthily tailing enemy convoys and conducting guerrilla-style assaults in cities.

The gameplay for HEAVY GEAR II will be quite different from what giant robot sim fans are used to. Because the Heavy Gear universe models foot soldiers instead of vehicles, the game takes on more of a QUAKE-style action feel. Don't be fooled by that assessment though, because even though it feels like a first-person shooter at times, the use of squad tactics will make it more complex.

As the squad leader, you'll be able to use a tactical map and command your Gears to pull off various maneuvers and tactics.

The game features 40 single-player and 40 multiplayer missions, and multiplayer action will range from pure deathmatch to squad-versus-squad level battles.

HEAVY GEAR II looks as if it will be a great follow-up to Activision's MECHWARRIOR legacy.

3. STARSIJE

Windows 95/98 CD-ROM, $49.95
Sierra/Dynamix, (800) 757-7707
www.sierra.com

ANYONE WHO HAS SPENT
any time with EARTHSIEGE and EARTHSIEGE 2 might be tempted to skip right past this, the third in the EarthSiege series. That may not be such a good idea, however. Dynamix has big plans for this franchise, and it seems to be backing up its words with actions.

The new engine looks several orders of magnitude better than the company's previous efforts, with the Cybird designs benefiting the most. The interface screens look promising, the vehicle list is quite varied, and the game as a whole looks to be a big improvement over its predecessors.

As this guide went to press, STARSIJE was in an alpha-technology release phase, so we haven't yet seen any single-player missions, enemy AI, or campaign layouts. However, the game's producer emphasized that his group is committed to doing this game right and noted that Dynamix and its parent company, Sierra, have assured him that there will be no pressure to release STARSIJE before it's ready. That is probably more encouraging than anything else we've heard, so be sure to keep this title on your radar. If the design team manages to pull off what they have planned, we may have a new contender for this genre's throne. We'll keep you apprised of STARSIJE'S development in upcoming issues.
With an expansion pack soon to be available, this is a solid space sim to invest in.

The time you read this, the GOLD EDITION, which includes both the original release and SECRET OPS (the stand-alone expansion pack that was released on the Internet), will be available in stores. This complete package is a good pick for WING COMMANDER fans.

THE AGE-OLD SPACE-SIM series makes this list again. This title was No. 1 on last year’s list, and it’s still a great WING COMMANDER game. It features gameplay reminiscent of earlier WING COMMANDER games, has less annoying FMV, and sports some of the most beautiful graphics ever seen in a space sim. By

5. WING COMMANDER: PROPHECY
GOLD EDITION

Windows 95/98 CD-ROM, $39.95
Origin, 800-245-4525
www-origin.ea.com

THE STAR WARS SIMS and the Wing Commander games have dominated the space-sim genre for the past couple of years, but that could change with DESCENT: FREESPACE, the initial entry into the genre by Volition. Published by Interplay, this sim is still a clone, but it’s the best clone of the bunch. It effectively combines aspects of both the Star Wars and the Wing Commander games to make for an extremely playable game. FREESPACE’s main highlights are the excellent wingmen AI, the customizable controls and HUD, and the free campaign editor to extend its shelf life after you finish the main campaign.

Stocking Stuffer

Most space simmers are sci-fi fans, and most sci-fi fans are sci-fi video fans. So our picks for stocking stuffers include either the DVD version of 2001: A Space Odyssey or the 13-episode Neon Genesis Evangelion series (perhaps the best sci-fi anime out now, typically $25 per tape for the subtitled version). Finally, HEAVY GEAR fans might like any of the items from the Heavy Gear role-playing game, such as the miniatures or the sourcebooks (at game stores or http://www.dp9.com/Products/ index.htm).

OTHER SPACE VOYAGES

Another space-combat sim worthy of note is the newly released ARES RISING, created by members of the original PRIVATEER team. Those gamers who never experienced the original Star Wars sims can pick up the X-WING COLLECTORS SERIES, which has 3D-accelerated versions of both X-WING and TIE FIGHTER. If you followed Derek Smart’s saga at all but never got the original, you might want to check out the rereleased (and complete) BATTLECRUISER 3000AD put out by Interplay. Finally, if you’re a Star Trek fan, you should check out KLINON ACADEMY, which is the Klingon version of the previously released STARFLEET ACADEMY.
Play FIFA 98 on a high-res monitor with a 3Dfx card, and you'll almost be convinced you're watching a soccer game on television.
2. MADDEN NFL 99

Windows 95 CD-ROM, $49.95
EA Sports, (650) 571-7171
www.easports.com

MADDEN USED TO BE
the crown jewel in the EA Sports empire, but a couple of mediocre seasons have put the franchise almost into the underdog role. We say almost because, lucky for EA, there hasn't been much decent competition on the PC anyway. But that hasn't stopped EA from wanting to improve the game. The company is now readying the best edition of MADDEN in years (it will

be out as you read this), one that we hope to be able to love without dozens of caveats. First, EA Sports (through developer Tiburon Software—responsible for last year's superior PlayStation version) has finally, belatedly, replaced the game's 2D sprites with a full 3D polygonal engine. This, along with player-specific motion captures and a variety of body types, gives the game a much more real and dynamic look than ever before. After two long, kludgy seasons, football action jockeys can finally expect the kind of slick arcade action available in EA's other big franchises. For newbies, EA has added a "one-button" mode, designed to let players run plays with just one gamepad or keyboard button, rather than having to memorize a whole gamepad worth of key combinations. A new franchise mode lets you create fantasy teams and run them over multiple seasons, while team-specific playbooks and a new play editor aim to add the kind of depth and realism long missing from the franchise (we used to win games with one play, repeated endlessly). With its reputation on the line, the stakes are high for MADDEN. But just as we saw with that creepy old Elway guy last season, expect a comeback season from everyone's longtime favorite.

3. VR BASEBALL 2000:
NEXT GENERATION
BASEBALL

Windows 95 CD-ROM, $39.95
VR Sports, (949) 553-6855
www.vrsports.com

IN THE REAL WORLD,
1998 provided one of the greatest baseball seasons in decades. On the morning this was written, in fact, the country woke to learn that Mark McGwire had smashed the single-season home run record.

Unfortunately, baseball's remarkable turnaround since the 1994 strike has not been duplicated on the PC. We've seen one mediocre title after another the past few years. We'd pretty much given up on 1998, but a 13th-hour appearance of a most unexpected title, VR BASEBALL 2000, has given us new hope. Interplay's first version of its baseball title last year was overwhelming at best, so we had no expectations this year. But once we got our hands on VR BASEBALL 2000, we were shocked—and then sold. First of all, the graphics have been completely overhauled using Shiny Entertainment's MESSIAH engine, and the result is by far the finest looking, most realistic looking ballplayers to date, bar none.

More importantly, of course, is how the game plays. And again, we were impressed beyond all expectations. For one, pitcher/batter duels now actually make some semblance of sense—with AI pitchers and hitters acting and reacting as you might expect, and user controlled players being much easier to control. Fielding, always a huge problem in baseball sims, has been made quite functional here, with a sliding scale of difficulty. Next year's version promises to be even better, with the incorporation of the DIAMOND MIND BASEBALL statistical engine. But for now, VR BASEBALL 2000 will provide the kind of fun baseball action that a host of bigger name titles have failed to deliver this year.
IF REALITY HAD A PATENT
WE'D OWN IT.

More than 9,000 airports and 30,000 navais covering over 200 countries, territories, and islands. Five accurate aircraft models (including single prop, dual prop, turboprop, and business jet) based on specifications and performance data from actual aircraft manufacturers. Accurate aircraft cockpits and avionics, all in the correct proportions and layout from original aircraft. Terrain system and global digital elevation model allow for realistic flight all over the world. Fly at any time of day or year, in a variety of user-defined weather conditions, or by importing NOAA METAR weather reports. Realistic voice air traffic control (ATC) interacts with you for ground control, tower, approach, departure, and regional center operations.

- Designed for expandability. Look for future aircraft and scenery expansion packs, as well as end-user editing tools. Five scenery areas with continuous satellite imagery, covering 50,000 square miles of area. Integrated flight planner and aircraft load-out, allowing visual planning of cross-country flights and user-defined fuel, passenger, and cargo loads. Native 3D hardware support for Microsoft Direct 3D, 3Dfx Glide, Rendition Redline, NEC PowerVR, and Apple RAVE. Join up to 7 friends in an Internet flight party, with text and full voice chat support.

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“FLY! IS SET TO ADVANCE THE CIVILIAN FLIGHT SIM GENRE BY TWO GENERATIONS.”

—Denny Atkin, Computer Gaming World
THE HOLIDAY HOT 100

4. LINKS LS '99
Windows 95 CD-ROM, $79.95
Access Software Incorporated,
(800) 793-0073
www.accesssoftware.com

THE PRETENDERS COME
and go, but LINKS goes on forever. The
granddaddy of golf sims

returns for its latest round with a
brand-new course, Scotland's
St. Andrews Links Old Course, and
other new features to keep the
game alive for new and veteran
players. Gameplay has been
beefed up to include about 30
modes of play as well as an editor
that enables you to create and
modify your own game rules. A
tournament environment has been
added as well as the ability to
watch others and engage in voice-
chat over the Internet during mul-
tiplayer games. Access has cleaned
up the interface and a mouse
swing in addition to the standard
meter. LINKS LS is a perennial five-
star game from a company that
knows golf inside out. A sure bet
for the desktop duffer in your life.

player animations and 3D models
improving the game's already
stunning, state-of-the-art graphi-
cics. This year, EA is trying harder
to please the hockey diehards
who have long scoffed at the
game's realism. It has improved
puck physics and included a
stronger AI that should make
practice a variety of specific
situations, like breakaways and
power plays. This is PC sports
action at its frenzied finest.

6. NBA LIVE 99
Windows 95 CD-ROM, $49.95
EA Sports, (650) 571-7171
www.easports.com

YET ANOTHER STRONG
title from all-dominant EA Sports,
CGW's 1996 Sports Game of the
Year continues to improve each
season, with virtually no competi-
tion. This year's model continues
that trend, with some new and
interesting features. The game's 3D
engine is more sophisticated this
year, with smoother and more real-
listic animation (including changing
facial expressions). The GM mode
lets you draft a custom fantasy
team and league and play up to 10
seasons. And at last, you'll be able
to download free updated rosters
directly from EA's Web site. Arcade
mode has coin-op style "monster
jam" animations, while practice
mode lets you play on outdoor
courts. See our sneak preview
elsewhere in this issue.

5. NHL 99
Windows 95 CD-ROM, $49.95
EA Sports, (650) 571-7171
www.easports.com

ANOTHER YEAR, ANOTHER
version of EA Sports' monster
NHL franchise. NHL 99 should
prove no less popular than any
previous version, with all new
Ever feel like shooting a million holes through your computer?

Try the hot new computer game Guns & Ammo.®
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Have fun, test your skill, compete with friends, relieve tension, try a hundred different kinds of guns. It's all yours with the new PC compatible game, Guns & Ammo®.

Rifle range, skeet range and pop-up targets along with the military, high tech and collectible guns and authentic sounds, make this a must for shooting enthusiasts. Add to that Wal-Mart's Every Day Low Price, and you’ve got a sure fire winner.
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PLAYSTATION
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SEGA

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Prompt Delivery
$4.00 Shipping*
7. BASEBALL MOGUL 99
Windows 95 CD-ROM, $38.99
Infinite Monkey Systems, (888) 229-2714
www.inmonkey.com

OUR SLEEPER 1997
Sports Game of the Year returns for an encore this fall, with all sorts of new stuff to keep baseball geeks in hog heaven for another year. Eschewing action glitz for hard-core baseball strategy, BASEBALL MOGUL puts you in the role of GM and manager of the team of your choice and gives you the chance to build a dynasty. The new version has updated rosters, including the 1998 expansion teams as well as a city editor and league editor that let you customize your league much more dynamically. Also included is a multiplayer mode—great news for the fantasy league fans for whom this game holds tremendous appeal.

8. NCAA FOOTBALL 99
Windows 95 CD-ROM, $49.95
EA Sports, (650) 571-7171
www.easports.com

WELL, WHADDYA KNOW? Another EA Sports title makes the list. That's what happens when one company dominates a genre. In this case, what we have is the best college football game in years. It's not as pretty as MADDEN, and there are some annoying bugs, but what it offers is an unprecedented level of college football mayhem. All 112 Division 1-A teams are here, along with all the major bowl games and 40 historic games to choose from. Best of all is the Dynasty mode, which lets you play multiple seasons and recruit new players (reminiscent of GTE's late, great NCAA BASKETBALL).

9. FRONT OFFICE FOOTBALL
Windows 95 CD-ROM, $34.95
Solecismic Software, (888) 379-7878
www.solecismic.com

TAKING ITS CUE FROM BASEBALL MOGUL, FRONT OFFICE FOOTBALL, from tiny startup Solecismic Software, takes you off the field and into the general manager's chair—this time in the world of the NFL. Part strategy, part role-playing, and rooted deep in the numbers of football, FRONT OFFICE FOOTBALL challenges you to take a football franchise and guide it on the road to financial success. Build stadiums; cut with ticket prices; hire decent scouting and coaching staffs; and keep your player roster strong through trades, drafts, and contract negotiations. This low-budget affair is no MADDEN, but it's a dream of a simulation for the fanatical sports fan and inner Al Davis in us all.
New Courses!
(Clockwise from top) Entrada at Snow Canyon, St Andrews Links Old Course, Latrobe Country Club, and Arnold Palmer’s Bay Hill Club and Lodge.

Four real world-class golf courses have been stunningly and accurately recreated for desktop play! Along with Pennsylvania’s Latrobe Country Club (now in beautiful fall foliage), Links LS ’99 features the birthplace of golf itself—St Andrews Links Old Course of Bonny, Scotland!
Also Arnold Palmer’s Bay Hill Club & Lodge in Orlando, FL, and the gorgeous red cliffs of Entrada at Snow Canyon in Southern Utah.

Valuable Coupons—For You And A Friend!
It’s easier than you thought to get yourself and a friend into Internet play with Links LS 1999!

$10 Rebate From ACCESS SOFTWARE INCORPORATED
Just send in this coupon with your original receipt for Links LS ’99 along with your name, full address and phone number.

Send to: Access Software Inc.
4750 Wiley Post Way, Bldg. 1 Suite 200
Salt Lake City, Utah 84116


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Just send in this coupon with your original receipt for Links LS ’99 along with your name, full address and phone number.

Send to: Access Software Inc.
4750 Wiley Post Way, Bldg. 1 Suite 200
Salt Lake City, Utah 84116


Internet play is now more exciting than ever with new “Internet Spectators” and Real-Time Voice Chat. Friends (or opponents) can watch you in action from across the internet and contribute real-time advice or criticism.

Two New Swing Options—PowerStroke mouse swing and 3-Click mouse swing options energize game play with new challenges in addition to our original 2-click mouse swing.
New Tournament Environment Immerses you in a tournament atmosphere with galleries of thousands to cheer your every shot! Realistic details include crowds of people with noises, press cameramen, media vehicles, officials, ropes, grandstands, leaderboards, and camera towers!

“Links LS... the greatest PC golf experience possible. Why pick this one? For the avid golfer in the family. Links LS will be an instant and unkillable addiction.” — PC Games

A new Mode Of Play (MOP) Game Designer! Gives you the ability to create your own games and swap them with your friends! Unlimited possibilities as you make up your own games! We've even included over 30 new MOPs to get you started in taking your game enjoyment to a higher level!

Links LS 1999 has over 25 new features. Here are a few:

- St Andrews Links Old Course, Bay Hill Club & Lodge, Latrobe C.C. and Entrada at Snow Canyon
- Now with 3 swing options
- NEW Tournament Mode—play in front of live galleries
- NEW 3D objects for more realistic play
- NEW real-time voice chat over the Internet
- NEW mode of play (MOP) game designer
- NEW specially shots
- NEW caddy book

Links LS 1999 is compatible with over 25 expansion courses (sold separately) from Access Software

Is It Real Or Is It Links LS '99? Compare the difference between the screen capture and the actual photo taken at the Bay Hill Club and Lodge.

www.AccessSoftware.com
10. SPORTING CLAYS
Windows 95/98 CD-ROM, $24.99
WizardWorks, (800) 229-2714
www.wizworks.com

SPORTING CLAYS is the rare standout in the overcrowded hunting genre. Why does it stand out? Because it’s actually fun to play. Unlike the myriad “Stand-in-the-woods-and-shoot-once-in-a-blue-moon” games, in SPORTING CLAYS, you’re in a five-stand tournament, constantly blasting away at a good variety of clay targets. Plus, you don’t actually kill any creatures, which is a plus for all the environmental-goodie-two-shoes out there. Don’t kid yourself, though, this game is difficult at the hardest settings; yet it’s really accessible and fun to play. You can also hoot at your buddies, which is, well, a blast.

Stocking Stuffer

Much as we are normally loath to recommend anything having to do with either a) real life or b) exercise, we’d like to go out on a limb and suggest that CGW’s sports fans do something wacky this holiday season: Buy a football and go outside. Grab some friends, your kid, your spouse—and toss that thing around the park. Believe it or not, you won’t even need a gamepad. Weird, huh?

If the sports freak in your life is already wasting most of his or her life in front of the TV or a computer game, you might as well make it twice as bad with an annual “Insider” subscription to ESPN’s Web site ($39.95). ESPN’s main site is free, but with the subscription you get access to tons of additional columns and articles and, best of all, a $10 discount on ESPN’s excellent fantasy games. For info, call (888) 549-3776.

Other Sports Stuff

There are a ton of other sports titles on the way over the coming months, and believe it or not, they’re not all coming from EA.

One game that almost made this list is NFL GAME DAY ’99, the first PC version of Sony’s long-running PlayStation hit. The game is not great (see our full review elsewhere in this issue), but it’s definitely worth it for those interested in multiplayer action over the Internet—it’s big advantage over MADDEN. More PC action can be had this year from two games: Acclaim’s NFL QUARTERBACK CLUB ’98, a game whose predecessor surprised us with its better-than-average arcade play; and Midway’s NFL BLITZ, the PC version of the coin-op smash, which has absolutely nothing to do with real-life football (and will probably offend those who actually care about the sport) but is one of those annoyingly addictive guilty pleasures.

Sierra has finally retired its long-running FRONT PAGE SPORTS line but is still serious about staying in the sports gaming biz. Its biggest release, which probably would have made our main list if it had been further along, is NFL FOOTBALL PRO ’99, the latest version of the deepest, most serious football simulation in PC gaming history—and the winner of CGW’s Sports Game of the Year award three times in a row earlier this decade. Sierra is completely revamping the title, with a new 3D engine and an even more detailed managerial mode, including a financial model that influences roster maneuvering. We have high hopes for this one. Let’s hope Sierra pulls it off.

Look out for BASKETBALL PRO 99, which Sierra touts as the hoops equivalent of its football title, with an emphasis on both league management and on-court action.

One of the challenges making the most noise at E3 this year was ESPN Digital Games, which has two titles on the way: NBA TONIGHT and NATIONAL HOCKEY TONIGHT. Designed by the sports wonks at Radical Entertainment (NHL POWERPLAY) and gussied up with the kind of glitz that the ESPN license will buy, both games hold a great amount of promise—though we haven’t seen enough to recommend them yet. Look for these games to at least outclass Fox Sports’ unimpressive debut titles this year (which we admit isn’t saying much). As we went to press, however, Radical’s future was in doubt, due to a persistent rumor of a buyout by—gulp—EA Sports.

Speaking of EA Sports, it has another couple of titles under its belt. TIGER WOODS ’99, reviewed elsewhere in this issue, might be a good choice for golfers, while KNOCKOUT KINGS lets you get into the ring and float like a butterfly with some of the greatest (including The Greatest) boxers of all time. Yeah, baby, yeah!
CHRISTMAS CANCELED?

SANTA'S MISSING!
Golden Tee Golf to Blame

Go to #228 @ www.computergaming.com/infolink

Golden Tee Golf
The Perfect Gift Under Your Tree!
Now available at a store near you!

Voted 1998 Most Played Video Game of the Year
Lightning Fast Arcade Style Game Play
Three 18 Hole Courses in a Variety of Multiplayer Options
TrackSwing™ Technology: Natural Mouse Swing

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Escape to a gaming experience like nothing you've ever imagined. With Advent Powered Partners sound systems, you'll feel those relentless Brutes and 15-ton Titans—long before you see them. No doubt Advent's unreal power will save your so-called life. Powered Partners. For intense sound the way it was meant to be heard, and gaming that is absolutely unreal.
Racing

1. F1 RACING SIMULATION

Windows 95 CD-ROM, $29.99
Ubi Soft Entertainment, (415) 547-4000
www.ubisoft.com

FOR AT LEAST THE PAST five years, MicroProse’s GRAND PRIX (WORLD CIRCUIT) was synonymous with Formula One racing on the PC for two excellent reasons: 1) It was the best F1 racing simulation available, and 2) it was the only F1 racing simulation available. Now, Ubi Soft’s F1 RACING SIMULATION (don’t be confused with the straightforward title) may have just claimed the top spot on the podium over the aging GRAND PRIX II.

Bear in mind that we’re talking about computer simulations here, so if you’re new to computer gaming, don’t compare this to an F1 game you might have played on your PlayStation. F1 RACING SIMULATION is as realistic as they come. Yet for all the precision and practice required to drive these cars competitively, F1 RACING SIMULATION was designed with the beginner and novice in mind—there are plenty of driving aids to help you turn a clean lap, all of which you can toggle off as you start to gain confidence.

For the veteran simulation driver, F1 RACING SIMULATION is as accurate and satisfying a racing experience as GRAND PRIX II was, but F1 turns up the graphical standard a few notches with the help of 3D hardware support. The handling of the car model is smooth and consistent. And while the computer opponents can be aggressive, their moves are usually predictable.

F1 RACING SIMULATION fires on all cylinders with well-thought-out design, ingenious programming, and artwork that’s rendered for the speed of racing. In the past, only MicroProse and Papyrus seemed to have a lock on computer racing simulations. Now, Ubi Soft might be frequenting your racing game podium.
ALIENS VERSUS PREDATOR

LOCK AND LOAD THIS SPRING.
THE LAWS OF NATURE
AND SOMEONE IS

"THE MOST ADVANCED TECHNOLOGY WE'VE EVER SEEN IN A PC GAMING TITLE!" - COMPUTER GAMING WORLD

PHENOMENAL PHYSICS-BASED GAME PLAY: IF IT CAN HAPPEN IN REAL LIFE, IT CAN HAPPEN HERE.
HAVE BEEN BROKEN,
GOING TO PAY.

YOU ARE ALONE, WASHED ASHORE ON INGEN’S REMOTE RESEARCH ISLAND,
SITE B, IN THE AFTERMATH OF THE LOST WORLD EXPEDITION. BEFORE
YOU LIES A DENSE, TROPICAL JUNGLE FILLED WITH PREHISTORIC
CARNIVORES THAT ARE VERY MUCH ALIVE. YOUR ONLY CHANCE OF
SURVIVAL IS TO USE YOUR WITS TO BATTLE THE RELENTLESS WILD-
LIFE WITH ANYTHING YOU CAN GET YOUR HANDS ON.

TRESPASSER
THE EVOLUTION OF 1ST PERSON 3-D GAMING.

WWW.TRESPASSER.COM
2. GRAND PRIX LEGENDS

Windows 95 CD-ROM, $49.95
Sierra Sports, (541) 343-0772
www.sierrasports.com

SOME MIGHT CALL 1967 the glory days of auto racing. It was the year before tobacco companies showed interest in—and showered big bucks on—F1 racing teams. It was also the year before aerodynamics were seriously considered;" inverted wings would be a part of car design thereafter. Others might call it suicide. Many drivers (and not a few fans) met an untimely demise at the racetrack since safety was less of a concern than it is today. You can call it what you like after you take a few cautious laps around the track in one of these machines in GRAND PRIX LEGENDS, Papyrus' latest addition to its long list of classic driving simulations.

GRAND PRIX LEGENDS lets you jump in at the start of the 1967 Formula One season with the team of your choice. Start at the top with Team Lotus and the super duo of Graham Hill and Jimmy Clark. Or choose to join young Scottish driver Jimmy Stuart with team BRM.

GRAND PRIX LEGENDS offers a unique style and era of racing. While most new driving games look to modern era cars, the racing enthusiasts at Papyrus decided to take a look back at what was arguably a more romantic era of auto racing. As for racing enthusiasts like us, we can't wait to get a chance to race in 1967.

3. NEED FOR SPEED III: HOT PURSUIT

Windows 95 CD-ROM, $49.95
Electronic Arts, (415) 571-7171
www.ea.com

EA'S POPULAR SPORTS car racing game makes a grand return this year with a new graphics engine that's nothing short of spectacular. The development team has really squeezed out everything today's 3D cards have to offer. Blowing leaves, spraying water, and billowing snow are just a few of the special effects that will amaze you. The cars are polished to a mirrorlike shine, so you can see the sometimes fantastical surroundings reflected on the car bodies as you drive by. If you don't own a 3D card yet, NFSIII might be one of the best reasons to run out and buy one.

Like the previous entries in the NEED FOR SPEED series, NFSIII also supplies plenty of nicely modeled sports cars to take out on the open road. Go for raw power in the Lamborghini Countach or the Ferrari F355 F1. Or take a more leisurely drive in the Jaguar XJ8 or the Aston Martin, with enough sports car handling for fun.

One of the most fun parts of the game is the Hot Pursuit mode—the obstacles aren't just your opponents and the slower traffic. You'll have to watch out for the police cars; officers are poised with ticket books in hand, hoping to bring a premature end to your day. But you've come prepared with a police scanner and a radar detector. Or you can choose to be the pursuer in either a specially modified Corvette or Lamborghini squad car. In NFSIII, it's not just the speeders who get to have all the fun.
You control the Linear Displacement Drive
You control the Light Speed Capsule Drive
You control the Particle Beam Canons

COMMAND THE SHIP, CONTROL THE FUTURE.

It's 2258, you've been recruited to command a Dreadnaught class starship in the Commonwealth Navy. Fighting an unpredictable and relentless enemy, the renegade Indies, you will need much more than your Particle Beam Canons to win the Independence War. It's time to take control of your ship, your crew, and the future in the biggest and deepest space campaign the Galaxy has ever seen.

DOWNLOAD THE DEMO AT: www.independencewar.com

INDEPENDENCE WAR
The Starship Simulator

© 1998 Infogrames Entertainment Inc./Particle Systems Ltd.
Go to #118 @ www.computergaming.com/infolink
4. MOTOCROSS MADNESS
Windows 95 CD-ROM, $54.95
Microsoft, (312) 882-8800
www.microsoft.com

FOR ANYONE WHO LIKED to jump off ramps on their bike as a kid, this game might let you relive some of that excitement—without the fear of broken bones. You really get a sense of the scale of this game when you enter the Stunt Quarry—a vast, uncluttered stretch of terrain with lots of ravines, mounds, and hills from which to catch serious air and perform spectacular jumps to your childish heart’s content.

You can also enter a variety of races in which handling and speed are more important than showing off (but the crowds love it). There are Baja Races, Stunt Quarries, National Races, and the Supercross.

5. MOTO RACER 2
Windows 95 CD-ROM, $49.95
Electronic Arts, (415) 571-7171
www.ea.com

AS ONE OF FIVE MOTORCYCLE racing games coming out this year, MOTO RACER 2 builds on the popularity of its predecessor with better graphics, more detailed environments, and a new track editor that lets you create your own circuits.

As in the first game, MOTO RACER 2 provides both high-powered street bike and dirt bike racing in one arcade-style game. After you become proficient at riding both kinds of bikes, you can start a season, during which you’ll be required to compete on both kinds of tracks. Choose a bike based on a combination of four attributes: top speed, handling, braking, and acceleration. Then try to keep up with the leaders on a high-speed road course or fly through the air on the hilly dirt track. It’s fun and challenging to race on both, and MOTO RACER 2 is the only game that lets you do it.

More Racing Games

Many more racing games are coming down the pike in the next year. Here are just a few of them.

VIPER RACING from Sierra Sports brings the same type of racing game to the PC as the PlayStation’s GRAND TOURISMO. Start your career as an amateur driver with no funds and win races for money to buy upgrades for your car. Although VIPER RACING is a full simulation, different difficulty levels make it accessible for anyone.

Virgin Interactive Entertainment gets into the driving game market this year with PROFESSIONAL SPORTS CAR RACING, based on the Professional Sports Car Racing league that Virgin itself sponsors. The cars in this league are largely based on production cars from Audi, BMW, Ford, Honda, Volvo, and several others. They might not be as fast as a Formula One car, but they are certainly easier to handle.

Accolade’s TEST DRIVE 5 is the latest iteration of the popular arcade racing game, with as much and even more to offer than a lot of other racing games: more cars, more tracks, and more music tracks. The cars in TDS are varied and include exotic, contemporary sports cars as well as muscle cars of old.

Stocking Stuffers

Microsoft Force Feedback Steering Wheel

What better way to play a racing game than with a driving wheel and pedal controller? Wheels have been getting better and cheaper lately, and none has excited us more than Microsoft’s Force Feedback Steering Wheel ($199). The first time you experience the jarring bump of the road, the grinding of metal on metal, even the simple idling of your motor, you will never want to go back. Check www.microsoft.com for more info.
FOR THOSE WHO THINK

GUN CONTROL

MANIPULATE ENVIRONMENTS IN ORDER TO PROGRESS THROUGH SIX TREACHEROUS, MISSION-BASED WORLDS.

MORPH INTO FOUR DIFFERENT VEHICLE TYPES INCLUDING LAND, HOVER, AMPHIBIOUS AND SUBMERSIBLE.

3D SCALABLE GRAPHICS ENGINE LETS THE GAME RUN ON JUST ABOUT ANY PC AND TAKES FULL ADVANTAGE OF THE LATEST 3D HARDWARE ACCELERATION WITH FULL VOODOO2™ SUPPORT.

TOOE 18 HIGH-POWERED WEAPONS INCLUDING THE ARC SABER, PROXIMITY MINES, NAPALM, FREON CANNONS AND HIGH INTENSITY LASERS.

COMBAT EVIL FORCES ALONE OR JUMP ONLINE AND WRECK MULTIPLAYER HAVOC IN AN 8-PLAYER DEATHMATCH.
HAS SOMETHING TO DO WITH AIM.

RECOIL

"THE VISUALS IN THE GAME ARE STUNNING AND THE GAMEPLAY IS EXTREMELY IMMERSIVE."
-GAMESLICE

"LOOKS TO BE A KILLER ADDITION TO THE GAME GENRE."
-NEXT GENERATION ONLINE

"DEMO RATED 5 OUT OF 5."
-GAMESPOT

"...THE FINAL RELEASE IS CERTAINLY ON MY MUST-HAVE LIST."
-ADRENALINE VAULT

COMMAND A RAPID MOTION TANK FROM A FIRST OR THIRD-PERSON PERSPECTIVE.

Playable demo at: www.recoil.westwood.com

3D Acceleration not required. © 1998 Electronic Arts. Electronic Arts and the Electronic Arts logo are registered trademarks of Electronic Arts in U.S. and/or other countries.
Forgoing formations, 3D graphics, and other bells and whistles, STARCAST focuses squarely on deep, addictive gameplay.

advantages, drawbacks, and unique unit sets. While other games make few real distinctions between races apart from the odd uber unit, STARCAST delivers a dramatically different gaming experience depending on whether you opt to play as the scrappy Terrans, the mystic warrior Protoss, or the hideous Alien-like Zerg.

Bolstered by a strong story, the single-player game is a study in constantly escalating challenge. The scenario design is stellar, featuring one of real-time strategy's most surprising and dramatic scenarios early in the game, as hordes of scampering zerglings overrun a Terran base. It's a testament to STARCAST's beautifully balanced play that there is no one way to win a scenario—thus eliminating that annoying, almost puzzlelike quality that plagues so many other strategy titles.

As great as the game is solo, multiplayer is where it really shines. You can develop your multiplayer chops by squaring off against the computer's brutal AI in randomly generated scenarios. When you're ready, you can play over a LAN (up to eight players can spawn and play off one CD) or use Blizzard's free battle.net service for Internet play.
THE HOLIDAY HOT 100

2. MYTH II:
SOULBLIGHTER
Windows 95/98 CD-ROM, $49
Bungie Software, (312) 397-0500
www.bungie.com

THE FIRST MYTH
gained CGW's Strategy Game of the
Year award last year, and it
looks as though the sequel will be
a top contender for the 1998
honor. Continuing the epic story of
the first game, Bungie hasn't
dramatically changed anything in MYTH
II, deciding wisely to improve and
enhance gameplay while simplifying
the interface.

You'll still command a set number
of troops that gain experience over
the course of your campaign.
Commanding them is easier than
before because of the crucial controls
for viewing the carnage-filled battlefields
are intuitively handled by
simply moving your mouse. The
original keyboard controls remain
as an option. Critical unit facing is
now achieved via a simple right-
drag-and-drop of highlighted units
as opposed to MYTH's funky,
seemingly perfunctory, wrist-
snapping gesture-clicking.

MYTH II features the same
unforgiving tactical combat. But
gamers who found the first game
too unforgiving will be glad to
hear that the learning curve has
been flattened a bit, though not at
the expense of challenging game-
play. Enriching the playing experi-
ence will be new units like mortar
dwarves, friendly trow, and magic
units with replenishing mana as
well as new strategically useful
elements such as fire.

MYTH II features even lush 3D
environments, more frames of ani-
mation, and improved pathfinding.
Interior environments and polygo-
nal moving objects such as draw-
bridges have been added, at last
satisfying gamers who longed to
besiege castles. Finally, MYTH II
will include editing tools, enabling
gamers to create custom maps
and units.

By providing more of everything
that made the first game a winner,
Bungie has ensured that MYTH II:
SOULBLIGHTER will be a must-have
for PC warriors. Don't miss our full
preview elsewhere in this issue.

3. HEROES OF MIGHT
AND MAGIC III
Windows 95/98 CD-ROM, $50
3DO, (650) 261-3000
www.3do.com

TAKING PLACE AFTER
events in the MIGHT AND MAGIC VI
RPG, HEROES III adopts some of
that game's enormity for the
biggest, most varied installment in
this stellar franchise. The turn-
based gameplay that characterizes
HEROES remains basically the
same: Your mission is to lead
armies of fantastic creatures
across a lush landscape, fighting
for resources, building cities, and
storming castles.

HEROES III further distinguishes
itself from the pack with a greater
emphasis on story—a story told in
three acts that comprise two mini-
campaigns each. In addition, sub-
quests occur midscenario when a
player enters special parts of the
map, and there are underground
worlds to explore and conquer as
new units to control, unit stacks
have been expanded to include up
to seven unit types, and the hex-
based combat maps have nearly
doubled in size.

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to seven unit types, and the hex-
based combat maps have nearly
doubled in size.

4. WARHAMMER
40,000: CHAOS GATE
Windows 95/98 CD-ROM, $49.99
SSI, (800) 716-8503
www.chaosgate.com

TURN-BASED SQUAD-LEVEL
combat is back—and—surprise—
it's not an X-COM game. In SSI's
WARHAMMER 40,000: CHAOS
GATE, gamers command
five-man units across
various alien land-
scapes, battling the
forces of the evil Chaos
cultists. Fully customiz-
able squads let you
name troops, shuffle
unit lines, and outfit
each fighter with items
from the game's enor-
mous, devastating arse-
nal. With only a limited number
of troops, you're compelled to pro-
tect your forces, but you'll be
rewarded as they gain experience
and abilities with every mission.

The work that has gone into the
AI in CHAOS GATE is evident even
at the game's easiest setting:
Enemies still fight smart, you just
face fewer and weaker units. Of
course, you'll be able to face the
most challenging adversaries—
other gamers—in multiplayer
a gaming that lets you battle as the
twisted Chaos army.
Dominant Species

His movements are so realistic, the faster he runs, the harder he rams his head.

[We said realistic, not bright.]

A new breed of real-time strategy gaming. 27,000 square miles of 3D alien landscape. A true day/night cycle. 27 species in total, head-ramming 3D. Single and multiplayer games—but whichever you choose, you’re always an alien. And humans are just something else for your trophy case.

Dominant Species. Who rules your world?

www.redstorm.com

Go to #274 @ www.computergaming.com/infolink
THE HOLIDAY HOT 100

6. WARLORDS III:
   DARKLORDS RISING
   Windows 95/98 CD-ROM, $39.95
   Red Orb Entertainment, (415) 382-4777
   www.redorb.com

DON'T LET THE FLOOD
   of real-time strategy games fool you. Quality turn-based gaming
   is alive and well in such standout titles as WARLORD III:
   DARKLORDS RISING. More an expanded
   version of WARLORDS III: REIGN OF
   HEROES than a true sequel, this addictive
   title packs the earlier game and a ton of
   new goodies onto the same CD. Five new
   heroes and 31 new units pump the total
   up to 15 heroes and 95 units in 4 new
   campaigns and 15 new single scenarios.
   Gameplay takes place in both indoor
   and outdoor environments as gamers
   generate armies, defend and besiege
   castles, and develop their heroes' abilities.
   A random mission generator guarantees
   long-term replayability, as do the new
   scenario/campaign editor and the robust
   multiplayer options.

5. COMMAND &
   CONQUER 2:
   TIBERIAN SUN
   Windows 95/98 CD-ROM, $49.95
   Westwood Studios, (888) 212-1702
   www.westwood.com

ALTHOUGH ITS STORYLINE
   is worthy of a well-crafted Silver Surfer
   saga, COMMAND & CONQUER 2: TIBERIAN
   SUN doesn't unfold in a linear manner,
   and gameplay doesn't repeat. Scenarios
   are no longer scripted, and mission solu-
   tions are driven by considerations of
   weight, flammability, geography, and
   weather—not predetermined factors. In
   addition, you're not living in a vacuum.
   Civilians and mutants don't just stand
   around; they form militias. Totally merce-
   nary commando units can be recruited if
   you find the resources and artifacts they
   want. Spies can steal information by
   entering facilities invisibly. Units that sur-
   vive missions gain experience levels, con-
   stantly improving. The AI uses a problem-
   solving routine, actually learning from
   playing against you by building a continu-
   ously growing database of your tenden-
   cies. COMMAND & CONQUER 2: TIBERIAN
   SUN has a mixture of familiar and new
   game mechanics, fascinating new graph-
   ic effects, and what appears to be a chal-
   lenging new AI. NOID's back!

7. POPULOUS:
   THE BEGINNING
   Windows 95/98 CD-ROM, $54.95
   Origin, (800) 245-4525
   www.origin.ea.com

POPULOUS: THE BEGINNING
   (POP: TB) ranks as the ultimate
god-game, putting you in the
role of a shaman striving to
become a deity. In this real-time
title you shoot for divinity,
buidling villages, raising armies,
and ruthlessly killing or con-
verting your enemies. The third
installment of a ground-break-
ingen series, POP: TB maintains a
slightly whimsical, otherworldly
tone. Utterly original, POP: TB is
a breath of fresh air.

www.computergaming.com

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 RULES OF ENGAGEMENT:
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 SPEED IS LIFE
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“Reminds You That Adventure Games At Their Best Can Pull Your Heart And Brain As Solidly As Any Motion Picture.”

-Computer Gaming World

“If Jacob’s Ladder Was Reality Squared, This Is Reality Cubed.”

-J.C. Hertz, The New York Times

“Likely To Keep You Glued To Your Computer For Hours At A Time.”

-PC Gamer

“Vastly Different And Thoroughly Entertaining.”

-Next Generation

The First Adventure Game Where Your Emotions Play With Your Intelligence.
THE HOLIDAY HOT 100

8. BIRTH OF THE FEDERATION

Windows 95/98 CD-ROM, $55
MicroProse, (510) 864-4550
www.microprose.com

STAR TREK game have hit all corners of the galaxy in terms of quality, but BIRTH OF THE FEDERATION (BOTF) looks like a real winner. Taking place in the Next Generation universe, BOTF lets you play as one of five major alliances (Federation, Ferengi, Klingon, Cardassian, or Romulan), with the inherent strengths and weaknesses of each affecting gameplay. The scope of the game rivals that of the universe itself, stressing resource management, trade, diplomacy, and combat.

9. JAGGED ALLIANCE 2

Windows 95/98 CD-ROM, $48.99
Sir-Tech, (315) 993-6451
www.jaggedalliance.com

START WITH THE TACTICAL aspects of the original JAGGED ALLIANCE, mix in an asymmetric perspective, stir in a pinch of role-playing, and add a handful of realistic weapons. Wrap a more sophisticated strategic campaign around the mix, and you have the makings of an addictive game. You manage a team of mercenaries bent on freeing an island nation from the grips of a two-bit dictator. Resource management, NPC interaction, and careful tactical movement all play big roles. From what we've seen of the JAGGED ALLIANCE 2 demo, this game should really appeal to JAGGED ALLIANCE and X-COM fans, and even a few role-players who liked FALLOUT. Just make sure you can survive the inevitable sleep deprivation.

10. RAILROAD TYCOON II

Windows 95/98 CD-ROM, $39.95
Pop Top Software, (212) 696-2000
www.popstopsoftware.com

SINCE WE LAST WROTE about this game, we've been impressed by how much the AI has improved, particularly with the computer robber barons. If you're expecting a rehash of other railroad games, forget it. Whether you're micromanaging your business, immersing yourself in stock trading, or just playing with your virtual train set, you'll find plenty of freshness here. The 3D engine can manipulate up to 300,000 polygons, allowing you to freely rotate the landscape. Best of all, the game looks good even on older Pentiums, with no need for a 3D accelerator. RAILROAD TYCOON II should support up to 16 would-be Vanderbilts for multiplayer action.
WCW Nitro

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THE HOLIDAY HOT 100

More Strategic Gift Giving

With heaps of new games coming out late this year, it's easy to overlook older favorites that gain new life via expansion packs. Easily topping this list is AGE OF EMPIRES: THE RISE OF ROME, a real favorite at the CGW office, which has led to the renaming of midday as "Age of Lunch." RISE OF ROME adds four new civilizations and four new technologies, and (finally) lets you queue up unit production. There are five impressive new units as well, including the priest-hacking scythe chariot, which lets you literally—and bloodily—cut down the threat of unit conversion.

STARCASTLE: BROAD WAR, Blizzard's official add-on, is sure to appeal to any STARCASTLE fan. Thirty new campaign missions provide plenty of challenge and continue the story of the first game. But the real draw here should be the new units, two for each race: an air-to-air unit and Dark Templars for the Protoss; healing medics and the devastating Valkyrie missile frigate for the Terrans; and a new mutalisk aspect and defensive unit for the Zerg. Of course the new units, tile-sets, and maps will be supported for multiplayer carnage on battle.net.

Based on the H.G. Wells sci-fi classic, GT Interactive's WAR OF THE WORLDS breaks from the standard, preset-mission formula of most real-time strategy games by asking gamers to position their forces on a large strategic map of the British Isles. The result is refreshingly nonlinear gameplay. Gamers can play as either the defending English or the invading Martians. The two sides have radically different units and technologies; and while resource-management is a definite part of the game, the differing technologies will have each side scrambling for different raw materials. It's a sharp-looking game, featuring 3D animated objects, light-sourcing, and some cool environmental effects courtesy of a dynamic particle system.

World-builders will welcome SIMCITY 3000 and CAESAR III. Unlike SIMCITY 3000, CAESAR III has some combat, but both games emphasize managing the growth and well-being of a city, albeit in vastly disparate eras. Keeping your populace happy, pleasing the emperor, fighting invaders, and establishing trade routes will determine your success in CAESAR III. Aspiring city managers in SIMCITY will have to contend with natural disasters, build power grids, and find a tax rate that will attract business without driving away citizens.

Interactive Magic's SEVEN KINGDOMS: ANCIENT ADVERSARIES might seem like an AGE OF EMPIRES clone, but to call it so would do it a disservice. There is no campaign; your goal, simply put, is to expand one of several different ancient cultures until you basically control the world. This is a complex game that doesn't emphasize combat. Instead, it focuses on a deep economic model, construction, espionage, and diplomacy, with a smidgen of fantasy, to provide the bulk of its challenge.

Stocking Stuffers

How can a medieval painting depicting a game of chess put your life in jeopardy? That's the question that Julia, a young art restorer, desperately attempts to answer as she peels away the surface of The Flanders Panel—a painting that holds the key to a 500-year-old murder. All she needs to do is reconstruct the moves of the fateful match. Novelist Arturo Pérez-Reverte builds a tale of intrigue and suspense as rich and complex as the layers of oil on the artwork itself. The Flanders Panel ($11.95) is published by Bantam.

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Save the Mudokons and save your game anywhere!
Other heroes have swords, chainsaws, and vaporizers to deal with their monstrous enemies. In Oddworld, all you've got is gas. Abe now has the ability to possess his own farts and blow his enemies away! It's a power he's going to need if he's going to stop the Glukkon Meat Barons from making Soulstorm Brew - the only beverage made from real Mudokon tears and bones. Fart possession. No other game has it and frankly, we're not sure any other game would want it!

odd to the last drop
Available at your local retail store.
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Armchair commanders will spend hours drooling over the variety of command options at their fingertips before they ever launch an attack.

That ART OF WAR is also a challenging, enjoyable game is cause for celebration.

Before Norm Koger fans immerse themselves in wargaming heaven, be warned that ART OF WAR has a steep learning curve. Once you have the game system down, however, it rewards you like no other operational-level game on the PC. For me, it was like having PACIFIC WAR with a real interface and a commonsense deployment system. Armchair commanders will spend hours drooling over the variety of command options at their fingertips before they ever launch an attack.

ART OF WAR takes into account a dizzying 90-plus factors during combat, but it also has surprisingly good pacing for a complex turn-based game. The sophisticated AI knows how to use combined arms and when to call in artillery and air support. I guarantee it'll kick you from here to Bataan the first few games (if you don't cheat). Once you tire of the sophisticated computer opponent and tough campaigns, ART OF WAR lets you edit practically every aspect of the game. It's hard to believe, but TalonSoft may have surpassed its BATTLEGROUND series with this one.
2. AXIS & ALLIES

Windows 95/98 CD-ROM, $44.95
Hasbro Interactive, (508) 921-3700
www.hasbro.com

WHEN LARRY HARRIS’ beer-and-pretzels boardgame vision of WWII hit the marketing beaches, it was mostly ignored by the “realism is king” crowd. In 1984 Hasbro picked up the game, streamlined it, and supercharged the graphics. A million or so units later, AXIS & ALLIES is still selling, which bodes well for its conversion to PC.

AXIS & ALLIES begins at the peak of Axis success, when Germany and Japan must press hard for a strategic victory before the industrial might of the United States swings the tide in the Allies’ favor. Along the way, you struggle for dominance in North Africa, try to blitz Russia out of the war, prep for D-Day, and research high-tech weapons like jet fighters and heavy bombers.

Lest you fear another YATZEE or PICTONARY, rest assured that everything you’ve come to love from the boardgame is here, with a toggle for every option you’ve ever imagined. The improved rules for multiple hits on battleships and submerged submarines are by themselves almost worth the price of the game.

The AI is quite competent. And for games between human generals, Hasbro plans to support every kind of multiplayer option. At press time, it was unclear whether optional time limits for each turn would make the cut, so make sure you’re playing with someone who takes less than an hour per turn. AXIS & ALLIES is one of those rare games that goes beyond genre boundaries. It’s hard to imagine any gamer not smiling upon finding this under the tree.

3. BATTLE OF BRITAIN

Windows 95/98 CD-ROM, $49.95
TalonSoft, (800) 211-6504
www.talonsoft.com

WITH THE SOMewhat lackluster reception of STEEL PANTHERS III, you had to wonder whether the veteran duo of Gary Grigsby and Keith Brors had—like one of those art-rock groups from the 1970s—run out of keyboard miracles. Working with TalonSoft, however, seems to have revitalized the famed designers. Because BATTLE OF BRITAIN looks to be as fun as Grigsby’s USAAF from the old Apple II/C-64 days, with the added advantage of a more dynamic situation.

BATTLE OF BRITAIN is a combination of real-time and turn-based strategy closer to HARPOON than MAX or X-COM. Basically, the German player maps out his bombing raids, strafing runs, and escorts, then launches them (up to 100 missions per day) choosing the time, altitude, and paths for each. Once the Luftwaffe shows up, the British player reacts as the clock ticks, trying to figure out whether those squadrons over Birmingham are really going after the steel factories or are simply a diversion for a massive attack on Big Ben.

Everything happens operationally—you won’t be fighting tactically as in ACHTUNG! SPITFIRE—but there is plenty going on to keep you busy. It seems that every fighter, recon, bomber, pilot, and historical target from the battle has been included, and there’s even an optional 1941 campaign. While we’re happy to see Grigsby finally doing a Windows 95 game, there is the possibility that the game won’t be fully 3D as expected. Still, this is a fresh take on the most famous aerial campaign in history, and a pretty safe bet for the budding air force commander in your family this holiday season.
IT'S TIME YOU

Revolutionary new battlefield physics –
Deformable terrain, energy weapon
effects, dynamic colored lighting and
flying shrapnel – intensifies the realism
and excitement.

New “veterancy” feature enables units to
become smarter, faster and stronger as
they become battle hardened with combat
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Experience the future of global war with
new, high-energy weapons and defenses
– Jump Jet Infantry, Laser Fences,
Disruptors, Hover Tanks, Tunneling APCs,
The Firestorm Defense, Mechanized Battle
Units and many more.

Built-in waypoint system and special drop
ship missions let you decide which units
to bring into battle.

More tactics of sabotage and guerilla
warfare – execute covert night missions,
set forest fires and destroy bridges –
with unique opportunities in three
different environments.

Internet play is easier than ever with a
streamlined connection and an integrated
interface – plus new support for
worldwide rankings, ladder systems and
Battle Clans™.
SAW THE FUTURE

COMMAND & CONQUER
TIBERIAN SUN

COMING SOON

Westwood Studios

ORIGINAL COMMAND & CONQUER
his crew. So while we had more than a few quibbles with EAST FRONT, we were hardly surprised to find that WEST FRONT is an improvement in every way. The game plays

4. AIDE DE CAMP 2.0
Windows 95/98 CD-ROM, $59.95
HPS Simulations, (408) 554-8381
www.hpssims.com

A SEQUEL TO THE POWERFUL editing program that won a CGW Special Achievement Premier Award three years ago, AIDE DE CAMP 2 (ADC 2) lets you convert your paper games to play-by-email computer games. ADC 2 won’t magically put an AI in your boardgame conversion, nor will it change turn-based games to real-time. But it does have security passwords, hidden unit options, variable initiative, and a slick line-of-sight algorithm. It even supports card play. After a little practice, you may find your 256-color version preferable to paper maps—especially if you’re allergic to dust.

5. WEST FRONT
Windows 95/98 CD-ROM, $49.95
Talonsoft, (800) 211-6504
www.talonsoft.com

NO ONE IN THE COMPUTER gaming industry supports a product line better than Jim Rose and faster (particularly when the AI is moving), the combat routines have a better historical feel, and the graphics are both more pleasing and more functional. If that isn’t enough, fans of Saving Private Ryan can try their own hand at D-Day. What more could you ask for?

6. NORTH VS. SOUTH
Windows 95/98 CD-ROM, $49.95
Interactive Magic, (800) 789-1534
www.imagicgames.com

NORTH VS. SOUTH MAKES use of the same basic engine as I-Magic’s GREAT BATTLES, with heavy modifications for muskets and artillery (instead of shields and spears). In addition to the usual stand-alone battles, there will elicit a Rebel Yell from even the Yankee in your household.

7. 101: THE 101ST AIRBORNE IN NORMANDY
Windows 95/98 CD-ROM, STBA Empire Software, (800) 216-9706
www.empire-us.com

ASIDE FROM ITS INCREDIBLY long name, Interactive Sim’s 101: THE 101ST AIRBORNE IN NORMANDY should be a welcome treat for fans of turn-based WWII wargames. The colorful maps resemble those of CLOSE COMBAT, but the focus is different. You have to deal with your 18-man squad becoming separated in the darkness or link up with a hidden French Resistance group. Each soldier possesses different personality traits, skills and special training, rated in various categories, which include intelligence, endurance, weapons usage, and throwing ability. This gives the game a nice role-playing feel for any ripcord-puller.
Magic, Murder, Mayhem. All in a day's quest.

Experience this online fantasy world at www.3do.com/Meridian
1941: German armies have overrun Europe. Now the High Command has turned its attention eastward to Russia, and is preparing to invade the Motherland in the largest military operation the world has ever seen. Tens of millions of soldiers will take up the fight to either bring Russia to its knees or to repel the invasion and bring the German war machine to a grinding halt.

Now you can command the complete forces of either nation on the Eastern Front, in a wargaming simulation of unprecedented scale and detail.

- Radical new approach to wargame design gives you control of troops by the thousands while the game engine simulates movement, engagement, supply, morale, and more with incredible detail that goes all the way down to individual companies.
- Plan operations just as a real commander would, drawing operational maps and drafting orders to distribute to your armies then watch as your commands are carried out in real-time.
- Wage war on real terrain with realistic representation of command and control. No hexes, no turns, just pure simulation of military command on an unprecedented scale.

**ROAD TO MOSCOW**

Windows® 95 CD-ROM Strategy Game

www.imagicgames.com
8. GREAT BATTLES
SERIES: COLLECTOR’S EDITION
Windows 95/98 CD-ROM, $49.95
Interactive Magic, (800) 789-1534
www.imagicgames.com

Much more than the contractual-obligation-greatest-hits album, this version of GREAT BATTLES finally comes close to the epic sweep and historical accuracy of the award-winning boardgames on which the series is based. All of the graphical and engine improvements from CAESAR have been retrofitted to ALEXANDER and HANNIBAL (the latter is finally patched). Best of all, the new scenario editor finally lets you pit Julius against Alex to see if either of them is worthy of holding Hannibal’s spear. A great buy; this is how the games should have shipped in the first place.

9. PEOPLE’S GENERAL
Windows 95/98 CD-ROM, $49.95
SSI, (800) 245-4525
www.ssioline.com

We were really worried about this game, since it ignored the Communists vs. Nationalists struggle in post-WWII China in favor of a hypothetical Chinese-Russian war at the turn of the 21st century. But PEOPLE’S GENERAL turned out to be more fun than we expected. It’s not PANZER GENERAL II by any means, but there are plenty of high-tech toys with which to play, and the new air and artillery subsystems wreak a heap of havoc in a hurry.

10. DRAGOON
Windows 3.5-inch floppies, $29.95
Art of War/Boku Strategy, (319) 351-5396
www.boku.simplenet.com/index.html

We at CGW have always had a soft spot for Indie publishers, but this game makes the list strictly on merit. Boku Strategy and Art of War get Brownie points for simulating warfare in the age of Frederick the Great—one of wargaming’s most neglected areas—and for making it somehow enjoyable. DRAGOON encourages the proper use of command control and linear tactics—a nice achievement for any game.

Other Holiday Battles

AlonSoft marches apace with BATTLEGROUND 9: CHICKAMAUGA, which brings the esteemed engine up to true Windows 95 standards. SSI’s ULTIMATE WWII COLLECTION hardly qualifies for that title, but it’s worth buying just to introduce a friend to PANZER GENERAL II. Though it’s a bit dated now, SEMPER FI! lets your Marines trample all kinds of opposition during a lunch break. MAN OF WAR II, GUADALCANAL, and PACIFIC TIDE will likely slip to early 1999, so don’t plan your holiday shopping around them.
if you don't find this PEARL

and save an ENTIRE city, things are gonna get UGLY.

WIN INSTANTLY!

Look in packages of O.D.T. for the chance for you and 5 of your friends to compete in the North American O.D.T. Paintball Championship.

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*Contact rules and information available in stores, at O.D.T. packages and at www.odt-game.com
The citizens of Calli are about to be wiped out by a deadly epidemic. But to find the mystical green pearl that can save them, you must run a suicidal gauntlet through a massive tower. There are only two ways out: Alive and very dead. And there are plenty of hideous creatures in your way who are voting for dead. One thing’s for sure, survival isn’t pretty.

- Plunge into the bizarre 3-D worlds of O.D.T. It’s part magic, part mayhem.
- Make your way through 8 intricate levels and more than 70 treacherous sectors.
- O.D.T. is an intense action adventure game that lets you choose from four characters — Lt. Ike Hawkins, Julia Chase, Maxx Havoc and Solsar — with different strengths, abilities and special moves.
- Confront your own mortality with endless fighting combinations, including hand-to-hand, weapon or spell combat.
DON'T SHOOT UNTIL YOU SEE THE WHITES OF THEIR COMPOUND EYES.

Welcome to Nanocorps, where you'll soon discover the benefits of being small. You're quick, agile. You can fly under the bathroom door. And best of all, you can see the look in your opponents' eyes when you push.

GET SMALL. THEN GET EVEN.
Hardware

The RIVA TNT chip is one of the most anticipated graphics accelerator chips of the past year.

1. STB Velocity 4400
Velocity 4400, $199
STB Systems, (972) 234-8750
www.STB.com

IT'S NO BOLD STATEMENT that 3D graphics are here to stay, and it's no surprise that 3D first found a home in first-person shooters and vehicle sims. But last year saw the arrival of the 3D strategy game and even 3D-accelerated kids' titles. Microsoft delivered DirectX6, which significantly improves usability and performance of Direct3D. OpenGL also garnered wider acceptance with a number of companies announcing OpenGL titles—and not just once based on the QUAKE engine. Running the latest crop of 3D games requires serious CPU and graphics horsepower.

Stepping up to the plate is nVidia with the RIVA TNT.

The RIVA TNT chip from nVidia is one of the most anticipated

2. Guilemoot
Maxigamer
Phoenix

Maxigamer Phoenix, $129 (after rebate)
Guilemoot International, (800) 967-0863
www.guilemoot.com

NOT EVERYONE CAN afford to upgrade their systems every year. Let's say you bought last year's killer rig—a 266MHz or 300MHz Pentium II. Or you're scraping up all your savings to get a 300MHz Celeron-A or K6-2 system. Which 2D/3D card do you choose? If you can afford only one card, consider a board that uses 3Dfx's new Banshee chipset.

The Banshee is no replacement for Voodoo2, but Banshee's performance in Direct3D, OpenGL, and Glide games is nonetheless solid. Even a multitemplate game like QUAKE II does reasonably well on a Pentium II with Banshee, although it has to perform multipass rendering to pull off QUAKE II's multitemplate effects. The 2D performance is very good and surpasses everything except the TNT—at least up to 1024x768x32.

Our pick for Banshee boards is Guilemoot's Maxigamer Phoenix. The board itself isn't all that special—pretty much a copy of the 3Dfx reference board. But it's cheap. A 16MB board retails for $149 but comes with a $20 rebate coupon, making the net price $129. It comes with some cool games, too, including a limited version of HALF-LIFE, the full version of BARRAGE, and a host of demos. Phoenix also comes in both PCI and AGP flavors, so if you can afford only one low-cost board, check it out.
3. Creative Sound
Blaster Live!
Sound Blaster Live! Value, $99
Creative Labs, (408) 428-6600
www.soundblaster.com

AFTER SOME HESITANT
experiments based on its Ensoniq
acquisition, Creative enters the
PCI sound card fray full tilt with
Sound Blaster Live! For $99 the
Value edition lacks many of the
amenities of the full package, but
it does have clean digital audio
and superb MIDI. The card sup-
ports DirectSound3D with
Creative’s EAX (Environmental
Audio Extensions). However, for
full effect, you’ll need a four-
speaker setup that can plug into
the two audio outputs on
the back of the card.
The sound
quality is good, and the DOS sup-
port works, too. Given Creative’s
marketing muscle, you can expect
to see a number of games support
the EAX extensions.

4. PowerLeap AMD
K6-2 Upgrade
AMD K6-2 Upgrade, price varies
depending on CPU
PowerLeap, (877) 278-5327
www.powerleap.com

TIRED OF YOUR 3D
games running at 10fps?
Wondering why even a
Voodoo² board, your now-aging
Pentium 133 is still dragging?
Answer: It’s not your 3D accelera-
tor, it’s your CPU. Because the 3D
graphics pipeline in today’s PC
affects all parts of your sys-
tem, it can be only as fast
as the slowest part.
So if you’ve got
that screamin’ Voodoo² board in a
P133, you’ve got an imbalance
between your now-underpowered
CPU and a powerful 3D chipset.

The folks at PowerLeap offer a
wide array of CPU upgrades based
on Intel, AMD, and Cyrix CPUs.
What’s more, these upgrades arrive
with an onboard voltage
converter and ample documenta-
tion to ease installation. At a mini-
mum, you’ll need to update your
system’s BIOS. You may also have
to install a third-party shareware
BIOS to have your system work
with the new CPU. But for those
gamers out there with Pentium
60MHz machines (Socket 3) or
Pentium 100–166MHz machines
(Socket 5) who aren’t ready to
move to an AGP motherboard,
these upgrade options are defi-
nitely worth considering.

PowerLeap’s upgrade CPUs
range in price from under $100 to
about $229 for the fastest AMD
K6-2 chip.

5. Anchor Chips
EZ-Link
EZ-Link, $79.95
Anchor Chips, (619) 676-6815
www.ezlinkusb.com

IMAGINE HAVING TRUE
Plug-and-Play networking. Plug in
a device, and the networking is
live. We’ve all been waiting to
put those USB ports on our sys-
tems to good use. Anchor Chips
may well have something that
kills two stones with one bird: a
USB-based peer-to-peer net-
work. And since USB devices
are hot-swappable by design,
the networking functionality
disables itself gracefully
when you unplug the con-
nected machines.

Now here’s the cool
port: Reconnect the machines
and EZ-Link dynamically restores
networking without a reboot. EZ-
Link’s performance is a bit mixed. It

delivers
near-Ethernet ping
times (30–40ms), but its maximum
data rate is much slower than
Ethernet, somewhere in the
1–2Mbits/sec range, compared
with Ethernet’s typical 6–8Mbits/
sec. However, if you want to put
together a good gaming network
quickly, EZ Link makes it simple.

6. ADS
Technologies
USB Hub
USB Hub, $89
ADS Technologies, (562) 926-1928
www.adstech.com

WITH THE ARRIVAL OF
Windows 98 and DirectX6, USB
has finally arrived in earnest.
Most companies will be shipping
new USB controllers or USB ver-
sions of their existing controllers
this holiday season.

While USB is a cool technology
that makes devices hot-swappable
without the need for a
reboot, every system maker out
there still puts USB ports in
the wrong place: in the back of
the system. ADS Technologies’ USB
hub gets it right, adding four
ports to your system and putting
them where they belong: in the
front of your system.
PART ONE

Be warned: this is technology with a real "punch-you-in-the-gut-while-you're-not-looking" brand of sensitivity.

There's never been anything like Intensor. So in order to survive it, you need to understand a few things. Like to begin with, you need to know what a Sensory Gaming Experience is. It's complete immersion. It's intense tactile feedback. It's being able to see, hear and feel the game you're playing like never before. All you have to do is hook it up to the audio jack of any system, plug in any game and hold on. You may also want to say a little prayer.

Fig. 1. A breakdown of what you're up against.

PART TWO

Remember, in this chair no one can hear you scream.

Not everyone will have what it takes to handle Intensor's patented audio system. After all, we're talking 5 high-performance built-in speakers with 108dB output. Technically speaking, that means it's really loud. So for the neighbors' sake, you may want to use the headphone jack—which you can do without losing any tactile feedback. But keep in mind— if your ears start bleeding, you should probably turn the thing down.

Fig. 2. At 19 pounds, Intensor is designed for quick evacuation in the event things get ugly. (Shaky hands will appreciate the built-in molded carrying handle.)
PART THREE

Ducking, dodging, whimpering and other useful gaming skills you might want to perfect.

DEFENSIVE PROCEDURES

Fig. 3a. The Dodge

Fig. 3b. The Weave

Fig. 3c. The Duck

Be advised. With Intensor, you’ll not only hear your games like never before, you’ll also feel them. In your back. In your legs. You’ll feel sensations in places you never even knew you had. Which means every engine rev, every explosion, every kick will seem more real than you may want it to. So it’s important to note that under this type of extreme duress, screaming in high-pitched tones for one’s mommy is quite common.

TACTILE SENSATION GRAPH

Kidney Punch
Crushed By Falling Piano
Torn Apart By Wild Dogs
Intensor

PART FOUR

Any game. Any system. Any medium. After this, nothing will ever be the same.

From movies and CDs to all your favorite games, Intensor isn’t just compatible with your current system, it actually transforms it. It may also do the same to you. Once you take a seat, there’s a new awareness. And there’s no going back. It’s the gaming version of the thousand-yard stare. You’ll recognize it in others who’ve “been there.” Seek them out. Talk to them. This therapeutic approach can help preserve your sanity.

Fig. 4. Artist’s conception of Sensory Gaming’s effect on the human heart. Those with heart conditions should proceed at their own risk.

Fig. 5. Note: Players attempting to negotiate Intensor on anything less than a good, stiff spine may be reduced to a vegetative state.

Fig. 6. Intensor has been known to induce shock. In such cases, place victim flat on back, elevate legs 8 to 12 inches and call for help. (If victim begins vomiting, place him or her on one side to allow fluid drainage.)

Go to #235 © www.computergaming.com/infolink
7. Suncom
Controller Pack
Joystick/Throttle Combo, $90
Suncom, (847) 229-0002
www.suncominc.com

FLIGHT SIMS OF ALL
stripes seem to have undergone a
resurgence in popularity, and a
high-end flight controller can
make the flying experience much
more enjoyable. But the problem
with many programmable con-
trollers is their complexity, not to
mention their price.

Suncom's new controller pack
bundles its F-15E Talon joystick
and Strike Fighter split throttle
for only 90 greenbacks. Toss in a pair
of rudder pedals and you have a
great flight-sim setup at a much
lower price than you might expect.

The controllers are easy to pro-
gram—just press a button, press
the key (or key combination), and
release. You can store up to four
different game setups this way.

8. Canopus Pure3D-II
LX 2-Card Set
Pure3D-II LX (x2), $299
Canopus, (408) 954-4500
www.canopuscorp.com

CANOPUS PRIDES ITSELF
on not being just another refer-
ence board company. While the
crowded Voodoo® field is short-
full of reference board clones,
Canopus' unique design includes
an internal SLI connector that
does away with the external VGA
pass-through cable, and a game
launcher that allows each game to
have its own configuration when
running on Pure3D-II. One down-
side to the Canopus board when it
first shipped was its price, but the
company is now making two of its
12MB LX boards available for
$299. Pure3D LX lacks a TV-out
and onboard fan, so the only
drawback is that the boards may
not be as tolerant of overclocking.
Considering how much rendering
horsepower you're getting for
$300, though, it's probably a fea-
ture you can live without.

Stocking Stuffers

Logitech MouseMan+ "Not a creature was
stirring..." Well, Logitech has stirred things up a
bit with its new mouse offerings. Logitech's
MouseMan+ is a four-button mouse with a scroll wheel.
What's unusual is its shape. The design team at Logitech
has put a new slant to the whole mouse. The result is a
comfortable fit that makes driving both business apps and
action games effortless. The
scroll wheel is surprisingly
addictive since it lets you
scroll through documents
and Web pages without hav-
ing to head over to the appli-
cation's scroll bar. MouseMan's
control panel applet lets you
easily configure all four buttons, scroll
speed, and general mouse settings. If
the old gray mouse just ain't what it
used to be, check out this one.
MouseMan+, $59.95. Logitech, (800) 231-
Get hooked on slots and bingo without breaking the bank

SLINGO
CD-ROM

Get all the excitement of slot machines and bingo in one impossible-to-turn-off game. Slingo, the number one on-line game is now on CD-ROM. Take a chance, you might win big or you might lose it all. One thing’s for sure, once you play—you won’t be able to walk away. And hey, it’s a lot cheaper than a trip to Vegas.

For more information about Slingo® CD-ROM, please visit our website at www.hasbro-interactive.com or call 1-800-400-1352.

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Go to #071 © www.computergaming.com/infolink
“What a Sensation. The Ultimate Per4mer® Offers the Greatest Horsepower, Torque and Force Effects of Any Force Feedback Wheel I’ve Ever Used.”

What does engine size have to do with Force Feedback?

Everything!

Bigger engines deliver bigger horsepower, torque and the ultimate in force effects.

The Ultimate Per4mer® Force Feedback® Racing System houses the largest engine and includes the most rugged foot pedals of any product available.

<table>
<thead>
<tr>
<th>The Per4mer® Specs</th>
<th>Beat Everyone Hands Down!</th>
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<tbody>
<tr>
<td>Engine:</td>
<td>18 vpmdc</td>
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<tr>
<td>Torque:</td>
<td>3.9 foot lbs.</td>
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<td>RPM:</td>
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<td>Transmission:</td>
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<td>12V-DC, 1700 mA</td>
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<tr>
<td>Electronics:</td>
<td>Dual Processor High Speed Micro Controller &amp; Pulse Width Modulation Amplification</td>
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Move over Microsoft, Thrustmaster and ACT Labs. You all use smaller engines. Was it to save money? Smaller engines generate far weaker force effects reducing the excitement and realism! Don’t be fooled. Bigger names do not mean better products.

Twice the power, stronger torque, better road grip, superior handling, precision steering, quicker response time, and the most rugged racing pedals. This is why we named it “The Ultimate Per4mer® Force Feedback Racing Wheel.”

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Or call 1 (800) 408-4084 to order direct.
Or visit our web site at www.per4mer.com.
Go to #148 @ www.computergranger.com/infolink
9. **Boston Acoustics 635 Speakers**

Coming in at a scant $99, the BA-635s have got to be the sweetest low-cost speakers we've heard yet. The sound is clean, the volume level is respectable, and the setup is simple. It's easy to find desk space for the tiny satellites, and the small subwoofer tucks into any odd corner. The volume knob is on the right speaker, and the whole affair looks way too small to be real. But this system puts out solid, clean sound, has a reasonable bass punch, and can get pretty loud.

**Hardware on the Horizon**

Although there's a bevy of good products to choose from this holiday season, it's always a good idea to keep an eye on the horizon for the next generation of products. Here are a few worth considering.

Intel is hard at work readying its next-generation Katmai Pentium II processors. These will feature Intel's clumsily dubbed Katmai New Instructions (KNI), which should yield improved 3D performance in the form of higher triangle throughput. Game developers will either use Direct3D's transform and lighting (T/L) engine or write custom assembly code to get at KNI. Katmai is scheduled to debut the first quarter of 1999, with initial speed grades of 450MHz and 500MHz.

We've also heard tidbits about AMD's K6-3 CPU, which will integrate the Level 2 cache into the CPU core and allow it to run on its own back bus at CPU clock speed, instead of having to share bandwidth with system memory and run at its speed. We haven't heard much about speed grades, but since K6-2s are now running at 350MHz, we figure K6-3 will probably hit 400MHz when it debuts.
"I find myself continually drawn back to the game to try just one more tactic... To paraphrase Shakespeare's Antony, 'I come to praise Caesar III'.

- Johnny Wilson

Computer Gaming World
SOLDIER
March, march, march... Got to keep on the lookout for the Barbarians. Oh yeah, and rumor has it the Carthaginians may be on the move again. Wait! Is that a camel over there?

PRIEST
I don’t know what the world’s coming to these days. Young people run wild in the streets, forgetting all about the gods. I don’t know where I’m going to find enough Vestal Virgins this year...

- Honor the gods of the Roman Pantheon by throwing festivals and constructing temples – or you may incur their wrath.
- Build, rule, and defend on one screen – no more switching between province and battle screens.
- Use the trade map to connect your city – and its goods – to the rest of the Empire.
1. BLUE'S CLUES:
BLUE'S BIRTHDAY ADVENTURE
PC/Mac CD-ROM, $29.99
Humongous Entertainment, (800) 499-8386
www.humongous.com

HUMONGOUS HAS DONE it again! The folks who brought you PUTT PUTT, FREDDIE FISH, FATTI BEAR, PAHAMA SAM, and SPY FOX have welcomed yet another member into their clan. This year, the company teamed with Nickelodeon to create software based on the Blue's Clues television show.

BLUE'S BIRTHDAY ADVENTURE invites preschoolers to join Blue and her master, Steve, as they prepare for the big day. Once kids have chosen the game they want to play (there are four complete games to choose from—a great value for $29.95), the singing and dancing Steve will appear to help them on their quest. As in the show, the kooky live-action host is superimposed over the gorgeously rich multtexured environment of Blue's world.

Each game includes a variety of activities: Kids can pick out a gift for Blue or make a card, which will be presented to Blue at the birthday party. There are puzzles to solve, noisemakers to pick up, hotspots to click on and, most importantly, clues to find. As kids discover items, store them in their inventory, and eventually figure out how to use them, they'll be rewarded with a clue—indicated by Blue's paw print—which they can record in their Handy Dandy notebook. Three clues and it's off to the Thinking Chair with Steve to figure out the connection between the items. Having solved the puzzle, kids are invited to participate in one of four endings: the party, pizza making, a treasure hunt, or a puppet show.

BLUE'S BIRTHDAY ADVENTURE manages to maintain the distinctive style and gameplay that made the other Humongous titles so successful, while taking on the unique look and feel of Blue's Clues series—quite a feat. For Blue and Humongous fans alike, it's a definite must-have.

2. HEADRUSH
PC/Mac CD-ROM, $30
Berkeley Systems, (800) 234-3088
www.berkysys.com

AFTER CORNERING THE trivia market with the hilarious, adult-oriented YOU DON'T KNOW JACK series, Berkeley Systems has teamed once again with developer Jellyvision. This time, however, the younger generation is on the receiving end. HEADRUSH follows the basic JACK format, with a sarcastic, smart-alecky host guiding up to three players through a series of multiple-choice questions, offering caustic commentary on their selection of subject or choice of answer, and being generally insulting and obnoxious.

The sexual banter of the JACK series has been toned down for the teen audience, but it hasn't been removed altogether. In the version we played, there were still comments such as "It doesn't matter if you win or lose as long as you get to play with yourself" and categories such as "Duckin' Fugly"; so parents should be aware that this is definitely not for younger kids.

The gamer chooses to be represented by one of six icons (our favorite was a green troll with the body of a lizard and teeth that Austin Powers would be proud of). Grossly amusing animated segments introduce each question. In one, the camera zooms in on the zits on a pesty kid's face to reveal the number 10. Bodily functions definitely set the tone for the game, so those who are easily grossed out should beware.

While some of the questions could be loosely called educational ("Which word in the sentence 'Please lick underneath my sweaty ampit' is the preposition?") most are based on extracurricular activities (Question: "What's the best make-out song?" Answer: "Don't Speak" by No Doubt") and popular culture (Leonardo DiCaprio pops up, as does Celine Dion). Berkeley isn't trying to palm off HEADRUSH as an "edutainment" product. It's clearly intended as fun, but kids are sure to pick up some general knowledge along the way.
THE HOLIDAY HOT 100

3. THE D-SHOW
PC/Mac CD-ROM, $35
Disney Interactive, (800) 900-9234
www.disneyinteractive.com

FOR PARENTS WHO HAVE
been forced to watch The Lion
King video one too many times,
here's something from Disney that
both you and your child can
enjoy. THE D-SHOW offers Mickey
Mouse fans of all ages a chance
to test their knowledge of the
Mouse Empire.

The game includes more than
500 trivia questions based on the
animated and live-action movies,
songs and soundtracks, television
specials, theme parks, and charac-
ters that span the entire Disney
history. Kids will particularly enjoy
the Bonus Rounds, which are
made up of visual conundrums:
Casting Call requires you to
match 10 cast members with their
movies; Picture Perfect is a sliding-
tile puzzle featuring a Disney
character; Before and After asks
you to identify a final character or
attraction based on its original
concept art; and Cel-a-vision chal-
enges you to match character
animation cells to their back-
grounds. Be prepared for the "D-
Fibulator" round in which you
must answer True or False to
statements like "In Bolivia, Pluto
answers to 'El Perro Loco.'"

One to three players or teams
can play on one keyboard, and
the basic idea is to score more D-
Bucks than your opponents. This is
the perfect game to cheer up a
holiday gathering. It's accessible
to everyone—kids of all ages will
be able to show off their knowl-
dge, as will grown-ups. And per-
haps more importantly, it won't
offend anyone!

4. FREDDI FISH 3:
THE CASE OF THE
STOLEN CONCH SHELL
PC/Mac CD-ROM, $29.99
Humongous Entertainment,
(800) 499-8386
www.humongous.com

All's not well under the
sea. Someone has stolen the
Great Conch Shell, Uncle
Blinky has been wrongly
accused, and Freddi and
Luther are cut
to find the real
culpit. Kids take on the role of
detective as they guide their fishy
friends through an expansive
underwater kingdom, picking up
clues and grappling with other
characters about the missing shell. Aimed at
kids ages 3 to 8, FREDDI FISH 3 still
holds all the charm of the original:
The game environment is filled
with clickable hotspots, mini-games,
and sing-alongs. And when you've
solved the case but want to play
again, you'll find that all the clues
are hidden in different places.

5. MULAN ANIMATED
STORYBOOK
PC/Mac CD-ROM, $35
Disney Interactive, (800) 900-9234
www.disneyinteractive.com

In this adventure
storybook based on the animated
film, the gamer is enlisted to help
Mushu the dragon find and
deliver five magical scrolls to the
Emperor in the imperial City. As
each scroll is discovered, a portion
of Mulan's story is revealed.

Children can follow Mulan's jour-
ney from her home village to the
army camp, where she disguises
herself as a man, and on into bat-
tle. Activities include a Barbie-
style dress-up gallery, in which
you can select the perfect outfit
for both Mulan and Mushu; a slid-
ing-tile puzzle; various memory
games; a strategy puzzle; a snow-
ball fight; and even a game of
MAHJONG. Ages 6–10.

6. SIMSAFARI
Windows and Mac CD-ROM, $29.95
Maxis, (800) 245-4525
www.maxis.com

SIMSAFARI allows
would-be safari rangers to take
control of their own African
wilderness park and camp. Kids
have to build their park from
scratch, first deciding where best
to locate each species so that
they survive and thrive. Placing
lions too near to antelopes won't
result in visible blood and carnage
(the game is intended for ages 8
and up, after all), but be prepared
for carcasses. Children are intro-
duced to the concept of basic
resource management, as they
build and maintain their tourist
camp, adding amenities as they
can afford them. They'll also have
to deal with varied problems that
include weathering natural disas-
ters and maintaining the satisfac-
tion of the local villagers.
7. **LEGO LOCO**

PC CD-ROM, $29.99
Lego Media, (860) 749-2291
www.lego.com

**Parents whose fondest childhood memories stem from hours of play with an old train set will be glad to hear that Lego Media has come up with a product that may help you transfer some of that enthusiasm to your computer-junkie kids. **LEGO LOCO** enables kids to construct a fully functional train network, featuring three different kinds of engines and six types of carriages, right on their PC. Children can build and expand train tracks over several different landscapes, take control of points and signals, and watch as passengers board and disembark trains. The product also lets kids exchange trains carrying messages, sounds, or pictures with their friends via LAN and Internet. Ages 5 and up.

8. **CURIOUS GEORGE READS, WRITES & SPELLS**

PC/Mac CD-ROM, $44.95
Houghton Mifflin Interactive, (800) 829-7962
www.hminet.com

**CURIOUS GEORGE HELPS first- and second-graders hone their skills in reading, spelling, and vocabulary as they join the mischievous little monkey on an adventure that takes them to the editorial department of a local newspaper. Children must help George with various tasks based on the school curriculum. Activities include a WHACK-A-MOLE-type game, in which George must spell out a word by hitting alphabet muffins as they rise; a selection of platform and maze spelling games; and a variety of fill-in-the blank writing assignments. The game includes a Parental Control tool, which allows adults to adjust the difficulty level and focus of each activity.**

9. **STARFIRE SOCCER**

PC/Mac CD-ROM, $29.95
Purple Moon, (888) 278-7753
www.purple-moon.com

**THE WORLD CUP MAY BE over, but soccer is still on the minds of the girls of Whistling Pines High School. Taking its “Friendship Adventures” series one step further, Purple Moon’s latest product is a soccer game designed specifically for girls. In STARFIRE SOCCER success is not necessarily about winning the game; it’s more about the experience of being part of a team. Following Ginger and her friends on and off the field, the gamer will learn all about the different characters’ personalities and will ultimately have to decide who makes the cut. Ages 8–12.**

10. **SMALL SOLDIERS: SQUAD COMMANDER**

Windows 95 CD-ROM, $29.95
Hasbro Interactive, (508) 921-3700
www.hasbro-interactive.com

**FANS OF THE MOVIE can now exercise control over either the community-loving Gorgonites or the militant Commando Elite in this 20-mission action/strategy game targeted at boys ages 8 and up. Kids will be thrown into one of two different plots, depending on which side they choose to lead. Either way, gamers will have to defend themselves and their neighborhood against enemy fire, while solving problems to complete each mission.**

There are plenty of pickups hidden throughout the game field, including throwable explosives, health and weapon upgrades, and extra team members, but the ground is also laden with lethal traps. The user-friendly interface helps to make this a good first-time strategy game for young kids.
HALF THE BATTLE IS GETTING A HEAD

THE OTHER HALF IS KEEPING YOURS

HEDZ
HEAD EXTREME DESTRUCTION ZONE

Battle across 26 awesome combat arenas to collect over 200 Hedz all with unique abilities - some ballistic, some just downright bizarre - in this genre busting, surreally funny, full-on 3D game. So completely original... it will mess with your HED!

See HEDZ @ www.HEDZ.com

Play “Match the HEDZ” game and win great prizes!
Stocking Stuffers

1. Diamond Rio
PMP300 Portable Music Player
For Windows 95/98/NT, $199
Diamond Multimedia, (800) 468-5846
www.diamondmm.com

If you're a music buff with an internet connection, you've probably heard of MP3 (MPEG Layer 3) files. These are highly compressed digital audio files that can be downloaded and played on your PC at near-CD quality. Much of the available MP3 music consists of garage bands and bootlegs, but a number of music labels are now experimenting with selling individual songs on the Net. Instead of paying $14 for a CD to get one song, you can just download the individual song for a buck.

The biggest problem with MP3 tunes has been that you needed a computer to play them. Now Diamond has developed the Rio PMP300 Portable Music Player, which lets you take MP3 files on the road in a player about the size of a pager.

Because the files are stored in solid-state memory, the device is completely shock-resistant. You can jog or operate a jackhammer without worrying about your Weird Al classics skipping. It's like a minidisc, but without the moving parts to wear out.

In addition to finding music on the Net, you can also use the included software to convert tunes from your personal CD collection to MP3 format. Thus, you can create mixes of your favorite songs, store them on your PC, and download them to the Rio. Diamond claims that the 32MB of memory will be good for storing about an hour's worth of music. If that's not enough, you can bring along more tunes on Smart Media cards.

2. Lego Mindstorms Robotics invention System
Windows 95 CD-ROM, $200
Lego, (800) 510-5773
www.legomindstorms.com

Somewhere in Legoland beats the heart of a computer gamer. The makers of the world's best-loved building blocks have figured out how to hook up motors and a processor to a Lego brick, so you can control robotic Lego creations from your PC (via infrared port). Although Lego envisions these things for kids, the base price of $200 suggests that adults—namely, you guys—are more likely to grab onto them. The basic Mindstorms kit includes 700 pieces, including touch sensors, a light sensor, motors, gears and a processor. You can build a variety of robots to perform tasks like dealing cards or freaking out your cat. More elaborate robots can be constructed using other Lego pieces or one of the Mindstorms expansion kits ($50 each). We can't wait to see the evil contraptions that await us next year in game developers' offices.

3. Create & Share Camera Pack
Windows 95/98, $149
Intel, (800) 538-3373
www.intel.com/createshare

Despite a name that seems to have come from Barney the Dinosaur ("Create and share, kiddies!") Intel's Create & Share Camera Pack is a cool little gadget. This tiny camera plugs into your PC's USB port and lets you make live video phone calls via the Internet. Make video calls to relatives across the country or use it on a home LAN so the family can remember what Dad looks like when he hasn't left his basement flight-sim cockpit for days. The package includes an impressive bundle of software, including movie and still-video capture programs, a Web page creator with video clip support, and an image organizer. There's even a set of "video"
You sweat.
You suffer.
You sacrifice.
At the next PGA Championship, don’t stand amid the gallery. Sit atop the leaderboard. Play in the PGA Championship at San Alene, or choose from six other world-class courses. You can even join an on-line tournament. That’s PGA Championship Golf—1999 Edition, where unparalleled mouse-based swing technology and incredible 3D graphics recreate the sport of golf from a casual round to professional competition. Quit watching and start playing.

PGA CHAMPIONSHIP GOLF
From the designer of Links 386
www.sierrasports.com

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Hey, why are you trying so hard?

Sit down and play the sport. We know sports. We love sports. And we've done our research the only way there is — by sweating, suffering and sacrificing in competition. Our technology is to competition what Marino's quick release is to football. We'll put you out there. But your victories won't come easy. Because this is the big leagues.

Look left. Fire right. Six points. That's how fast and unpredictable life is in the NFL. Live a little.

NFL Football Pro '99 lets you make the decisions on and off stunning 3D fields. Draft your players. Set your schedule. Cut the price of tickets. Battle the rest of the league online. If all you want is action, forget team management and lay a hit on someone in the stunning 3D arcade mode. Look for NFL Football Pro '99 customized for your favorite team. Finally, you're calling all the shots.
Climb in and go door-to-door with 1998's fastest drivers including Earnhardt, Labonte and Martin. The NASCAR Winston Cup, the NASCAR Busch Grand National and the NASCAR Craftsman Truck series all in one package. Choose a stock car or truck and race on 34 of NASCAR's toughest tracks, including 11 new circuits never before available. From Talladega's 190+ straightaway to running up through the esses at the Glen, to the tight oval at Martinsville. Pure racing. Take the challenge: Catch us if you can.
His next move would've been his last. But you overlooked the wind factor. You stalked him all morning. Fully immersed in a 3D world that triggered memories of your first successful hunt. Sierra Sports has teamed with Field & Stream to bring you the most challenging deer hunting sim on the market: Trophy Buck. Choose your location, fire arm and ammunition, or bow and arrows, and even the weather. Then track deer that react instinctively to your every move. And the best part - hunting season never ends. Shh...

FIELD & STREAM
TROPHY BUCK
From the makers of Trophy Bass.

Sierra Sports
Play the sport

Sierra On-Line, Inc.
YOU’VE NEVER SEEN AN ALL STAR LINEUP LIKE THIS.

www.sierrasports.com
5. Computer Gaming World


Computer Gaming World,
(800) 637-4450
www.computergaming.com

THE HOLIDAYS ARE APPROACHING

rapidly and, as always, that means we can count on several things at the CGW office. It means that staffers will be asking Santa for new NERF weapons for those drunken office parties. It also means that CG-ROM Assistant Editor Thierry "Scooter" Nguyen is going to go home to open his presents. There's just one problem this year: We won't let him. We've decided that Scooter can't go home until each and every one of you agrees to subscribe to Computer Gaming World, the world's first, best, and most reliable gaming magazine. It's simple, really. Buy a subscription for yourself and all your friends, and you'll receive a monthly dose of the best and most honest reviews, previews, features, strategies, and tips in the business. Don't buy it, and Scooter spends a long, lonely Christmas vacation at the office with only his force-feedback joystick to keep him company.

CGW has been dish- ing out the straight dope for 17 years, and we've only just begun. Who are you gonna trust? Some faux-hipster, goateed poseur who think the greatest game of all time comes out every year, or the professional, steely-eyed staff of CGW? Do the right thing. Do it for the fanatic gamer in your life. Do it for Scooter.

4. Redshift 3

Windows 95 and Mac CD-ROM, $49.95
Piranha Interactive Publishing,
(602) 491-0500
www.piranhainteractive.com

THE EDITORS AT CGW
normally shun multi-
mediocre products because they take up space on our hard drives that could better be used for games. But we'll admit to a weakness for REDSHIFT 3 because, despite some flaws, it's what multimedia should be: something fun that you can actually do with your computer. The latest in a line of astronomy programs for both the Mac and PC, REDSHIFT 3 lets you create your own virtual tour of the stars. You can check out the destruction wrought by supernovas, or view Saturn's awe-inspiring rings from the same perspective as the ancient Egyptians. Cutting-edge technol-
ogy this isn't, and some of the screens load a little more slowly than we'd like. Still, the tuto-
rials are well done (one female narrator has a delightful British accent), and now that space travel is actually cool again, putting it under the tree is likely to elicit a surprised smile.
3Dfx

THE POWER OF 2

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Getting Great Gifts for Gamers

You have gamers in the family, and you know nothing would make them happier than to find some hot new entertainment software under the Christmas tree. But your knowledge of computers basically boils down to knowing that PCs and Macs are different, that you've lost more friends to the World Wide Web than to marriage or children, and that some guy name Gates is apparently out for world domination.

You bravely walk into your local software store, only to have your senses assaulted by brightly colored boxes of all shapes and sizes. Everything from tanks and airplanes to dinosaurs and severed limbs vie for your attention. How on earth do you choose the right gift?

The Hardware Choices

The first thing you'll need to determine is what kind of computer your gift recipient has—and how it's equipped. Of course, doing this without giving away why you're asking will take some smooth talking. You might express interest in getting a computer of your own and ask what kind of system he or she has for comparison.

Is it a PC, running Microsoft Windows, or a Macintosh? This determines in which section of the store you'll need to shop. PCs and Macs use different programs, although a very few games will include both PC and Mac versions on a single CD-ROM.

Next, you need to determine which operating system (the program that controls how the computer works) your recipient uses.

On a PC, this will normally be Windows 95/98, Windows 3.1, or MS-DOS. On a Macintosh, it will be System 6, System 7, or Mac OS 8. Check the system requirements on the box of the product you're buying to determine which operating system it's designed for.

Most new games are designed for Windows 95 and 98. If the person you're shopping for has a PC and is still running MS-DOS or Windows 3.1, a system upgrade to Windows 98 might be the gift of choice instead of a game. Note that MS-DOS games will run on Windows 95 systems, but setting up the computer to run them properly can be a complex task.

Unless the person you're buying for is very computer savvy, it's best to stick to Windows 95 games. If the person you're shopping for has Windows 98, you'll be relieved to know that Windows 98 uses the same software as Windows 95. If a game lists Windows 95 as a requirement, it should work fine on Windows 98.

Other computer specifications that you should determine and check against the game's system requirements include the following:

- The amount of RAM (generally 16MB, 32MB, or more)
- CD-ROM speed (4x, 8x, or faster)
- The type of processor (486, or the faster Pentium and Pentium II [in the case of a PC]; or 68030, 68040, or PowerPC [in the case of a Macintosh])
- The speed of the processor (usually a number ranging from 90MHz to 450MHz)

It's fine if you have more than what the box lists for the game's requirements; a game designed for a 133MHz Pentium with 16MB RAM should work fine on a 266MHz Pentium II with 64MB RAM.

Finally, if the person you're buying for owns a PC, you'll need to find out what kinds of add-ons the system has. Almost all gamers will have the SuperVGA-graphics capability required by today's PCs, but many of today's hottest games require a 3D graphics card as well. You'll generally find two graphics requirements listed: Direct3D or 3DFX. Direct3D games will work on most computers that have 3D cards, but games that specify 3DFX will generally only work well if the computer is equipped with a 3DFX Voodoo or Voodoo² card.

A mouse is de rigueur on today's PCs, but you will need to determine if the game requires a joystick or a gamepad. If so, does the person you're buying for have one? At least there's one less add-on hassle. If you buy a Windows 95 game, you shouldn't have to worry about what kind of sound card your gift recipient has.

It Takes All Kinds

Now you know what type of system the person you're buying for has, so you can tell if a game will work on it. But you still haven't actually chosen a game! We've listed a variety of interests below, along with the genres of games that usually appeal to folks with those interests. Once you determine the genres to which your gift recipient would likely gravitate, check the appropriate section of our "Holiday Hot 100" for some can't-miss games.

<table>
<thead>
<tr>
<th>INTEREST</th>
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<tbody>
<tr>
<td>Aircraft, military aviation, ships</td>
<td>Simulations</td>
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<td>Auto racing, motorcycles</td>
<td>Racing, Action</td>
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<tr>
<td>Brainteasers</td>
<td>Classics &amp; Puzzles</td>
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<tr>
<td>Card games, classic games</td>
<td>Classics &amp; Puzzles</td>
</tr>
<tr>
<td>Cars and driving</td>
<td>Racing</td>
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<tr>
<td>Children</td>
<td>Kid's Software</td>
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<tr>
<td>Computers</td>
<td>Hardware/Santa's Other Surprises</td>
</tr>
<tr>
<td>Dungeons &amp; Dragons</td>
<td>Adventure, Role-Playing Games</td>
</tr>
<tr>
<td>Fast-paced action, violence</td>
<td>Action</td>
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<tr>
<td>Football, baseball, golf</td>
<td>Sports</td>
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<tr>
<td>Mental stimulation</td>
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<tr>
<td>Military History</td>
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<td>Politics</td>
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<tr>
<td>Science Fiction</td>
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<td>Sports</td>
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<tr>
<td>Beanie Babies</td>
<td>(Forget computer games—we suggest an intervention)</td>
</tr>
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The positional 3D audio that gives new meaning to the phrase DEAD CENTER.

EXTREME PCI 3D AUDIO FOR GAMING AND ENTERTAINMENT.

"THIS IS BY FAR THE BEST 3D/PCI SOUND BOARD I'VE SEEN YET!"
-- PC Multimedia and Entertainment, Seal of Approval, July 1998

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<th>DIAMOND MONSTER SOUND MX300</th>
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<th>CREATIVE LABS SOUNDBLASTER LIVE!</th>
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<td>Stereo Voices</td>
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<td>$99</td>
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<td>$199</td>
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</tbody>
</table>

**Monster Sound Awards**

Enter the Monster Sound MX300 Sweepstakes by visiting our website at http://www.diamondmm.com/monstersound300

No matter where you turn, Diamond’s new Monster Sound MX300 audio card has you surrounded. Pop on your headphones or plug in up to 4 speakers and Monster Sound renders the positional audio trapped inside the most realistic, adrenaline-pumping games. Winner of numerous awards, it sports a 320 voice DLS compatible synthesizer and 96 independent hardware-supported audio streams, so you’ll hear each deep rumble to every high-pitched shriek. It also includes the award-winning Vortex2, accelerating Aureal’s “A30,” Microsoft DirectSound and DirectSound 3D, which are featured in over 100 of today’s 3D games. Set up your speakers and get a full home theater experience with Dolby Digital support. Or use its cutting-edge MP3 software tools to download Internet music and create your own MP3 files. Of course, you also get full support for DOS, Windows® 95/98, and Windows NT operating systems. To top it off, a variety of 3D games, DVD samples and MP3 clips are included. So pick up Monster Sound today and let your ears pick up 360° of sound.

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Go to #209 @ www.computergaming.com/infolink
Lap Dance
Copping a Feel of the Hottest PC Laptops
by Denny Atkin
Photos by Michael Falconer
Are laptop PCs good for gaming? Getting straight to the point, the answer is yes…and no. If you’re into wargames, strategy games, adventures, RPGs, and puzzle games, you can find hot-rod laptops that will give you a good gaming experience no matter where you travel. But if sims, action, or sports are your thing, you’ll need to be very selective in choosing a machine or you’ll find that your expensive new laptop delivers only a passable gaming experience. The good news is that we’ve seen at least one laptop designed, in part, with gamers in mind—something we hope starts a trend.

3D: Generation Last

The problem with gaming on today’s laptops boils down to one factor: 3D technology. Decent 3D technology has finally made its way into portable computers, but laptop 3D lags at least a generation behind the 3D cards you’ll find on desktops, and that’s bad news for demanding gamers. The best laptop 3D cards approximate the performance and quality of an ATi Rage Pro card. If you’re looking for Voodoo® or RIVA TNT performance, you’ll have to wait a generation or two. And to get even that level of performance, you’ll need to buy a top-of-the-line laptop.

Nevertheless, many of us need a laptop. We have work to do on the road, or we just can’t go a day without checking our email, playing in our online fantasy football leagues, and reading the erudite, reasoned discussions in the gaming newsgroups. So if we do have to drop the bucks on a portable PC, we might as well find one that we can have fun on too, eh?

In this feature we’ll take a look at four laptops that have what it takes for various segments of gamers. But first we’ll take a look at the qualities you should look for in a gaming laptop.

Speccing Out Your Laptop

What should you look for in a gaming laptop?

Let’s take a look at the minimum specifications, as well as some features that can make the system more useful.

Video

If you play primarily 2D games, you can get excellent performance for under $2,000 by buying a fast Pentium MMX laptop with only 2D video. But be warned: Adventure, strategy, and RPG games are starting to make the transition to 3D, and a 2D-only laptop might not be good for games that ship in late 1999.

A better move—if your budget allows—is to check out a laptop with 3D video support. But proceed carefully here, too. Even if a laptop boasts lofty specs, such as AGP and Direct3D support, that doesn’t mean it’s going to be good for games. 3D chips like the S3 VIRGE MX are such poor performers that many 3D games will revert to 2D mode if that chip is present. Other laptop chips haven’t seen driver updates for new versions of DirectX and won’t appear as 3D cards to newer games. Check out the reviews on the pages that follow for a look at the performance of a number of laptop video chips.

As for laptop screens, there are two types of LCD screen available: dual scan (DSTN) and active matrix (TFT, or thin film transistor). DSTN screens are poor choices overall. They refresh very slowly, and moving objects leave smeared trails on the screen, so they don’t handle game display well. And they’re not any better on serious stuff, since fuzzy text and ghosted images make for a display that’s harder on the eyes. Go for a TFT screen, which is sharp and can handle fast motion onscreen.

Unlike monitors, laptops actually use physical pixels on the screen. This means the laptop will always display a single resolution. If you run a 640x480 resolution game on a laptop with an 800x600 screen, it may appear in a letterbox format in the center of the screen or it may be stretched to fill the screen. This stretching is done by doubling occasional pixels, and can result in very jagged graphics and hard-to-read text. Check your laptop and see if it allows you to manually toggle the stretching on and off. This effect isn’t as pronounced on a 1024x768 screen and some newer units use an antialiasing scheme to avoid the problem.

Today’s laptops generally have a minimum resolution of 800x600 pixels, while some high-end models offer 1024x768. If you have good eyes, the 1024x768 models provide more screen real-estate for strategy games that support higher resolutions (and that boring productivity stuff). But be aware that you’ll probably end up running action and simulation games in lower resolutions to obtain a playable frame rate.

Processor and Memory

As it always is the case with games, the faster the processor the better. However, most newer games that have hefty processor demands also require 3D graphics to get good performance. There’s not a huge difference between the speed of a Pentium MMX/266 notebook and a Pentium II/266 when you’re running STARCAST or FALLOUT. Of course, if action or sims are your bag, then a Pentium II/266 or 300 is the processor of choice—if you have a fat wallet.

As for memory, you’ll want at least 32MB RAM for a Windows 95 system and 64MB RAM on a Windows 98 notebook. More memory is almost always better, and this is doubly true for notebooks. When Windows runs low on RAM it swaps data out to your hard disk, which eats battery life. Bumping up to the next level of RAM can not only make your games run smoother, it can also...
LAPTOPS

give you more time between battery recharges. Also note that while memory upgrades can be quite expensive from proprietary notebook manufacturers, cheaper third-party RAM is available from companies such as Kingston (www.kingston.com) and CDCE (www.cdce.com).

Miscellaneous Specs

There are a number of other components to consider when deciding which notebook to purchase. Perhaps the most important component—one that's crucial to success in so many games—is mouse pointer control. Although we've never found a notebook pointing device we truly liked, some are definitely better than others. It's unfortunate that trackballs—the best choice this side of a mouse for gaming—are rarely available anymore, even as options. Our next choice is the eraser-style trackpoint found on IBM, Toshiba, and some Compaq units. Touchpads just don't offer the precision necessary for selecting units in real-time games. Of course, you should also plan to pack an external mouse and use it whenever possible.

Most notebooks ship with at least a 24x CD-ROM, so performance isn't a problem. However, you may want to look for a model that allows you to connect a CD-ROM and floppy drive simultaneously. Also, avoid external CD-ROM units, except for the kind that physically attach to the bottom of a notebook. With the humbly small amount of space you're allocated on today's airliners, you'll never find a spot for a Discman-style external drive.

One of the big dilemmas with notebooks in years past was finding a way to attach a game controller. Machines with joystick ports were few and far between. The units that did have them generally put them on port replicators, which weren't exactly meant to be portable. The good news is that the vast majority of new notebooks—including all the units we tested—have at least one USB port. If you're running Windows 98 (Windows 95's USB game-controller support is hosed), just plug in a USB joystick or gamepad and you're set. If you have legacy hardware you want to use, such as a set of flight controllers, go to www.fcenter.com and check out the JC Designs Gamecard Pro, a PCMCIA card that adds a 15-pin joystick port.

Finally, consider the battery setup. How long are you going to use your machine on battery power? Remember that running a game pretty much cancels out most power-saving routines, which depend on slowing the system at idle moments. In most games, there are no idle moments. Even the huge base battery available for Micron's GoBook2, which can last up to eight hours if you're just typing in WordPerfect, dies after about four and a half hours running F22 TOTAL AIR WAR. If you use your notebook only for short periods of time—hour-long commutes or cruise flights—a single battery is plenty. But if you run it constantly during cross-country flights, look for a unit that supports multiple, simultaneous battery installation.

Finally, you should carefully consider why you're buying a gaming laptop in the first place. If you think a hot laptop is a cool idea because you can network it with your desktop and use it for multiplayer games when you're not traveling, consider this: For about the price of a top-of-the-line Pentium II notebook with a 3D card, you could purchase a low-end notebook and a Pentium II desktop system. Whenever Intel ups the specs on notebooks processors, you can find the low-end being cleared out for under $1,500. And now that the low end is a Pentium-MMX4200, even a bargain laptop is no slug. If you can be happy playing games that aren't graphics intensive, enjoy the budget prices on low-end notebooks PCs and invest the savings in a hot desktop rig for the home network—or a Hawaiian vacation.

Dell Inspiron 7000

From the looks of the Inspiron 7000's specs, it appears that Dell has covered all the bases for the gaming market. It has the fastest processor available for notebooks computers, the Pentium II/300. There's plenty of RAM, 64MB expandable to 384MB. And the missing link is here: The notebook comes with an 8MB ATI Rage Pro XT graphics card, which offers good 3D performance (about the level of the original 3Dfx Voodoo chipset).

You'll appreciate the 3D graphics in all their glory on Dell's 15-inch LCD screen, which sports a viewable area as large as some 17-inch monitors. The screen is actually larger than the main portion of the notebook; it has a "lip" that wraps around the lower part of the unit. The screen supports 1024x768 resolution and is sharp and bright. But my favorite aspect of this screen is that it antialiases lower-resolution displays when it stretches them. It's the only high-res laptop display we've seen where you can stretch a game to fill the screen without getting ugly text and jagged edges. The feature list doesn't stop there, though. Sound comes via a...
PCI-bus ESS Technologies Maestro-2 chip, which includes hardware wavetable support for good-quality MIDI music output. There's a welcome volume dial on the side of the unit. As is the case with most notebooks, the speakers are pretty anemic compared to even inexpensive desktop units, so you'll want to attach a set of external speakers when you're gaming at home.

In addition to an SVGA output, the unit also has composite and SVideo outputs, which can be connected to a television or VCR. Quake II on the family big-screen TV, anyone? A single USB port on the back of the unit allows you to connect a USB game controller. If you need to connect a 15-pin game controller, you'll have to use a PCMCIA gamecard.

The keyboard is a full 11 inches wide, and the keys have a good, deep throw. The Synaptics touchpad is good—as far as touchpads go—with better precision than most, but you'll probably still want to use an external mouse when you have room.

The unit I tested had a storage module that combines a floppy drive with a 2x DVD-ROM. When you order a unit equipped with DVD rather than CD, Dell includes a hardware DVD decoder on the system board. While there aren't many DVD games at present, this capability is great for watching movies while traveling. The storage module can be removed to add a second battery, doubling battery life to nearly seven hours.

All this would be impressive in any notebook, but in a unit that sells for $3,499, we were blown away. It's still rich for your blood, don't despair. In the past, most notebook manufacturers have offered only a couple of factory-defined configurations. Dell is building Inspirons to order, so you can pop up the company's Web page (www.dell.com) and specify your own CPU configuration, memory, hard-disk size (up to 5GB), CD or DVD, and screen size. An Inspiron 7000 with a 266MHz Pentium II, CD, and 13.3-inch screen will run about $2,699.

The only significant downside to the unit is its weight and bulk—all this power weighs in at a hefty 9.2 pounds. But considering that it truly matches the power of many desktop gaming rigs, I'm willing to look at it as free shoulder muscle exercise. Kudos to Dell for putting together a unit that doesn't force gamers to compromise.

**Micron GoBook2**

Pentium II/266, 64MB RAM, 3.2GB hard drive, 2x4 CD-ROM, 12.1-inch display; 4.4 pounds. Five-year warranty on memory and CPU, one-year parts and labor warranty on other components (three-year parts and labor warranty, $199), $2,949 (base battery additional $298).

Micron, (800) 209-9686
www.micronpc.com

The GoBook2 is worth a look if you want a powerful but light notebook or maximum battery life. Packed a 266MHz Pentium II and all the usual bells and whistles into a slim, 4-pound package, this unit is no lightweight in the power department.

And with an optional base battery, which adds a pound of weight but gives 4 1/2 to 8 hours of power on top of that provided by the internal battery. It's the perfect choice for overseas flights or camping trips.

Unfortunately, while the GoBook2's NeoMagic graphics chip claims Direct3D support, you couldn't convince any of the games we tested of that. As far as the test suite was concerned, it was purely a 2D chip. We tried the latest drivers and tried updating to DirectX6 to no avail. NeoMagic's Web page proudly touts support for DirectX2 and Direct3X, which could be the problem. This brings up another dilemma with notebooks: You don't generally see the frequency of video driver updates that you find for desktop cards.

It's a shame the 3D support was unworkable, because the rest of the unit's design is top-notch. A single bay lets you plug in a 2x4 CD-ROM drive, floppy, or internal battery. Note that you'll need the optional base battery to use your CD-ROM drive on battery power. Micron includes a cable that lets you use the floppy drive externally.

The keys have a deep throw, giving the GoBook2 the most comfortable typing experience of the notebooks we've tested. Three programmable keys sit next to a wonderful invention—a one-touch speaker on/off button. You'll love this simple but marvelous device when you forget to plug in your earphones before launching Quake at full volume on a night flight. There's a good amount of wrist rest area surrounding the touchpad pointing device. Even the unit's case finish is impressive—it's a notebook that wouldn't be out of place in Darth Vader's study.

If battery life or maximum portability are your top concerns, and you can live without 3D hardware support, the GoBook2 is worth a close look.
It's not the size of your weapon that counts...
...whatever!

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ALISON IS HAVING THE ULTIMATE BAD HARE DAY.
**The Ultimate Controller for the Road?**

USB game controllers don't exactly glut the market at the moment, but there's one that is particularly suited for gaming on the road. Microsoft's SideWinder FreeStyle Pro includes a USB adapter and functions well on the laptops we tested. The FreeStyle Pro is intriguing as a portable device because it can function as a joystick in its motion-sensor mode, yet it's as small as a gamepad. Add its gamepad-emulation mode and you have a flexible controller solution for when you need to travel light. For more info on the FreeStyle Pro, see our October issue (CGW #171).

The latest version of the SideWinder Precision Pro joystick also includes a USB adapter, but it's a bit bulky to take on the road.

---

**Toshiba Satellite Pro 335CDT**

Pentium MMX/266, 32MB RAM, 4GB hard drive, 20x CD-ROM, 12.1-inch display, 6.5 pounds.
Three-year parts/one-year labor warranty.
$1,799 (street), $1,599 for dual-scan model.
Toshiba, (888) 598-7802
www.computers.toshiba.com

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**On the Bench**

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<tr>
<th>Computer</th>
<th>3D GameGauge</th>
<th>F22 ADF</th>
<th>QUAKE II, 640x480</th>
<th>QUAKE II, 320x240</th>
<th>CPU WinMark</th>
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<tr>
<td>Compaq Armada 7800</td>
<td>n/a</td>
<td>35.05*</td>
<td>15.1*</td>
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<td>Dell Inspiron 7000</td>
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*Software graphics, no 3D acceleration

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<th>Business Disk</th>
<th>CD-ROM</th>
<th>Battery Life</th>
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<td>1,080</td>
<td>970</td>
<td>3 hr. 14 min.</td>
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3D GameGauge Breakdown for Inspiron 7000

| TUROK               | 21.4        |
| INCOMING            | 28.09       |
| FORSAKEN            | 36.71       |
| QUAKE               | 27.2        |
| QUAKE II            | 24.1        |
| F22 ADF             | 31.85       |
| 3D GameGauge score: | 169.35      |

**How We Tested**

For this feature we modified our usual testing methodology to better suit notebook hardware. The Dell Inspiron 7000 was the only notebook we tested that could successfully complete the 3D GameGauge tests, so for the other notebooks we ran F22 ADF and QUAKE II in software graphics mode to get an idea of relative 2D performance.

Most notebook power-saving routines rely on idling the CPU and other components when you're not actively using the PC, such as when you're trying to decide what to type next. Games rarely let the computer get any idle time—they're always pushing the CPU playing sound and often accessing the CD-ROM and hard drive. So to test battery life under north gaming conditions, we installed 3D GameGauge from the CD and then repeatedly ran the demos in the suite until the units powered down. Thus, the numbers you see are worst-case scenarios, and you should find the units will stay up significantly longer if you're just typing in Word or answering email.

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switch to prevent inadvertent power off. The keyboard has a good wrist rest and a central pointing stick; above it are the best-sounding stereo speakers of any unit in this roundup. The headphone jack is conveniently placed on the side of the unit next to a volume-control dial. The unit is bundled with a 56K PC-card modem. The unit includes integrated floppy and CD-ROM drives, so you don’t have to swap one out to use another—a nice touch.

Toshiba bundles a wide variety of software with the unit, some interesting and some superfluous. Out of the box, the Start menu scrolls off the screen, so plan to spend a bit of time cleaning up the hard drive.

On the video front, since the C&T graphics chip doesn’t make any claims of 3D capabilities, it’s not setting you up for disappointment. Performance is fine for games like STAR CRAFT and TOTAL ANNihilation, and business software performance is fine.

The 333CDT doesn’t shoot for the stars, but what it does, it does well. If you’re looking for a reasonably fast notebook for productivity and a bit of gaming on the side, Toshiba delivers here at a moderate cost.

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**Compaq Armada 7800**

Pentium II/266, 64MB RAM, 8GB hard drive, 24x CD-ROM, 14.1-inch display; 8.6 pounds.

Three-year parts and labor warranty.

$4,275 (street).

Compaq, (800) 345-1518

[www.compaq.com](http://www.compaq.com)

---

I wanted to love the Armada 7800. After all, on top of the Pentium II/266 processor, huge 14.1-inch screen, and built-in everything, the unit also promised a 3D-accelerated graphics chip sitting on an AGP bus. This seemed like it could be the ultimate gaming notebook.

Alas, it was not to be. It turned out that Compaq had put an S3 VIRGE MX "3D" chip on the Armada’s AGP bus—the equivalent of letting a Ford Fiesta loose on an Indy car track. When I tried to run 3D GameGauge on the unit, INCOMING posted a whopping 12.8 fps, while Turok actually took more than a second to render each frame. F22 ADF would run in 3D mode, but textures that were supposed to be transparent were black, so sun glare would produce a series of opaque rectangles.

In another bad design decision, Compaq put the keyboard right up against the front
Oh, Say Can You CE?

If you’re pricing notebooks not because you spend much time gaming on the road, but because you need a productivity unit for travel and you figured you could use it as a second gaming rig at home, let us suggest an alternative. Why not get a Windows CE unit, which offers Web and email access, Word and Excel, and basic gaming functionality, and then spend the rest of the money on a full-blown desktop PC for the home network?

NEC’s MobilePro 750C is the first Windows CE machine I’ve seen that I really enjoy using. Instead of tiny chiclet keys or unreliable handwriting recognition, the 750C includes an actual touch-typeable keyboard. It’s a little cramped, but after about 15 minutes of practice I was up to about 60 words a minute.

For your on-the-road productivity, the unit includes stripped-down versions of Word, Excel, Outlook, and Internet Explorer. There’s a built-in 33.6K modem, 16MB of RAM, VGA output, and an 8-hour rechargeable battery.

As for gaming, while Windows CE can’t match the selection and quality of games found on the PalmPilot, there are a growing number of available games (mostly arcade and adventure). You’ll find many never games support the 750C’s 256-color, 640x480 screen. The games are mostly arcade games and adventures, but with the MobilePro’s street price of under $800, you’ll have plenty of cash left over to spend on a hot desktop PC.

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What a difference a month makes. Last issue, we took a look at Matrox’s Mystique G200 and found it to be a solid 2D card with very respectable 3D performance. Since then, several new 3D accelerator chips have shipped that, at least at the superficial performance level, leave the G200 chip far behind in terms of 3D. They even outstrip it in 2D performance.

In this issue, we’ll take a look at some of the brand-new boards that will take us to the next level in 3D acceleration. An interesting trend in 3D graphics is emerging: the use of low-cost, 16MB boards. It wasn’t all that long ago that PCs shipped with only 16MB of RAM. Now we’re seeing graphics cards with 16MB of local video memory for well under $200—thanks to the wonders of commodity pricing. In fact, one board in our roundup supports a whopping 32MB of RAM! Read on for more...
Shipping Products

These boards represent products that were shipping or about to ship when we did our testing. They include three RIVA TNT boards, a couple of Banshee products, the Hercules Terminator Beast, and the new boards from Matrox.

Matrox Marvel G200

The Marvel G200 is just a bit slower than the Millennium G200, which Matrox attributes to the use of slower SDRAM on the Marvel. Despite the lack of speed, this card is quite versatile. Think of it as the sport utility vehicle of graphics cards. It won't get you there as fast as a funny car, but you can really load it up.

Inside the Marvel G200 package is a blue, contoured plastic box that connects to the back of the Marvel G200. The box contains a new three-foot cable, makes connections to camcorders, and cable TVs much easier. This is the only thing you might want to add to it is a hardware DVD decoder, available separately. Matrox tosses in a copy of Avid Cinema, a handy nonlinear video-editing package formerly available only on the Macintosh.

Until now, the ATI All-in-Wonder Pro had the field virtually to itself, but the Marvel G200 ups the ante for this type of Swiss Army Knife product. And if the 3-D performance isn't quite up to the competition, you can always toss in a Voodoo² card.

Marvel G200 TV, $349 for 16MB; $299 for 8MB. Matrox, (514) 822-6320. www.matrox.com

Pros: Pretty good overall performance; lots of video goodies added in; good image quality; nice video editing package.

Cons: Performance doesn't stack up well against the competition.

Matrox Millennium G200

The Millennium G200 is a testament to how fast this industry moves. A year ago it would have easily been the top performer. This year, it's an also-ran, barely squeaking ahead of the RIVA 128zx-based V3000ZX card. Even during the summer of 1998 it was the performance leader in 2D/3D graphics accelerator for consumers. So it's really a fast board—it's just that it's slower than all the others out there. With a 3D GameGauge score of 293 on CGW's 450MHz Pentium II testbed, the Millennium G200 is one of the weakest game performers in the roundup. We had to use Matrox's OpenGL Direct3D wrapper, since the company's ICD wasn't quite ready, so the score may improve a bit in the future.

However, given the G200's performance in other Direct3D games, we don't hold out hope for much improvement.

The Millennium G200 does show good image quality, especially at true-color resolutions. However, even the Matrox's vowed image quality falls down just a bit, as evidenced by 3D WinBench 98's trilinear mip-mapping quality test. This version of the G200 supports up to 16MB of SGRAM and has a 250MHz RAM DAC, which makes it a good solution for professional 2D graphics users who want decent 3-D performance. The Millennium G200 would make a good partner for a Voodoo² card, but it really can't keep up with the new competition.

Millennium G200. $229 for 16MB; $149 for 8MB. Matrox, (514) 822-6320. www.matrox.com

Pros: High resolution 2D support; good add-ons; good image quality.

Cons: Slow when compared to other cards; even its 2D performance is no longer leading edge.
Who will capture the Season 3 crowns? We offer some "sure shots," and long shots, for your consideration. But don't take our word for it - drop in, tune in, or log on to see who wins!

**Favorite: EVERLAST**
Hailing from Stockholm, Sweden, Victor "iGom" Martyn must overcome vast distances, time zone differences, and a strong field of challengers to take the title. Even so, this Battle.net deity and top-ranked PGL strat player is our odds-on favorite in the Season 3 RTS competition.

**Dark Horse: DuDeY**
Competing under the name "TheInsaneCow" in Season 3, Daniel "DuDeY" Lykins has actually beaten Starcraft demigod Agent?q at Starcraft once. He'll have to do it again to make it to the finals, but Lykins has logged more than his share of time playing against the best RTS gamers in the world. He's a long-shot, but don't rule him out.

**Favorite: IMMORTAL**
A cocky, 15-year old upstart from Pleasanton, California, Kurt "Immortal" Shimada has made as many enemies as friends in the world of competitive gaming. But even his detractors admit he's got the skillz to go all the way in the Action category this time around. Will confidence and ability win out over an impressive list of wily veteran players who would like nothing better than to put "immny" in his place? We're betting the answer is yes.

**Dark Horse: Timshot**
It's hard enough to 'make the cut' in the PGL with a fast 'Net connection' but with a modem? Tim "ramshot" Orsak passed test with flying colors, as the only High-Ping player among the top 10-ranked qualifiers in the Season 3 Action category. While he's definitely a dark horse candidate in the grand scheme of things, he's our pick to get to the finals and surprise some people once he's there.

**TEAMPLAY (QUAKE II):**
**Favorite: DeathRow**
Thrash, Reptile, Unholy, Bz and frick. Need we say more? While clan Unforgiven should give them a terrific challenge, clan DeathRow has to be considered the favorite in what's shaping up as the greatest Quake team competition ever.

**Dark Horse: Power Rangers**
Led by teen Quake phenom Dmann, and also featuring Jabawango, Mec, DrE, Butu, 1337 and BigNyM, the Power Rangers clan was 7 - 1 in the regular season. While not nearly as well-known as some of the other top teams, the Power Rangers combine individual skill and solid teamwork to present a formidable challenge, and are capable of defeating any team if the gaming gods smile upon them.
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Diamond Viper 550

Nvidia's RIVA TNT board is the hottest ticket in the 3D chip arena (this month, anyway). The TNT has dual rendering pipelines and advanced Direct3D features such as bump mapping and stencil buffering. It has all the image-quality goodies that make for beautiful 3D rendering—and it's fast.

The Viper 550 is Diamond's TNT card. It's what we would call a good benchmarking card. It got the highest scores of all the cards on the synthetics benchmarks (WinBench 98, Business WinMark, and 3D WinBench 98), however, it slipped to third place in 3D GameGauge, though just by a few points.

Like all Diamond products, the Viper 550 comes with the company's InControl utilities, which have some nice goodies, such as a virtual pop-up of the Start Menu. However, the 3D control panel is more superficial than useful. Like almost all the cards in the roundup, the Viper allows you to turn off V-sync. The tearing you get from having V-sync off looked pretty minimal—rather like Voodoo².

The Viper 500 is faster than a single Voodoo², though it's not up to Voodoo² SLI. On the other hand, it has a $199 list price.

STB Velocity 4400

STB has always been bullish on the RIVA line of chips, and the company's early support for the TNT chipset continues this trend. The Velocity 4400 is a capable TNT board with the added bonus of a nice, built-in Tweak utility that allows you to alter quite a few settings of the TNT chip. (There's no clock-rate adjustment, though.) You can change the OpenGL gamma, adjust auto MIP-map levels, and use other features.

The Velocity 4400 placed second in our testing. The Viper edged ahead in synthetic benchmarks, whereas the Campus Spectra 2500 eked out a slight margin in 3D GameGauge—essentially there was no difference between the two. STB's image quality was flawless, whereas the Spectra 2500 munged the text status bar in 3D WinBench—a throwback to the early days of the RIVA 128. I didn't notice any of the 2D text fuzziness that was apparent with some of the early RIVA 128 boards.

The software bundle is interesting, too. There's a full version of FORSAKEN, but this version has been enhanced to support 32-bit color modes at resolutions up to 1280x1024. STB also ships with Colorific, for color matching and management; 3D Sensations, an effects generator for PowerPoint; and a pair of Assymetric tools for 3D graphics and video editing.

The Velocity 4400 is a balanced RIVA TNT board with good image quality, an interesting bundle, and a terrific little control panel.

Velocity 4400, $199 (for 16MB),
STB Systems, (972) 234-8750.
www.stb.com
Pros: Great control panel; nice bundle; solid performance.
Cons: It can't run Glide.
**Canopus Spectra 2500**

Canopus launches a new product name with the Spectra 2500, which is a RIVA TNT board distinguished by its compact size and the presence of a small fan on the RIVA TNT chip—something they started with the Pure3D II.

The Spectra 2500 generated the highest 3D GameGauge score of the roundup, though the STB lagged by an insignificant amount. However, an image-quality problem cropped up in 3D WinBench 98—the text status bar was garbled in many of the scenes. We didn’t see any serious artifacts in the games used in our testing, but this kind of problem is a bit worrisome. Let’s hope it’s something that can be fixed with a driver revision. The Spectra control panel covers a lot of bases (though not as many as STB’s tweak panel) but it’s somewhat disorganized.

The Spectra 2500 is built to coexist with 3DFx add-on boards. There’s an internal reverse pass-through for Canopus Voodoo² cards and an external reverse pass-through for other Voodoo² products. This may improve 2D text quality a bit. There will also be an optional daughtercard that supports video-in. Canopus is working on wider distribution, so you may be able to find a Canopus product easier than in the past.

Like all Canopus products, the Spectra 2500 puts its own stamp on what might otherwise be a commodity product. However, it still needs a bit of fine-tuning.

**Spectra 2500.** $199 for 16MB.

www.canopuscorp.com

**Pros:** Fast in games; reverse pass-through for Voodoo² fan.

**Cons:** Potential image-quality issues.

---

**Hercules Terminator Beast**

The Terminator Beast is an interesting board in that it’s the only S3 Savage 3D-based board in the roundup. Savage 3D is S3’s try at some 3D redemtion in the wake of its poorly performing 3D on the VIRGE series. If the Beast is any indication, this attempt at redemption is mostly successful, but it falls just short of being a complete success.

For starters, the Beast supports a maximum of 8MB of video memory. S3 will counter with its texture compression scheme, recently adopted by Microsoft for Direct3D. The fact is, though, that not all games will use texture compression, so you fall back on the AGP bus. And while AGP is relatively fast compared to PCI, it’s not as fast as local video memory. Maximum 3D resolution is limited, too, and as more games support triple buffering this will become a bigger problem.

Another controversial issue is the Beast’s capability to automatically precompress textures in games that don’t support texture compression. We ran 3D GameGauge and 3D WinBench with auto-compression on and off (the benchmark numbers are with compression off). We squinted and watched carefully and didn’t notice any serious artifacts on the fly. Curiously enough, the Beast comes with presets for the various 3D GameGauge Direct3D games.

OpenGL support is through both an ICD and a direct-to-the-metal mini-GL driver. The ICD is slower, but supports full OpenGL functionality, while the mini-GL driver is tuned for QUAKE II-based games. We used the mini-GL driver for our testing. We did notice some odd artifacts with Direct3D games on the 450MHz testbed—white dots that would appear in a regular pattern—this was not an encouraging sight.

In addition, the transparent name boxes in MOTORHEAD disappeared when running on the Terminator. We also had some setup problems on an Abit-equipped 300MHz Pentium II that were solved only by getting a new motherboard BIOS update. The board is fast, placing between the TNT and Banshee boards in 3D GameGauge scores. The 2D WinBench score essentially tied the ASUS board for last place.

Overall, the Terminator Beast is a modest board with ambitious goals that it doesn’t quite meet.


**Pros:** S3 Texture compression, low cost.

**Cons:** Slow 2D, limited memory, minor image-quality issues.
It's up to you — and your Bf109G — to intercept a squadron of Allied B-17's headed straight for Berlin. Experience real dogfights in the Battle of the Ardennes over WWII Belgium. Where there's nothing between you and the enemy except your ability — and stubborn determination. You'll fly one of 7 different WWII fighter planes. Allied or Axis, the choice is yours. And it's all historically accurate, with true-life graphics including 13 planes, flak — even detailed bridges. Jane's WWII Fighters. It's authentic seat-of-your-pants flight sim excitement. Where you do the flying. No backup computers — and no second chances.

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No choice.
No hope.
No surrender.
CGW's Image Quality
Hall of Shame

All the makers of the various chips and cards are touting their image quality. For the most part, image quality has improved, and we're happy that it is now a major consideration. Even so, we ran across some quality issues, some worse than others.

All Boards Using 3Dfx's Voodoo Banshee
Notice that the Banshee dithers between MIP-Maps in 3D WinBench 98's MIP-map tests. Holy 1740, Batman!

Matrox G200 (all boards)
Matrox's blues seem to go on forever.

STB Velocity 4400
Here's how it's supposed to be done.
The Glide Factor

For a game to take advantage of a 3D accelerator, it requires a way for the software to get at the 3D accelerator's functionality. This junction is called an API (applications programming interface).

Choosing the right 3D accelerator is complicated by the widespread adoption of a proprietary API, 3Dfx's Glide, which made a lot of sense a couple of years ago. Direct3D was pretty pathetic, and OpenGL support wasn't yet widespread. We're starting to see a wave of Glide-only games (most new titles that have Glide support will also support either Direct3D or OpenGL). Still, there are a lot of existing Glide-only titles, and there are still a few key games showing up every day—Independence War, for example.

If you're buying a new system, the best gaming rig you can get is one with a fast AGP 2X board, like one of the Riva TNT boards, and a Voodoo2 card. If you're really hard-core, you could always add a second Voodoo2 board for SLI, but that's excessive for most users.

If you're buying a new system and you already have a Voodoo board, there's probably no reason to upgrade to Voodoo2. Get a TNT board instead. With multishadow support in both Direct3D and OpenGL, as well as impressive 2D speed, TNT covers quite a few bases, and you can use the Voodoo board for Glide titles.

Banshee throws an interesting wrinkle into the equation. It's reasonably fast in Direct3D and OpenGL, but it's no replacement for Voodoo2. On the other hand, if you're on a fairly tight budget, Banshee looks pretty promising, although there seem to be a few early glitches with Glide—but perhaps no more so than Voodoo2 had when it shipped. Banshee also doesn't support single-pass multitexturing. On the upside, it is not a Voodoo Rush redux, since Banshee's 2D performance is quite good. So Banshee's a good budget solution! It offers Glide support, although it doesn't equal TNT in overall performance.

Hercules Terminator Beast

Dunno where these white dots came from (above). Maybe it decided to start snowing?

Canopus Spectra 2500

Come on, I don't need new glasses yet (below). Note the text status bar at the bottom.
3D TO DIE FOR

ASUS V30002ZXTV

In a time when Banshee and TNT boards are being announced seemingly by the truckload, ASUS has shot squarely behind the moving target and released a RIVA 128z board. The good news is that it's cheap ($129 MSRP). But compared to the current generation of cards, it's slow and suffers the now-familiar image-quality problems seen with the RIVA 128 series.

There's not a lot to say about the V30002z. It's slower in 2D and 3D GameGauge than all the other shipping cards. It's cheap, supports TV-in, and has performance that would have been leading edge a year ago. It comes bundled with Rage Software's INCOMING and a modest video-capture tool. All in all, there are better cards out there for just a few bucks more.

**Pros:** Cheap; TV-in and TV-out.

**Cons:** Performance; image quality.

---

**Speed is the Key**

There are several trends evolving in computer games that should shape your decision when selecting a new graphics card. One important trend is multitexturing support. More games are doing multipass rendering in which textures are blended together. This results in more realistic surfaces and better lighting/shadow effects. Single-pass multitexturing allows a 3D accelerator to blend multiple textures in one rendering pass. Until recently, only Voodoo² had multitexture support—and only in Glide/OpenGL.

The RIVA TNT, with its dual texturing pipelines, has multitexturing capability, which becomes apparent in QUAKE II tests. Banshee boards trailed the performance of the stock PA2000 Voodoo² card by a wide margin on QUAKE II, even though they ran ahead of the Voodoo² board in many Direct3D games. DirectX8 has full support for multitexturing, so we'll likely see more multitextured games in the future. The recent trend toward dual rendering engines in newly announced chips only adds fuel to this fire.

Another trend is the movement toward richer texture sets. This has happened more slowly than we expected, but we are beginning to see titles with 20+MB of textures in scenes. Some of these titles, like Criterion's REEL RACER, were also designed with AGP in mind. The trend toward higher polygon counts has an effect, too, because more vertex data needs to be sent over the bus. The full setup engine in most newer chips eases the problem a bit, but it's still there. Huge texture sets coupled with high polygon counts can really saturate the bandwidth of the bus. This partially explains the trend to large amounts of local video memory. AGP version 1.0 maxes out at 528MB per second—but smaller amounts of textures need to be retrieved at any moment in time if AGP execute mode is used.

Still, the bandwidth problem has brought us to AGP 2.0 (a.k.a. AGP Pro), which doubles maximum AGP throughput to 1GB/sec. We should see the first AGP Pro boards early next year.
The Fire. The Cybrids turn on humanity and destroy the Age of Hope. Earthsiege begins.

End of The Fire. The daring destruction of Prometheus's moon base fails to uncover signs of the Dark Intellect itself.

2471
Sentinel Cybertronix unveils Prometheus.

2602
A series of defeats forces Earth's people to withdraw support for the fledgling colonies on Luna, Mars, Venus, and outlying mining stations. The colonists suffer massive casualties.

2605

2627
Inception of the Great Human Empire. Petresun I crowned Emperor.

Martian rebels discover advanced alien technology which shifts the balance of power. Rebels become a legitimate challenge to the Empire.

2652
The Empire and the Cybrids have amassed huge armadas, but no one really knows the extent of the buildup.

2800

2826
Hostilities break out on Mars and Venus. The Emperor unleashes the Imperial Fleet to crush the rebellion. The Cybrids seize the opportunity and launch a massive invasion armada. STARSIEGE begins.

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Meta-jumpgate discovered to be part of a network of interstellar gates. The Diaspora begins. Humanity begins to spread throughout the galaxy. "Those Who Jumped," the first people travelling through the jumpgate, forsake the security of the Great Human Empire to journey into the unknown.

A powerful force of Imperial Knights, the Blood Eagle, appear in tribe space to subdue the Children of the Phoenix for the Great Human Empire. The conflict fractures the Children, as groups break away to form new tribes. This event becomes known as The Splintering.

---

**2832**

*Starbase ends.*

**3350**

Settlers refer to themselves as a "tribe," the Children of the Phoenix. They claim to follow the teachings of the renowned warrior Harabect Weathers, hero of the Cybrid Wars.

**3450**

The Starwolf tribe forms, supposedly founded by renegades from the Children of the Phoenix and Blood Eagle.
Tribal culture is now in a perpetual state of war. The Blood Eagle, far from their homes for decades, have come to consider themselves a "tribe." Finding HERCs impossible to maintain, they adopt the flexible armors used by the many tribes.

Blood Eagle forces prevail in the Hepta OURUBUS system following use of ecocidal weapons. Starwolf losses are high.

Formation of the Diamond Sword tribe under the tutelage of the Enlightened Master. Using innovative strategies and striking with precision and economy, the Diamond Sword rapidly carve out a large holding for themselves.

Rough census by the Children of the Phoenix shows that of the hundreds of smaller, independent tribes, an "alarming number" have either allied with or agreed to non-aggression pacts with either the Starwolf or Blood Eagle. Already the skirmishes have increased, and bloodfeuds grow more common.

"Out of nowhere comes a game that threatens to surpass both Quake II and Unreal for multiplayer supremacy."
— Next Generation

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**Quantum3D Raven**

Quantum3D squarely aims at the consumer market with this no-frills, $149 board that uses 3Dfx's new Banshee chip. The board ships with 16MB of SDRAM. The bundle hadn't been firmed up at press time, but if Quantum3D's hopes are realized, it should be unique.

One thing is apparent from our testing of all the Banshee boards: This is not your Daddy's Voodoo Rush. While performance wasn't up to the level of TNT (except for MOTOREHEAD), Banshee performed quite well in 2D and 3D benchmarks and game scores. The lack of a second texture unit hurt it in QUAKE II scores, but all the other games fared reasonably well. This particular Banshee board took everything we threw at it with one minor exception: ironically, it wouldn't run MOTOREHEAD in 3Dfx Glide mode (but it did run just fine in Direct3D mode). We tested an AGP board in the 450MHz system. Although the Raven was one of the more stable Banshee boards, it was also a bit slower than the others. It tied the Guilemot Phoenix for the best scores on our MOTOREHEAD high-resolution torture test, pumping out 27fps at 1280x1024. MOTOREHEAD doesn't appear to be particularly texture rich, so most of its textures probably fit into the local video memory.

Given the bundle (that we can't talk about, or we'd have to shoot you), Quantum3D's growing reputation for customer support, and the price, the Raven bears serious consideration.

Raven, $149 for 16MB, Quantum3D, (408) 919-9999, www.quantum3d.com

**Guilemot Maxigamer Phoenix**

Guilemot's Phoenix rounds out the shipping Banshee boards. The price is certainly right: It's $149 and ships with a $20 rebate coupon, for a stellar price of $129 for a 16MB Banshee board. All we can say is, it ain't cheap memory grand. We tested the PCI board in both the 450MHz Pentium II, as their AGP board wasn't ready yet. It gave us a chance to see how PCI Banshee fared versus the AGP card. We had suspected there would be very little difference, since Banshee is really a souped-up PCI part, and we were right. In fact, the Phoenix posted scores that were neck and neck with the

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**Performance Benchmarks**

**3D GameGauge (800x600x16)**

<table>
<thead>
<tr>
<th>AGP Cards</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aopen PA2000</td>
<td>383.8</td>
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<tr>
<td>ASUS V3000ZXTV</td>
<td>264.5</td>
</tr>
<tr>
<td>Canopus Spectra 2500</td>
<td>487.8</td>
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<td>Diamond Viper 550</td>
<td>477.6</td>
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<td>Guilemot Phoenix AGP</td>
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<td>Hercules Terminator Beast</td>
<td>443.9</td>
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<td>Matrox Marvel G200</td>
<td>281.8</td>
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<td>Matrox Millennium G200</td>
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**How We Tested**

We tested most of the boards on CGW's 4150MHz Pentium II, equipped with 128MB of SDRAM, an Intel 450MHz Pentium II, and 440BX chipset. The system also had a Monster Sound MX200 and all SCSI storage components. The Pentium 200MMX system had an ISA sound card, IDE storage devices and 64MB of EDO SDRAM—a configuration similar to that used by many CGW readers. Each card was tested on a squeaky clean Windows 98 install with DirectX 6.0. Both systems were configured for gaming, so audio and networking was enabled.

We used WinBench 98's business graphics WinMark to test 2D Windows performance (at 1024x768x16), though the score wasn't weighted. In truth, most of these cards are fast enough in 2D. We also used 3D WinBench 98 as a synthetic 3D benchmark and to take a closer look at the image quality of various rendering features. The primary test, though, was CGW's 3D GameGauge, which uses six shipping titles to test overall gaming performance. The 3D GameGauge scores were all recorded at 800x600. We've decided it was time to drop 640x480 testing, as it didn't really
somewhat less stable (but beta) version of the Diamond Monster Fusion. We did run into a problem on the Pentium 200MHz test bed: FORSAKEN wouldn’t run, but this is one of the most finicky tests we have. There were no problems on the Pentium II. Guilemol is clearly trying to stake out the value position for their products. Not long ago, they dropped the price of their 12MB Voodoo² card to $159—and now we have a $129 card with 16MB. You give up a few frills but at that price, it’s definitely worth checking out.


Pros: Fast, cheap.
Cons: Basic amenities.

3D GameGauge
Real-World Performance Testing

We all know that the real reason to get a 3D accelerator is to play games. So it makes a lot of sense to test 3D graphics cards using real 3D games. Unfortunately, there aren’t any established benchmarks for testing 3D cards with PC games. So we created the 3D GameGauge to do just that.

3D GameGauge is a performance index that measures the speed of six popular PC games. We test the frame-rates on a standard demo loop for each game and combine the totals to yield the 3D GameGauge score. We’ve shown this number next to each card reviewed here, along with a reference number for comparison. We derived the reference number (392) by running the same test on our test-bed Pentium II 450 using a 12MB Voodoo²-based Diamond Monster 3D II. We believe gamers will be most satisfied with a 3D card that either comes close to this score or beats it. If it doesn’t, we don’t recommend that board for its 3D performance, although it may have other features—video capture, TV tuner, etc.—that appeal to you. The 3D GameGauge score gives you a good idea of how a card will perform on a variety of titles.

The six games comprising the test are FORSAKEN, INCOMING, TUROK, QUAKE II, QUAKE, and F22 ADF. The games cover a gamut of performance types. For example, FORSAKEN has a fairly low polygon count, but emphasizes fill-rate. QUAKE II has a higher polygon count than the other titles (except possibly Incoming) and is a good OpenGL test case. F22 ADF is a flight sim with over 8MB of textures, which can stress the card’s ability to move textures across the bus.

We run 3D GameGauge titles at a resolution of 800x600x16 with audio enabled. A graphics card may have higher frame-rates when it has the whole system to itself, but performance is often affected when other things are happening. If the card allows, we disable “wait for V-sync” to get a better idea of the card’s rendering “headroom.” In the future, we’d like to see more games supporting triple buffering and higher resolutions. This would make testing a lot easier.

In addition to the 3D GameGauge, we use other benchmark tests to determine video performance. Those tests are described along with our performance results on the previous page under How We Tested. There you will also find a description of the test-bed system used for this survey.

The 3D GameGauge is the best available method for evaluating a card’s 3D graphics speed when it’s running games. However, we are constantly working to improve the GameGauge by replacing older games with newer, more robust titles that support enhanced features such as triple buffering and higher resolutions. 2D Benchmark Operations is also working on a benchmark using 3D GameGauge to deliver a rigorous, application-based 3D benchmark.

www.computergaming.com

3D WinBench 98

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APG Cards

PCI Cards

differentiate some of the cards. In addition, we used Gremlin’s MOTORHEAD (version 1.3) to test high resolution 3D performance—up to 1280x1024. We recorded a playback loop, then captured the average frame rate.

The PCI cards were tested on a Pentium 200MX system. The Guilemol Phoenix was also tested on the 450Mhz system because we didn’t have the AGP version. It didn’t really make a difference, since Banshee is really just an enhanced PCI part, and doesn’t support advanced AGP features.
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Quantum3D AGP S12TV

We occasionally get messages asking about AGP Voodoo². As the PCI Banshee boards indicate, AGP doesn't buy you a whole lot with current 3Dfx technology. Quantum3D has a nifty demo that shows a large number of video streams being textured over multiple objects. The demo brings a PCI Voodoo² to its knees, but the dedicated 66MHz AGP port handles it with aplomb. Of course, I don't know any games that do this yet, but that may yet come to pass.

What an AGP Voodoo² board might be good for is if you upgrade from an existing PCI system. If you have a decent 2D card and are breaking your budget trying to get everything, buy the S12 AGP. The only problem with this theory is that it's $349; so you could buy an AGP primary card and someone else's Voodoo² card for the same price.

Performance is a bit better in 3D WinBench than that of PCI Voodoo² cards, but 3D GameGauge only comes in slightly faster than a generic Voodoo² card. Perhaps when games have richer texture sets and higher triangle counts, this card will come into its own, but right now I'd rather get a fully AGP compliant card—or even a Banshee—for a lot less.

AGP S12TV. $349 for 12MB. Quantum3D, (408) 919-9999. www.quantum3d.com
Pro: Voodoo² for AGP.
Con: ...except that we're not really sure why; very expensive.

AOpen PA2000

Here we have a Voodoo² reference board. We immediately noticed that the PA2000 number was taped on the PA2000 circuit board. Peeling the label back revealed the 3Dfx logo, something we'd only seen on 3Dfx reference boards. 3Dfx reference drivers would run well on this particular card.

At $199 list for a 12MB, the pricing is reasonable, but the only references I could find on the Net were for higher prices. The bundle is interesting, except that many of the games are merely playable demos. There are full versions of Turok, Flight Unlimited II, Stratosphere, and Joint Strike Fighter, though the documentation is entirely on the CD.

This is an undistinguished Voodoo² design that clearly demonstrates the increasing commodity nature of 3Dfx accelerators.

Pro: Extensive software bundle; nice CD hard case.
Con: Just another reference board design that ships with the reference drivers.
Almost There...

We also looked at a number of boards that were almost, but not quite ready for prime time. Most of the problems appear to be driver issues more than anything else, and by the time you read this, the boards should be shipping.

Wicked3D Vengeance

You gotta love the names of some of these products. The Vengeance is a Banshee reference board design. Wicked3D, a division of MetaByte, adds value by delivering enhanced drivers. The original Wicked3D Voodoo² card was an unassuming reference board design enhanced by drivers that could run at slightly better resolutions than most Voodoo² boards.

The Vengeance actually ran most of our tests, but it would freeze up when trying to run GL_QUAKE. At press time, the engineers at Wicked3D suspected BIOS issues and were busy working on the problem. The board will be priced at $149 for a board with 16MB of SDRAM.

Vengeance. $149. Wicked3D, (510) 434-4700. www.wicked3d.com
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Diamond Monster Fusion

The first thing you notice about the Monster Fusion is the massive fan over the Voodoo Banshee chip. It’s actually a cool looking, flat fan/heat sink. It works, too. Despite having 125MHz SGRAM, the AGP Monster Fusion board never got more than warm, as opposed to other Banshee boards that got almost too hot to touch.

It was almost, but not quite, ready to ship when we checked it out. Both the AGP and PCI versions would crash to the Windows desktop when trying to run the 1.3 and 1.4 versions of MOTORHEAD. Fusion completed all other tests, coming in slightly ahead of the Guillemot Phoenix and stands the potential of being the fastest Banshee board out there. It’s also a little more expensive at $159, but it does have SGRAM. The Fusion PCI comes with 16MB of SDRAM and is priced at $149.

Monster Fusion. $159 for 16MB AGP; $149 for 16MB PCI, Diamond Multimedia. (800) 468-5846. www.diamondmn.com

Number Nine Revolution IV

Last year, Number Nine vowed to improve the 3D performance in its next generation part. The good news is that the company kept its promise, and the Ticket-to-Ride chip is two to four times faster in 3D than the original Revolution 3D. The bad news, based on our testing, is that it may not be good enough. While the 3D WinBench score is decent, the board doesn’t seem to have the fill-rate needed to handle games all that well. What’s more, the Windows 95/98 OpenGL driver that the company sent us was pretty unstable.

However, it also felt somewhat unfinished, so it’s possible that a significant amount of driver tuning may speed things up. One good thing about the board is that it will come in a 32MB version—that’s right, 32MB of local video memory, and the price will be right, too.

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= best suited  = good choice
Event Horizons and Trends

There are a number of incoming chips that we picked up in our over-the-horizon radar. They continue a couple of interesting trends that we've seen in our roundup.

The first trend is boards with lots of local video memory. Most of the boards tested now ship in 16MB versions, and some retail boards are available only in 16MB versions. (For the price conscious, beware that some OEM boards may only have 8MB, and may not be expandable.) Even 8MB Voodoo² boards have all but disappeared, with 12MB boards now the norm.

Number Nine is even shipping a 32MB version of its Revolution IV, and ATI has announced a pair of 32MB products using their Rage 128 chip.

Another trend is integration of dual rendering pipelines. The first part with dual-rendering pipelines on a single chip is nVidia's TNT. The Rage 128, which is probably shipping as you read this, also sports dual-rendering engines, as does 3DLabs Permedia 3 and Rendition's recently announced Redline accelerator. So here's a quick rundown on each of these new parts.

ATI Rage 128

The Rage 128 has been redesigned from the ground up and bears little resemblance to the Rage Pro. In addition to two rendering pipelines, it has full hardware DVD decoder capability on the chip. So with the right software support for DVD region encryption, you won't even need a daughtercard. The chip is manufactured using a process (.25 micron) that can cram more transistors in a given space—the Rage 128 has 7 million transistors. The first versions will likely run at 100MHz, but 125 and 150MHz is possible. The chip can also support a higher speed variant of SDRAM, called Double Data Rate RAM (DDR RAM).

ATI is shipping two boards of interest to gamers. The Rage Fury uses the Rage 128GL chip, which also powers a workstation card—the Rage Magnum. The Fury comes with TV-out and 32MB of RAM; the announced price is $299 for 32MB. The Xpert 128 will have 16MB of RAM, and will cost less. Driver support is likely to be robust, with full DirectX6 and OpenGL ICD drivers.

3DLabs Permedia 3

The Permedia 3 has twin rendering engines and the ability to manage texture usage in hardware. At press time, no boards have been publicly announced.

On paper, the chip looks pretty fast—3DLabs is claiming a maximum fill-rate of 250Mpixels/sec. Like ATI's new part, Permedia 3 will also be built using a 0.25 micron process and will max out at 16MB of SDRAM or SGRAM.

Rendition Redline

Not a lot is known about this chip yet. It does have dual rendering engines, and apparently has on-chip support for dual monitors. Rendition is aiming for the 250 megapixel range at a minimum. The company, recently acquired by Micron, is under the gun to deliver a competitive part. Rendition was one of the first companies to ship a 3D accelerator aimed at gamers, but they haven't been able to keep up with the frantic release schedule of new technology from competitors. Let's hope that the Redline will keep this 3D pioneer in prime fighting form.

PowerVR Second Generation

We've heard relatively little from Videologic or NEC on the PowerVR front. The PVRSG, as it's known, still uses the infinite planes rendering method, but adds a lot of hardware functionality to accelerate Direct3D better. NEC's plans for PC products have been somewhat delayed because Sega chose PowerVR for its Dreamcast console system, which has been eating into NEC/Videologic engineering resources, though it's possible we'll see PC product early in 1999.

The Bottom Line

In scoring the cards, we took a look at several factors. Setup was an important issue, but most cards these days are reasonably easy to install. Most cards also now ship with independent setup programs that allow you to force a driver install if Windows is reluctant. We noted any setup issues in the individual reviews. Included in our setup considerations were any supplied control panel or accessory software to tweak the card.

Performance in 3D GameGauge was the major test, but we also took a good look at synthetic benchmark results. Image quality has also figured high on our list. Additional features, such as enhanced expandability, were also taken into consideration, and software bundles were only a minor consideration.

Based on this, our pick for top honors is the STB Velocity 4400. Although the Canopus Spectro 2500 had marginally higher 3D GameGauge numbers, the image-quality problem we noticed in 3D WinBench 98 concerns us. Diamond's Viper 550 is a great card, too, but the control panel utilities aren't quite as robust as the STB's.

Don't sell the Banshee cards short, either. Although 3D GameGauge performance trailed the TNT boards, the ability to run Glide (3Dfx) games is a big plus, as is their relatively low cost. Of the two shipping quality Banshee boards, the Guillemot Phoenix is our pick. It's combination of low cost and good performance makes it a winner for those on a budget. Diamond's Monster Fusion looks promising—particularly the AGP version, with SGRAM on board—but it wasn't quite final when we looked at it.

The Terminator Beast is an interesting product that generated good 3D GameGauge scores, but we have some concerns about image quality and 2D performance. The 8MB limitation is also an issue. The Matrox boards—the speed king in 2D/3D combo cards only a couple of months ago—have already been eclipsed, though the Marvel G200 is an excellent multipurpose board.

All of these boards easily eclipse last years crop of 3D accelerators. It's clear from recent announcements that the graphics chip battles are far from over. But these accelerators are finally approaching the kind of features and performance that we've all been longing for.
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I Don't Play, iMac

Cute and Zippy, but Not for Serious Gamers

by Dave Salvator

Photo by Michael Falconer
Despite some forward-thinking design ideas, iMac too often favors form over function, which will put it on the express train toward obsolescence for gamers.

You've Got the Look...

In returning to the integrated CPU/CRT design of the original Mac, iMac brings a streamlined retro look to an industry chock-full of beige box and monitor combos. Unfortunately, despite some forward-thinking design ideas, iMac too often favors form over function, which will put it on the express train toward obsolescence for gamers.

Somewhat reminiscent of the Macs of old is iMac's lack of upgradability and limited accessibility to what few upgrades are possible. Then of course, there are the glaring design holes, like oh, say, the complete lack of removable writable media. That's right, no floppy drive, no Zip drive, nothing. Let me give you an idea of the aggravation this can cause: The only way I could actually write this piece on the iMac was to hook up its modem, connect to my ISP, and email the review to myself. Apple will be making a USB floppy drive for iMac that may be available as you read this, and Iomega has announced a USB Zip drive due out later this year or early next year. But these devices won't be cheap and will detract from iMac's integrated design.

For all of its aspirations, iMac winds up often feeling like a 38-pound laptop. Highlights include a CD-ROM drive that could have easily been pulled from a laptop—and at least mobile machines have solved the integrated floppy/CD-ROM problem. Rounding out the mix is a small keyboard with a mushy action, and a hockey puck-like mouse, which might be useful for those in the animal kingdom not granted with opposable thumbs, but for humans it's uncomfortable almost to the point of uselessness. One happy footnote: Logitech's two-button USB mouse with scroll-wheels does work with the iMac, although Logitech hasn't yet made a driver available to enable full functionality.

Another annoyance is that this sucker is noisy, mainly because the CPU is on your desktop. The combination of CPU fan noise, the hard-drive spinning, and the spinning up of the CD-ROM drive makes quite a racket.

Break It Down

The iMac's CPU is a G3 233MHz PowerPC. This is an extremely capable CPU that can move business apps and games along well. G3s feature a 512KB Level 2 (L2) cache with its own backside bus that runs at half the CPU's core clock-rate (similar to Pentium II's architecture.) This CPU talks to 32MB of SDRAM (upgradable to 128MB), which runs at 66MHz, yielding a peak system memory data rate of 528MB/sec (current PCs max out at 800MB/sec). iMac's 233MHz clock rate may seem low, but appreciate that architectural differences between PowerPC and Pentium II give PowerPC a floating-point advantage at similar clock rates. Comparisons are difficult to make here, owing to the lack of a cross-platform 3D benchmark. But iMac's CPU probably performs more than a 300MHz Pentium II for floating-point operations, which would seem to bode well for 3D performance. That is, until you look at the 3D accelerator it's talking to.

The iMac uses ATI's woefully outdated Rage IIC graphics chipset, which shipped in late 1997. Not only is Rage IIC dated...
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Another news note: ATi has announced that it will be providing OpenGL acceleration for all G3 Macs, including the iMac.

In the mass-storage department, the most notable change is the lack of SCSI, a hallmark of all Macs instead. iMac ships with an IDE 4GB hard drive, and a 24x CD-ROM drive. This latter component has a particularly cheap feel to it, similar to those found in laptops.

As for audio, iMac has an onboard sound chip, the details of which are somewhat sketchy. On its Web site, Apple states merely that this chip supports CD-quality audio resolution (44.1KHz, 16-bit, stereo). A nice touch here is two front-mounted, Walkman-style headphone jacks, which mute the front-facing speakers. Audio in these headphone jacks is clean, and there's no audible hash.

However, the iMac's speakers are at best anemic, and because they lack a woofer driver, low-end response is virtually nonexistent. Apple has included a line-cut jack on the iMac's side to route audio to external speakers.

For adding peripherals to iMac, Apple went long on the Universal Serial Bus (USB). Both the keyboard and mouse connect via USB, and the keyboard has two conveniently placed USB ports, one at each end. Gone are traditional Macintosh connectivity options such as Apple Desktop Bus (ADB), modem and printer ports, and LocalTalk port, which Macs use for peer-to-peer networking.

In some ways, this is a good thing, since ADB could be somewhat unstable when devices were disconnected and reconnected often. The LocalTalk port has been replaced by an onboard 10/100 Base-T Ethernet connection, which will allow for much faster network connections. However, because this is the first Mac to ship with USB, a fair question to ask is: What exactly can you connect to this thing? At this point, the answer seems to be "very little."

Because iMac lacks ADB, traditional Mac game controllers can't be connected to it, and while both ThrustMaster, Gravis, and CH Products have announced future USB game controllers for iMac, none were available at press time. Also, Apple's external floppy drive and Iomega's Zip drive for the iMac will both connect via USB. Rounding out iMac's I/O lineup is an internal 56K modem that supports both K56Flex and the new V90 (Open56K) standard.

Game On
We took the iMac for a quick spin through some games, including MACQUAKE, WARCRAFT II, and MYTH. In all three titles, performance wasn't a problem. But in MACQUAKE, the game couldn't recognize iMac's mouse, probably because the game was trying to poll for the ADB mouse directly, so mouse-looking wasn't an option. Installing the iMac Update 1.0 from Apple's Web site failed to resolve the problem. Interestingly, both WARCRAFT II and MYTH had no mouse problems and ran fine. iMac comes bundled with Shiny's MDK, which ran fine as well, although iMac's I/O quality was mediocre. For the more valiant tweaker, emulation packages like Virtual PC and SoftWindows allow Macs to run Windows 95, and you can run some Windows 95 games this way, albeit at a somewhat slower speed than on a PC (see sidebar).

Bottom Line Time
The iMac will serve its targeted market—new computer users whose primary interest is the Internet—pretty well. For casual gamers not terribly interested in 3D performance, iMac will again work. But for serious gamers of any stripe, iMac is not the way to go. There are just too many limiting factors, not to mention a dearth of upgrade options. Serious Mac gamers should be looking to Apple's higher end G3 Macs for their expandability. (Read: You can put a Voodoo card in them.) The Mac gaming community continues to plod on, and there are a decent number of titles out there for the Mac—provided that you don't mind being razzed by all your PC gaming friends who have been playing the titles for months (sometimes years) before you. So if your mother-in-law is looking to check out this whole "Internet thing," get her an iMac. Or if your cousin Smelly is looking to get into strategy games and is really excited about playing RIVEN, get him an iMac. But if you want to enjoy the best that gaming has to offer, look elsewhere.
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Intel's '99 Roadmap Revealed

Intel can't keep a secret. Try though it may, parts of its 1999 roadmap were recently leaked to the press.
While there don't appear to be any major surprises on the horizon, AGP, system memory, and CPUs are all going to get speed boosts.
As for CPUs, Intel plans to ship 450MHz and 500MHz Katmai processors next March, which will include the Katmai New Instructions (KNI). 70 new instructions to help accelerate the transform and lighting portion of the 3D pipeline. A companion chipset to Katmai, called the 820—also code-named Camino—will support 4x AGP, AC97 Digital Link audio; and Direct Rambus dynamic RAM (DRDRAM) is due in the second quarter. These systems will be ready to accept a 133MHz system memory bus architecture later in the year, yielding a peak memory bandwidth of 1GB/sec.

Intel's new 440BX chipset, due in the second quarter of 1999, will support Direct RDRAM—although it's unclear whether the chipset will support both Direct RDRAM and today's SDRAM. Camino will also support 4x AGP; whose peak data rate of 1GB/sec will help keep 3D graphics moving along.

On the graphics front, Intel is working on two new graphics chipsets, one, code-named Portola, is due in mid-1999; the other, due late next year, Intel will unveil Coloma, a high-performance AGP 4x part. Intel has been very tight-lipped about these chipsets, but stay tuned here to the Works for details and specifications.

Although Intel would very much like to integrate IEEE 1394 (a.k.a. FireWire) functionality to better complete the PC's external plug-and-play capabilities, it canceled plans to support FireWire in a more extensive version of its 440BX chipset because of a lack of demand and high cost. Officials at two Top 10 PC makers today told Intel out of including IEEE 1394. It currently costs OEMs between $10 and $20 to support the specification. An official said it will support IEEE 1394 in its products at a later date. —Lisa DiCarlo, PC Week, and Dave Salvator

TechWatch

ATI Rage 128
This is ATI's next-generation 2D/3D part. Rage 128 will feature dual-rendering pipelines and will be built using a 22nm micro process, which ATI hopes will allow it to run Rage 128 at 125MHz. This part can process two pixels per clock, so peak fill rates at that clock speed would be 250Mpixels/sec. Rage 128 will feature full 32-bit color, anti-aliasing, and single-pass multitexturing.
ETA: Q4 '98

Rendition
Rendition Multimedia Accelerator
Rendition's next-generation part will also feature dual rendering pipelines and support all DirectX features. The chip features a 128-bit memory interface, but Rendition broke this wide bus down into dual independent 64-bit wide channels, which Rendition says will achieve real-world memory performance 50 percent faster than a 128-bit bus alone.
ETA: Q1 '99

AMD K6-3
Following on its K6-2, AMD's next CPU, the K6-3, will retain AMD's 3DNow! technology for accelerating transforms and lighting for 3D rendering. K6-3's biggest improvement will be its onboard 128KB Level 2 (L2) cache, which will run at the CPU's core clock speed.
ETA: Q4 '98

Intel Katmai
This series, Intel's next round of CPUs, has anticipated clock speeds of 650-700MHz. In addition to the higher clock speed, Katmai CPUs will also feature what Intel has dually dubbed "Katmai New Instructions"—a name given to avoid calling these new instruction-set extensions MMX2.
ETA: Q1 '99

Intel IA-64
Intel's next-generation processors will be a substantial departure from their traditional X86 CISC-based architecture. This new 64-bit CPU will use a new set of Very Long Instruction Word (VLIW) instructions, and a technology termed EPIC (Explicitly Parallel Instruction Computing) to execute instructions in parallel.
ETA: Q1 '00

3Dfx's Next Part, Micron Closes Rendition Deal

This month's edition of the Works includes some early info on 3Dfx's next-generation chipset, as well as the news that Micron has closed its Rendition deal.
Although 3Dfx isn't talking about it much yet, not wanting to cloud its fourth-quarter sales outlook, we've heard a few tidbits about its next-generation chipset, called Rampage.
This 2D/3D AGP chip, whose exact ETA isn't yet known, will be 3Dfx's only chip. That's right, kids, new 3D-only 3Dfx boards will be a thing of the past when Rampage arrives, sometime next year. This marks a pretty serious departure from 3Dfx's traditional approach, which consisted almost exclusively of 3D-only boards, which have proven very successful for the company. But in announcing their third-quarter results to their stockholders, 3Dfx unfortunately posted a net loss, although its settlement of the Sega lawsuit did offset the losses somewhat. The fourth quarter is looking brighter for the company, with the arrival of Voodoo Banshee boards from Diamond and Guillemot International, as well as the traditional heavy holiday buying season.
Rampage represents 3Dfx's realization that the 3D-only board market is a niche market relative to the much larger 2D/3D graphics market, and it's there that the company will focus its efforts with Rampage. No performance specifications are available as of yet, but given that the current Voodoo2/Banshee architecture isn't especially AGP-friendly, 3Dfx may be looking to create an architecture that will take better advantage of AGP.

Micron Technology, the parent company of PC maker Micron Electronics, announced the closing of the previously announced acquisition of Rendition, Inc. The acquisition was recently approved by Rendition shareholders, allowing Micron to proceed with the acquisition in a stock-for-stock merger. The deal gives Micron an entree into the graphics arena, and for Rendition, the deal provides a needed infusion of cash that lets it continue work on its RRedline Multimedia Accelerator, which will likely ship first quarter of next year. An early 2D/3D pioneer, Rendition was beset with schedule slips with its V2200 accelerator that cost it some key deals late last year. Despite its late arrival, V2200 was a good 2D/3D performer that found homes in boards from Jazz Multimedia, Diamond Multimedia and Hercules. —Dave Salvator
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3D Sucks
What We Need Is Games That Use 3D, Not 3D Games

Loyd Case

Roughly 140,000 men are arrayed opposite each other in colorful uniforms in a scant square mile of gently rolling hills. It rained the night before, and the ground is soggy. On one side is Napoleon Bonaparte’s Army du Nord while on the other is a mixed bag of British regulars and Belgian, German, and Dutch forces of varying quality. It’s Napoleon’s last, desperate bid to return to power.

The artillery barrage begins at around 11:30 a.m. Soon, French forces are pressing forward to the two fortified chateaux—farms, really—that anchor each flank. Smoke begins to drift off the battlefield. By the time the battle is over, the French will have attacked with 12 heavy cavalry charges. Men are surging all over the battlefield, fighting desperately. Thousands of horses are swarming around, trying to break the squares; artillery is firing incessantly; horse artillery is galloping back and forth.

Render This, Pal
Try to render such a scene and you’ll find you can’t. The number of polygons and textures that it would take to realistically render but the monsters are ugly, in an unintentional way.

Mechanical games fare a bit better, because you can render a jet fighter with several hundred triangles and it will look pretty good. But it’s still not photorealistic. And if you tried to render the Allied raid on the Ploesti oilfields in World War II in its full scale, with hundreds of bombers disgorging their bomb loads while hundreds of German fighters defend against them, you’d still bring any PC to a standstill.

It’s not just the graphics accelerators, but the entire pipeline that are to blame. CPUs aren’t fast enough, the graphics cards aren’t fast enough—and even if they were, scene management would be staggeringly difficult. Technologies like Microsoft’s Fahrenheit will help with the

To realistically render the Battle of Waterloo would choke a supercomputer.

Although AGE OF EMPIRES II looks 3D, it doesn’t make use of 3D acceleration at all.

There’s lots of work going on to try to solve this problem. For example, a number of 3D hardware companies are beginning to wonder if maybe the triangle as a primitive has run out of gas. It’s very possible that the 3D accelerator of tomorrow may spit out graphics in ways that no accelerator today uses. So be aware that today’s hot 3D card may look as pathetic to us in a few years as an EGA card looks today.

Having said all of that, that doesn’t mean that you should despair and toss that 450MHz wonder in the nearest river.
FALCON 3 is still one of the best flight sims ever, and the planes in that game had all of 20 triangles. While the best we can do today is roughly approximate reality, it's certainly a very big step forward.

**3D: It's a Technology, Stupid**

Then there are game companies that try to capitalize on the latest trend. This really steams me. I read recently about one game developer who proposed an idea to a game-company executive. The game was a turn-based strategy game, as I recall. The developer was asked if the game used 3D. After a moment of stunned silence, the developer pointed out that it was a turn-based strategy game. He was told in no uncertain terms that 3D graphics is the new trend, and he should seriously consider making his title 3D. This meant that the poor sap would have to spend countless hours making 3D graphics work that could be put into AI, better 2D graphics, more atmospheric sound, and better gameplay—all for a game that didn't really need 3D graphics in the first place.

Last month, I talked to a number of game programmers about how 3D art is created and brought into games. One developer—who will remain nameless—told me that the reason the performance budget for graphics was so high was a sad and simple truth: "Graphics sells games." I would dearly like to see a day when game boxes no longer feature text that touts "Multipass rendering with colored lighting!"

I mean, who really cares? Maybe there should be an industry-wide rule that says we take all technology terms out of the hands of the people who write the marketing copy on the game boxes and in the ads.

**The Play's the Thing**

3D graphics technology is near and dear to my heart, as many of you know. But I've seen too many people argue over what 3D accelerator is the "best," and most of the time the discussions get very emotional. I get a lot of email asking me if the seemingly infinite upgrade cycle will ever end. The answer is, probably not, as long as the game developers keep ratcheting up the visual quality, the complexity, and the realism of titles.

At some point, we'll be able to run three monitors at 1280x1024 with photorealistic scenes at 30fps. When that happens, maybe the upgrade cycle will slow down. But that's a few years off. Meanwhile, a lot of great titles will be coming out—3D or not—so enjoy what's there. I know I will.

Okay, I'll get off my soapbox now and delve back into some technology topic next month. Remember, though, that all of this is really about having an immersive experience that's been created by someone whose main focus should be to entertain us. All the cool hardware in the world can't make a game like OUTPOST any better.

---

**Tech Tips**

**Gettin' the Boot**

I was quite pleasantly surprised to find that the full install version of the Windows 98 CD is a bootable CD. So if you have a system that can boot from a CD-ROM drive, then installing Windows has just gotten a lot easier.

**Disk House Cleaning**

If you've had OS/2 or a boot manager like System Commander installed, and you no longer need them, having the boot manager prompt come up may annoy you. All you need to do to remove this is to restore the Windows 95/98 master boot record. Boot to the DOS prompt and type the following:

```
FDISK /MBR
Then reboot.
Since FDISK is a potentially dangerous program, you may want back up your valuable data.
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Drive yourself wild.

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TWO RECIPES FOR THE ULTIMATE GAMING MACHINE

Everybody Say Goodbye to the 66MHz Bus

We've now officially entered the era of the 100MHz bus with the new Ultimate Game Machines. The No-Holds-Barred rig has been using the 100MHz front-side bus for several months now, but the 350MHz Pentium II is now cheap enough to make it into the Lean-and-Mean system. Next month, we expect to seriously upgrade the primary graphics, so stay tuned.

**NO HOLDS BARRED**

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<td>$158</td>
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<td>Power Supply</td>
<td>TurboCool 300</td>
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<tr>
<td>Keyboard</td>
<td>MS Natural Keyboard</td>
<td>$69</td>
<td><a href="http://www.microsoft.com/hardware">www.microsoft.com/hardware</a></td>
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<tr>
<td>Mouse/Pointing Device</td>
<td>Logitech Mouseman Plus</td>
<td>$59</td>
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<tr>
<td>Action Game Controller</td>
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<td>Flight Joystick</td>
<td>ThrustMaster F22 Pro</td>
<td>$129</td>
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<td>Throttle</td>
<td>ThrustMaster TOS</td>
<td>$149</td>
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<td>Rudder Pedals</td>
<td>ThrustMaster RCS</td>
<td>$129</td>
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<td>Driving Controls</td>
<td>T5W</td>
<td>$360</td>
<td><a href="http://www.thrustmaster.com">www.thrustmaster.com</a></td>
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**TOTAL:** $7,035

**LEAN & MEAN**

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<tr>
<th>COMPONENT</th>
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<tr>
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<td>MS Natural Keyboard</td>
<td>$69</td>
<td><a href="http://www.microsoft.com/hardware">www.microsoft.com/hardware</a></td>
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<td>$29</td>
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<td>Action Game Controller</td>
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<tr>
<td>Flight Controls</td>
<td>CH F16 Combat Stick</td>
<td>$49</td>
<td><a href="http://www.chipproducts.com">www.chipproducts.com</a></td>
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</tbody>
</table>

**TOTAL:** $2,397

We have made every effort to ensure that this information would be timely and accurate. However, new hardware is constantly being released, and magazine production and distribution involves an 8- to 10-week delay. In cases where new products were close to release at press time, we have kept our current top choice so that we recommend only finished products we have tested. Lists compiled by Dave Salvator and Loyal Case.
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Audio Environmentalist
Get Ready to Fork Out for Four Speakers

by Dave Salvator

PCI Audio has been on the scene now for about two years. During that time, such audio-chip makers as Ensoniq, Aureal Semiconductor, ESS, and Crystal Semiconductor have all introduced PCI audio accelerators, with mixed results. In addition to moving over to a new bus it could call home, audio also expanded into a third dimension, thanks in large part to Aureal Semiconductor's A3D standard. But missing from this PCI audio love-in was any participation from that PCI audio Goliath, Creative Labs.

Well, the waiting is over. Creative's latest offering, the Sound Blaster Live! (SB Live!), is here, and it has a lot to offer. SB Live brings an awful lot together, including its own Environmental Audio Extensions (EAX) and DirectSound acceleration for games, two very solid wavetable synthesizers, digital audio input, and ample real-time effects processing horsepower that's ideal for dabbling musicians. So the news about SB Live is for the most part very good, but there are a few gotchas to consider.

Get Live
The SB Live arrives with ample bundledware, and installation of the card proved to be a breeze. Once you've installed everything (you can pick and choose which apps you want to install), you'll find that your Desktop has grown a second "Start" menu. This second menu is for tweaking the SB Live, and there are actually quite a few bells and whistles to play with. Creative helps you out here: The interface makes most of the tweaks fairly comprehensible.

SB Live contains several new goodies, although only some are specifically aimed at gamers. The most noticeable thing is real-time effects processing of all audio—Wave, MIDI, Line-In, and Audio-CD. More than just reverb and chorus, these effects include flanging, echo, and pitch shifting. Each effect can be tweaked, and you can create audio environments in which you can run up to four of these effects simultaneously.

SB Live also ships with many preconfigured environments for already shipping games, and while these environments are a blanket effect for all audio played in the game, they can add to the overall effect. Curiously absent from all these controls is a graphic EQ for tonal shaping.

In some close listening tests using headphones, SB Live's two line outputs for speakers were very clean, and the chip was hiss-free with all mixer faders at full gain (without audio playing).

For new games, Creative is courting game developers with its EAX technology, which is an API extension to DirectSound 3D that adds reverberant characteristics to different parts of a game world. With this technology, each room in a game can sound different. Creative's technology doesn't use room geometry from the graphics engine, but rather applies predefined approximations for size and reflectivity of a room. However, these approximations do a pretty good job of making big rooms sound big and small rooms sound, of all things, small.

But, there's a catch: Creative says that you'll want to have a four-channel speaker setup (two fronts, two rears, and a subwoofer) to get the most out of EAX, and from my testing, using four channels is the only way to go. During gameplay in the EAX-enhanced version of Unreal, you get terrific ambient effects and 3D positional audio, but SB Live's 3D positional audio in two speakers is just underwhelming. To make a four-channel setup enticing, Cambridge SoundWorks now ships a four-channel version of its PC Works speakers for $99. Or if you like your current speakers, you can get a pair of low-cost satellites to use as your rear-channel speakers. Either way though, you're looking at additional cost to get the optimal effect from SB Live.

The Hard Sell
Creative's EAX technology does work well in four speakers, but in wooing game developers, Creative faces several serious challenges. First, there aren't that many SB Lives out there yet, and Creative is aiming SB Live squarely at the retail channel. For system makers, Creative is pushing its Sound Blaster PCI 128, which is a decent part, but it lacks the horsepower of SB Live. Also, one of Creative's primary competitors, Aureal Semiconductor, has a year-and-a-half lead in evangelizing its A3D standard, which many games have already adopted. And at press time, boards based on Aureal's new Vortex 2 chip were getting pretty close to shipping, and SB Live doesn't have support for A3D.

Aside from Creative's EAX and Aureal's A3D, the other API is Microsoft's DirectSound 3D, which over time will begin to absorb some of the current features found in these two proprietary technologies. But until then, we'll have to wade through the muck stirred up by competing standards.

Final Mix-Down
In Sound Blaster Live!, you have a solid DirectSound 3D accelerator with the added pizzazz of EAX for an even more immersive effect. But to really get the full effect, you'll need to augment your speaker setup with a pair of rear channels. If you're a musician with a gaming bent, then SB Live offers quite a few enticing features, including digital audio input via S/PDIF connectors on a second back panel. But because of the current API bolting contest, SB Live won't support Aureal's A3D standard; titles using that API will be accelerated either via DirectSound3D or not at all.
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Nipple Ring

by Dave Salvator

When laptop makers were trying to develop a convenient, portable pointing device, they came up with several design innovations, including the TouchPad and the TrackPoint. This latter design, pioneered by IBM, used a pencil eraser-sized "mouse-as-joystick" approach and found favor among laptop makers for several years—although the newer TouchPad design is currently more popular on laptops. Now, InterLink Electronics is trying to find a new home for the TrackPoint-type pointing device: your desktop rig.

Its new DeskStick mouse is relatively comfortable to use, and business application users accustomed to this type of pointer will feel right at home. There's just one problem: DeskStick makes a terrible mouse for gaming.

DeskStick installs without incident and connects via a 9-pin serial port or a PS/2-style mouse port. Its software installed easily and was well-behaved running on Windows 98, and offers basic tweaks for speed and acceleration. DeskStick works fine as a desktop pointing device, although driving the GUI with this type of controller takes some getting used to if you never had one in a laptop. Where DeskStick squarely falls down is when you go to boot up your favorite games.

In a quick jaunt through Quake, DeskStick correctly emulates a normal mouse, but trying to accurately mouse-look with it proved to be nearly impossible.

When entering a room, if a monster attacked from behind or from a side, turning around to return fire was awkward and made general movement through levels much more difficult. Next, I took it for a spin in Age of Empires. Here again, it functioned correctly but wasn't very easy to use, primarily because clicking dragging—an essential function for selecting groups of units—is awkward.

If you pine for that old TrackPoint mouse you had on your last laptop, DeskStick is the mouse for you. But if you want a mouse that's good for gaming, consider something else, such as Logitech's MouseMan+.

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REVIEW • QUICKSHOT GENX 700 CONTROLLER

Style Over Substance

by Loyd Case

The GenX 700 looks cool, doesn't cost much, and has lots of features, all of which sound great on paper, but when you dig underneat, you find that it lacks something important: control.

The GenX 700 is a big controller, but it's lightweight and sits in your lap easily. The handle is comfortable—although it's a tad too contoured for my taste. On the left side is a large, oblong shape that looks vaguely like one of the Zerglings from Starcraft. It's actually the throttle control and turns out to be quite comfortable. It's easily the best thing about this controller.

The GenX requires a keyboard pass-through as well as a game controller connection. I had no problems attaching it to a Falcon Northwest Pentium II system, which is good because that means that the controller doesn't have any issues with fast keyboard ports.

The keyboard pass-through serves one function: to pass along the fixed key assignments of the "digital" buttons. The GenX 700 is not a programmable device. For example, if you shift the rotational handle into digital mode, the handle issues a "", (comma) character. While this is a common key assignment for rudders, if you don't like a particular keystroke being issued, you're out of luck.

The GenX 700 comes with two Windows 9x drivers:

One supports analog throttle and the other supports analog hat. You have to manually shift the non-analog device into "digital" mode or the game will get confused.

I ran the GenX 700 through a couple of flight sims and BattleZone. The throttle actually works pretty well, but the handle action was far too light for my taste. Worse, the action was vague and imprecise, and I found it nearly impossible to get good flight control out of it.

All in all, I suggest giving the GenX 700 a pass—or maybe give it to a friend who wants to make an artistic statement on their desktop, rather than actually play games.
Upon further reflection,

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Zen and the Art of CD-ROM

by Loyd Case

I first came across Zen Research at this year's Computer Developer's conference, back in May. The firm was showing a CD-ROM drive that could play full-motion, full-screen, uncompressed video from a CD with nary a pause. It was amazing. The trick is to have multiple laser beams—either multiple emitters or a prism-like mechanism that splits the read laser into multiple beams. Needless to say, I was eager to check out this drive. The first company to ship drives that use Zen's technology is Kenwood, which is trying to break into the data side of the electronics business.

This drive is one of those breakthroughs that will confound product reviewers everywhere. First, it really only spins at around 10x speed. It uses seven beams, which are split by a mirror mechanism, to read multiple tracks simultaneously. The problem is that WinBench 98's CD-ROM benchmarks don't do this technology justice. According to WinBench 98, the maximum transfer rate of the drive is around 2.7MB/sec—more like an 18x drive, and well under the 6MB/sec stat that Kenwood touts. Access time is right around 100ms—that's okay performance, but it's not great. The overall CD-ROM WinMark is 1,410—better than 18x drives, but still not as high as the Pioneer 32X, which comes in at around 1,700.

The interesting data point is that, even with DMA enabled, the inner track and the outer track both pumped out 2.7MB/sec, which you'd expect from a constant linear velocity (CLV) drive.

This goes to show that WinBench 98's CD-ROM tests have some limitations. So I timed the installation of Unreal, which loads about 330MB of stuff onto a disk, including a fairly large number of files. Most are sequential (as is most data on game CDs). On the Multibeam, Unreal installed in 2:46. On the Pioneer—which got a higher CD-ROM WinMark—Unreal took 5:47 to install. Holy moley! Since the drive spins relatively slowly, it never spins down. This alone makes the Kenwood special.

The Kenwood drive goes for around $129—pretty enticing. The lack of spin-down and speedy game installs make this a drive worth considering, except, of course, for its lack of a SCSI version.

---

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Microsoft's Unnatural Act

by Loyd Case

What were the folks in Redmond thinking? I'm a fan of the original Microsoft Natural Keyboard. I write more than ever, and my hands used to ache after a day of pounding out copy. The Natural Keyboard relaxed the position of my hands, and now things have gotten much better.

So when I heard that Microsoft was coming out with a USB version of the Natural Keyboard, I was keenly interested. The good news is that it does work on USB under Windows 98, and it fits in a slightly smaller space on your desk. That's about all the good news.

Someone at Microsoft decided that all those smaller keyboard trays—the ones that wouldn't hold the full size Natural Keyboard—needed to be occupied by the Redmond company, too. So they made the keyboard smaller. In the process, the function keys got smaller. Worse, the arrow keys are now in a diamond pattern instead of an inverted T. I could have gotten used to that—but they also shrunk the arrow keys. I have stubby fingers and I'm a touch typist. So half the time when I reach up for a function key on the Elite, I miss it entirely. The other half of the time, my finger sort of glances off it. Ditto for the arrow keys.

They also rotated the Page Down/Home cluster 90 degrees. Instead of two rows of three keys, there are now three rows of two keys. Damn, my hands have been trained by hours of playing 3D shooters that the Page Down key is there. Uh-oh, it's not. Uh-oh, I'm fraged. Did I mention that they also made those keys smaller?

I've heard inklings that Microsoft may have seen the error of its ways and may be revamping the keyboard again. My advice is simple: Stick with the original layout and just add USB support. Meanwhile, you should avoid this lame excuse for a keyboard. After testing the Elite, I immediately went out and bought two more of the originals. You should, too, if you can find one.

---

This is the 125th Anniversary of Arbor Day, the tree planters' holiday. This year The National Arbor Day Foundation asks you to plant Trees for America, and provide for their care.

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A Ship Without a Rudder

by Dave Salvador

Force-feedback can be a real nuisance. I know CGW has been saying what a wonderful thing force-feedback is, and this does hold true for force-feedback technology's potential. But potential is one thing, and having it bring something compelling to play is quite another. Force-feedback is another one of those technologies in which the hardware is leading the software. Game development lags, but there's a crop of force-feedback hardware at the ready. Most of the action is currently in force-feedback wheels, but Logitech is now shipping its WingMan Force, a third-generation force-feedback stick that gets a lot right, with one big exception: no rudder functionality.

Force-feedback devices need bidirectional communication, and WingMan Force connects via either a serial port or, more impressively, USB. When connecting via the latter, the device is auto-detected by Windows 95/98, and after feeding the driver CD, WingMan Force is ready to rumble.

The WingMan ships with an easy-to-use programming front-end. You’ve got five buttons you can drive with your left hand, and four more on the stick itself. The throttle is a wheel design that works fine, though it lacks detentes at either end. The one rough spot is WingMan's view hat, whose eight points aren’t well defined, and the result can be unplanned (and unwanted) jumping between views at the wrong moment. But the biggest letdown is WingMan's lack of rudder function, and its inability to work with analog rudder pedals.

Where WingMan really shines is how it renders forces. Its motors accurately reproduce forces up to 250 lbf, which means that subtle forces are more realistically rendered. And because WingMan supports Immersion's I-Force technology, you can use Immersion's excellent I-Force Studio force editor. Logitech includes it on the CD, but it's a crippled version. Upgrading to the full version costs $18.95.

Logitech has come close with WingMan Force. It delivers higher resolution force effects than Microsoft's stick, but because of Logitech's glaring lack of rudder functionality, Microsoft's Side-Winder Force Feedback Pro still has the overall edge. If you can live without your rudders, then WingMan Force is a well-done stick. But if you can't make that trade-off, then give this one a pass.

---

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- Millennia C300: $1,199 ³2/mo. (Consumer Loan® for 48 mos.)
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**The Game Genres**

Our reviews are categorized by genre. Not every game fits neatly into a single genre, but here's how we define the categories in general:

- **Action** Games that emphasize fast gameplay over story or strategy.
- **Adventure** Games that require you to solve puzzles to move through a story line.
- **Classics/Puzzle** Classics are old standbys such as Chess and MONOPOLY. Puzzle games emphasize problem-solving without requiring gamers to follow a story.
- **Role-Playing** A subset of adventure games, these stress character development through attributes. The game world tends to be larger; the plot less linear.
- **Simulations** Highly realistic games from a first-person perspective, including flight simms and space simulations.
- **Sports** A broad genre encompassing action sports games, such as NBA LIVE; strategic sports games, such as FIFA FOOTBALL; and even driving games, such as CART PRECISION RACING.

**Strategy** Problem-solving and planning are the keys here. These games emphasize resource and risk-management. Includes conflict-based sci-fi and fantasy games as well as construction programs like SIMCITY.

**Wargames** A subset of strategy games, these re-create historical conflicts from a command perspective. They may be tactical, operational, or strategic.

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**How Do We Rate?** We review only finished products, not prerelease versions. The ratings are as follows:

- **Outstanding** The rare game that gets it all right. A must-play experience.
- **Very Good** Worthy of your time and money, but there are drawbacks.
- **Average** Either an ambitious design with major flaws, or simply vanilla.
- **Weak** Seriously lacking in play value, poorly conceived, or just another clone.
- **Abysmal** The rare game that gets it all wrong. Pathetic. Coaster material.
Master storyteller Roberta Williams brings her best-selling King's Quest series into the next millennium with a revolutionary blend of technology, gameplay and storytelling.

You alone have been chosen by fate to make an epic journey through seven amazing lands to recover the shattered pieces of the Mask of Eternity and restore light to a darkening world. Succeed, and honor and glory will be yours. Fail, and the forces of evil will reign supreme... for eternity.
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No Pot of Gold
RAINBOW SIX Is an Ambitious Might-Have-Been

by Raphael Liberatore

Holding my breath, I ordered, "Alpha, go!" Flash grenades detonated with muffled pops, followed by the distinct puff-puff of subsonic rounds fired from suppressed MP5s. "Tango's down! Tango's down!" blurted a commando. "Hostages secure," said another. "Bravo, go!" My men and I blitzed down the hall as the clap-clap-clap of three AKs rang out from the small firefight erupting in the room ahead. Screams of hostages and commandos taking hits stung my ears, terror ringing in every syllable. "Man down! Man down! We need backup, now!" In the doorway, Blue Team's leader slumped to the ground beside two bodies. Quickly setting my weapon to full auto, I signaled my team to engage....

Welcome to RAINBOW SIX (RG). Based on Tom Clancy's recent bestseller, RAINBOW SIX is the code name for an elite unit specializing in counterterrorist and QB (Close Quarters Battle) operations. As I'm a former SpecOps team member, a game that emphasizes planning and executing counterterrorist operations holds obvious appeal for me. Unfortunately, RG doesn't quite meet its mission goals, shooting itself in the foot when it should be taking out terrorists.

The Best-Laid Plans
After some opening FMV that details the establishment of the RAINBOW SIX unit as a response to growing global terrorism, you can train in several obstacle courses, gun ranges, and kill houses modeled after real elite forces' training environments. While the game's multiple keyboard commands will take you a while to master, the realism and technical accuracy of QB training is impressive, schooling you in fire and movement, planning, and teamwork.

RG combines planning and action, but the game's blood and guts reside in the mission-planning phase. Once a new campaign is selected, the game takes you to your first Mission Briefing. There you'll meet advisors who quickly set the scene and tell you your mission goals.

Next comes the Intel screen, at which point you gather background information on suspected terrorists and their organizations, key biographies, news clippings, and anything else pertinent to your assigned mission. Together, the Mission Briefing and Intel screens create a world full of machinations, adding to an already realistic gaming experience.

You can choose up to eight operatives per mission from an international pool of elite counterterrorists. Operative bios detail their cross-training and skill levels in assault, demolitions, electronics, and reconnaissance as well as ratings in leadership, stamina, aggression, and more. Remarkably, it struck me that none of RG's U.S. operatives had served with any of the United States' elite military units, such as SOF Delta, Navy SEALs, or Army Special Forces. For a game so concerned with realism, it's a notable omission.

Later, you pick each operative's equipment, called kits, before assigning each man to a team. RG allows up to four teams for deployment. Choosing equipment from the provided arsenal is a breeze and includes the popular MP5 or CAR-15 as well as flash-bangs and body armor—RG even has assault uniforms for a variety of terrain. After a few missions, you'll learn what equipment to take and what to leave behind.

After you've chosen and outfitted your team, it's time to plan the actual operation. Using a complex, 3D model of your mission site, you can plot waypoints and coordinate your team's actions via a simple.
mouse-driven interface. It's a powerful tool that detail-oriented strategists will love, but which many action buffs might find tedious. Fortunately, some missions have a default operational plan available for lazy planners.

Cleaning House
Finally, your teams deploy at the mission insertion point. You play as one team leader from either a first- or third-person perspective, with your team shadowing your every move, regardless of waypoints. If you're killed or incapacitated, you can switch after egos. At this point, all that planning goes out the window and success depends more on your shooting skills than your planning aptitude. In fact, if you're particularly good, you can complete some missions solo. However, this is not very realistic.

Orders that you've given direct the actions of other teams, and you can change their engagement mode at any point by clicking on the Rules of Engagement keys. The action phase ends when all mission objectives have been met or all terrorists have been eliminated.

Combat is real and fluid, with one well-placed shot dropping a terrorist in his tracks in most cases.

Smoothly animated characters, realistic 3D graphics, and ambient sound work together to build a sense of tension as opposed to the gore-soaked mayhem of other first-person games like QUAKE II.

Multiplayer options include LAN or Internet play with free Mplayer service. Setting up the multiplayer is a bit cumbersome, but it's worth the effort. To command other players during Internet play, you'll need Voxware. Co-op play is addictive, but deathmatch is less enjoyable.

Friendly Fire
Despite ambitious stabs at realism and fluid gameplay, R6 has some serious glitches. First and foremost, the AI is wanting—both team members and terrorists often act like zombies. Terrorists continue patrolling outdoors and stroll past dead comrades, while others completely ignore getting shot at or blinded by flash-bangs. Once you get inside, however, the enemy AI is tough and challenging. Your supposedly elite team members aren't immune to AI deficiencies either—at times they seem to want to get killed.

I considered myself fortunate if team members moved beside me rather than in front of my firing reticle. A few times, I was forced into locating missing team members stuck in corners or running in circles. Who trained these guys?

Out of the box, R6 is a buggy game that crashes frequently. Red Storm promptly released a patch, and I suffered only one crash after installing it. Additionally, clipping problems have both operatives and terrorists popping through walls. Also, you cannot adjust your mouse speed.

In spite of all this, I still find myself coming back again and again to play RAINBOW SIX. While the folks at Red Storm obviously did their homework on counterterrorist operations (and the technical realism shows), the faulty AI and game-killing bugs get in the way of what could have been a benchmark game—a game troubled by what it could have been.

Counterterrorism 101

Match the team's specialty to mission objectives: if the mission calls for reconnaissance, use the operatives with the best stealth; to bug a phone, use operatives skilled in both stealth and electronics. Also, assign one demolition expert per team for breaching doors and disarming grenades.

Use Ding Chavez as your main alter ego. With the best skills of all operatives, he'll increase your chances of survival and, therefore, success.

Use the Sniper mode and cover to eliminate tangles from a distance and avoid direct conflict. Keep flash-bangs to a minimum because they are weak imitations of the real thing.

Remember to rest your operatives from mission to mission since fatigue will adversely affect their performance. In fact, preserve your men by planning a mission with two twoman teams. Lead one while using the other as backup. You can exploit the inadequate AI to beat most missions this way.

Apply the military acronym KISS (Keep It Simple, Stupid) when planning waypoints. Use Alpha Codes for one team, while assigning Bravo Codes and Charlie Codes to other teams. Use the Delta Codes for special actions, such as disarming bombs or escorting prisoners.
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Life During Wartime

Same Old Supertank, Different Story

by Pete Scisco

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Welcome to the Dungeon

Leather G-strings and Exploding Pigs Aren’t Quite Enough for Greatness

by Kenneth Johnson

Outside the lonely village of Fang, the sinister Dungeon awaits. Within its labyrinthine depths are hostes of wicked creatures, fiendish traps, and, for the brave soul who ultimately conquers it, glory. No one who has entered has ever returned. Now it’s your turn to run this gauntlet of death in DEATHTRAP DUNGEON, Eidos’ new addition to the third person action/adventure genre.

Lara Croft in a Chain Mail Skirt

DEATHTRAP DUNGEON is very similar to TOMI RAIDERS, in that you control either a male or female adventurer from a third-person perspective. Your character’s abilities include jumping, running, climbing, attacking, and casting spells. Though focused on combat, the game has very strong puzzle solving elements interspersed with deadly, insidiously disguised traps. There’s some platform jumping, but responsive controls actually aid instead of hinder the execution of these daredevil leaps.

Puzzle-solving consists mostly of finding and throwing switches to open doors, beyond which you find keys for even more doors. Find the keys and survive the onslaught of creatures and eventually you’ll find your way to the exit. It’s standard fare, but solid design and a well sense of humor keep the game from becoming humdrum.

You’ll find more than a dozen weapons scattered throughout the levels, ranging from swords and hammers to muskets and, my personal favorite, the all-consuming flamethrower. In addition to charming everything in its path, the flamethrower looks stunningly real and shows off the game’s excellent dynamic lighting and top-notch 3D rendering. Your character’s spellcasting repertoire includes such things as fireballs and the shrapnel-blasting razor spell, but the coolest spell in the game is, undoubtedly, the War Pig. Casting War Pig summons a snorting pig with a barrel of gunpowder strapped to its back. As the fuse burns, the pig rushes the nearest creature and detonates—it’s effective and hilarious.

Levels are enormous, so being lost is not uncommon. Luckily, you have a piece of chalk for marking arrows on the floor to track your path. This is especially useful when trying to escape the cavernous and twisted halls of some levels. The graphics are also really gorgeous, with some of the coolest textures to be found anywhere. In the minotaur’s labyrinth, for example, you’ll happen upon colorful frescoes and crumbing columns.

Unfortunately, there are some clipping problems, and visible seams can frequently be seen on your character’s joints. Games are saved only at predetermined points in the levels. This can lead to situations in which you have to repeat a sequence multiple times if you die before you reach the next save point. Fortunately the save points are at logical locations and appear relatively frequently. Also, reloading a saved game does not take much time, which is very good since you tend to die quite a lot.

Die Laughing

DEATHTRAP DUNGEON’s most redeeming feature is its dark, whimsical sense of humor. This is apparent from the opening FMV cut-scene, but it can really be seen in the design of the creatures that populate the world. The imp’s are twisted Santa’s elves who gibber and caper dementedly—on one level I encountered two of them, balanced on a seesaw, laughing and tossing knives. Other creatures you’ll meet include mad jesters, snake-girlls, bizarre flamethrowing barrels with legs, and others.

I really enjoyed this game. When I first encountered it on the Sony PlayStation, poor control and sub-par graphics kept me from getting into it. I’m happy to say that these problems do not exist with the PC version, which plays well. However, some graphic glitches and the console save system will get in the way of many computer gamers’ enjoyment.

APPEAL: Third-person aficionados who crave hacking, slashing, and spellcasting.

PROS: Good concept; attractive graphics; good control; unique and humorous design.

CONS: Game can be very difficult at times; some clipping and polygon-tearing problems; game-save allowed only at designated points.

DIFFICULTY LEVEL: Advanced.

SYSTEM REQUIREMENTS: Pentium 90, Windows 95, 1MB RAM, 16MB hard-drive space, 4x CD-ROM drive, DirectX-compatible graphics, sound, mouse, joystick supported.

3D SUPPORT: Direct3D, 3DFX Glide

MULTIPLAYER SUPPORT: LAN (2-4 players), 1 CD per player.

Price: $49.99
Publisher: Eidos Interactive
San Francisco, CA
(415) 547-1200

www.eidosinteractive.com

ONE HOT BABA Flamethrowers are among the most powerful weapons at your disposal. But how safe is it to be playing with fire when you’re wearing a skimpy leather G-string?
Between a Rock and a High Place

STRATOSPHERE's High-flying Combat Is Unique but Lacks Depth

by Mark Clarkson

STRATOSPHERE is a novel new game of uncertain genre. Part real-time strategy game, part third-person shooter, STRATOSPHERE offers a unique blend of base-building, piloting, resource gathering, and combat.

In the game, you might find yourself careening down a narrow canyon at top speed, barely ahead of a pack of Hurricane-class forts. Steering by radar, you work desperately to rebuild some weapons before you're cornered. You glance behind you just as one of the Hurricanes fires her forward Doom cannon. Since you've got no room to dodge, a huge explosion blasts the back of your war island apart.

devastating your thrusters. Losing speed rapidly, you heave your gargantuan fortress into a turn, hoping to bring freshly constructed weapons to bear before the Hurricane's spikes rip into your flank.

Sound like fun?

Cloud Giants

In STRATOSPHERE, you command a flying fortress built on huge slabs of fortified rock floating a mile above the ground. Resources, in the form of rock, floatstone (which gives your fort its lift), and crystal, are scattered about the different levels to various degrees. To gather resources, simply cruise up next to the outcropping and the rock crumbles, raining on your fortress. You can also steal rock blasted off opponents' ships.

You equip your fortress with a wide variety of structures that provide power and maneuverability as well as weapons, defensive walls, and shields. Your designs are constrained by your current technological level (windmills before fusion plants), the maximum size a fortress of a given class can obtain, and the resources that are available to you.

Who Needs a Moat When You've Got Lasers?

Your fortress can be packed with weapons such as catapults, cannons, mines, lasers, and rock-eating augers. All your weapons may be fired simultaneously, individually, or you can group them together in strategic combinations. Some weapons stab out with laser-like beams, others fire like guns, while others lob their payloads up and over in high swooping arcs.

A fortress doesn't necessarily need weapons to be deadly. Pack your fortress with a mass of powerful engines and a load of spikes up front, then ram or grind an enemy to dust against a mountainside without firing a shot. Whatever course you take, you'll need to use the game's different camera views to aim effectively—a low angle for the cannon, a top-down view for the high obstacles. With enemy forts coming in from the front, left, right, back, or all four sides, it takes real keyboard virtuosity to keep most of the fight in view.

Luckily, STRATOSPHERE helps you out with an extensive automatic targeting system. Weapons can be instructed to automatically target enemy forts that come within their firing range. Moreover, they can be set to target specific fixtures on that fort.

You can choose from 12 single-player missions, from escort duty to bombing raids, or you can embark on a 24-mission career. Old in later missions do you have the much-needed opportunity to design a custom fortress for each mission.

There are eight multiplayer missions that support up to four players, only one of whom needs to have the CD. Internet play via TCP/IP was especially "warpy" for me, so STRATOSPHERE might be best played on a LAN. Unfortunately, multiplayer mission selection isn't terribly diverse; most missions are various deathmatches, with a few defensive, escort, and ground-strike missions thrown in. There is no AI to allow for two-player team play.

STRATOSPHERE doesn't offer deep gameplay. The strategy component of this pseudo-RTS game is largely limited to fortress design. Once you've done that, it's pretty much a shooter, albeit a shooter featuring giant, gun-laden chunks of rock. Still, this fresh real-time game is a blast.

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Haven't I Seen You Before?
Familiar Faces Surface in These Action Titles

Gex: Enter the Gecko

Publisher: Midway Home Entertainment
Price: $29.99
www.midway.com

The original GEX held the distinction of being the world's first 32-bit home video game. This sequel, which requires 3D-compatible video acceleration, delivers a highly detailed, free-roaming, 360-degree gameworld, colorful enemies, and eye-popping special effects. Comedian Dana Gould reprises his role as the voice of Gex, spouting a huge repertoire of witticisms and hip putdowns.

Once again, Gex battles his arch nemesis, Rez, in a series of media-related fantasy worlds, such as the Rocket Channel, Toon TV, GilliGex Island, and Kung-Fu Theater.

Stylistically, this game owes much to MARIO 64 and its assorted clones. The crucial differences, however, are intelligence, humor, and attitude. Although the visual and verbal gaps in GEX can be enjoyed by gamers of all ages, many of the game's jokes are aimed at a slightly older, more sophisticated audience.

In addition to Gex's trademark tail-whip and razor-sharp tongue, players can use his suction pads to climb walls and to walk on ceilings. This ability to stick to virtually any surface propels the game into uncharted 3D territory—in terms of freedom of movement, puzzle challenges, and player strategies. A player-controlled, in-game camera lets you choose which viewing perspective is best for any given situation.

Fast and fun, with 125 unique character moves, 3,400 frames of animation, and massive level designs, GEX: ENTER THE GECKO is a visual knockout. If you're hungry for 3D console action on the PC, this lizard can deliver. —Scott A. May

Revenge of Arcade Golden Edition

Publisher: Microsoft
Price: $24.95
www.microsoft.com

For those of us who spent far too much of our childhood trying to see how much mileage we could get out of a single quarter, the repackaging of legendary arcade games can't help but elicit a smile. Still, if nostalgia were everything, we'd be playing WOLFenstein 3D instead of QUAKE.

So the games themselves need to offer something you can't always find in today's 3D-accelerated, memory-hogging monsters: a sense of style.

The problem is that Microsoft's REVENGE OF ARCADE GOLDEN EDITION offers little in the way of either style or substance. You won't find GALAXIA or ASTEROIDS here or even cult hits like BURGER TIME.

What you get are games like XEVIOUS, a sci-fi flier in which you dodge swooping enemies but can't shoot back. For a change of pace, you can play MAPPY, a ho-hum side-scroller, or you can bounce space bugs around in MOTOS. While I will admit to having a bit of guilty fun zipping around in X RACER, these harmless games are more likely to appeal to the Senator Lieberman crowd than they are to rip most of us away from G-POLICE or SCOURGE OF ARMAGON.

The big exception is MS. PAC MAN, which still brings me as close to a state of Zen as I've ever achieved in gaming. Even so, the lure of a single true arcade classic is no reason to recommend lining Bill Gates' pockets when you can find the same games (or inspired takeoffs) via the Internet for free. —Terry Coleman
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Hard-core Space War

Real Physics and a Solid Story Push This Space Sim to Warp Speed

by Greg Fortune

If you're piloting a high-tech starship, how come you have to make wide, banking turns to fire on a following ship? Why is a spaceship that can travel between star systems equipped with unguided missiles? And why the heck does a spaceship come to an immediate stop in a gravity-free vacuum when you kill its thrust? If these questions have nagged at you while flying previous generations of space sims, beam aboard INDEPENDENCE WAR.

Developed by Particle Systems, INDEPENDENCE WAR is an updated U.S. version of the space sim released in Europe earlier this year as I-WAR. New to the American release is support for 3Dfx Voodoo and Voodoo² cards, as well as an arcade mode for those gamers more comfortable with Wing COMMANDER-style combat.

Degrees of Freedom

The most striking aspect of INDEPENDENCE WAR is its physics modeling. While it would be absurd to call a starship flight model "realistic," the ship handling here at least acknowledges the basics of Newton's laws.

Piloting your ship is a blast. Once you get the hang of managing the inertia and using free-thruster mode, you'll wish every space game had this physics model. Take this scenario as an example: You are being chased by an enemy who has damaged your weapons and is pounding away at your rear shield—which, of course, is by far the weakest shield on your ship. In most space sims, it's curtains for you.

Here you can jump to the engineering console and direct Repair Team Four, which was busy trying to repair Power Grid Two, to get your starboard Particle Beam...

FINAL APPROACH The physics model in INDEPENDENCE WAR is dead-on. That makes this simple approach very difficult.

SLIP-SLIDIN' AWAY This is free-thruster mode. It may not look like the ship is chasing the target, but the red visual movement indicators show otherwise.
Cannon back online. You then jump to your weapons console, place the PBC in rapid-fire mode, and at the same time activate free-thruster mode. When you pull the stick back, your ship continues its original trajectory but rotates 180 degrees to face the ship behind you. You are now flying backward at high speed, taking hits to your strongest shield. You've also kept all of your momentum, and you've got your PBC blazing away at your enemy's navigational thrusters, hampering his ability to pursue you. Finally, a space sim that truly lets you take advantage of the capabilities of a spaceship, rather than saddling you with something that flies like an F-22.

Command and Control

The ship's bridge has four command stations, each of which is critical to your success at various points in a mission. The command station gives you the ability to view the rotating 3D star chart, initiate remote control over other ships, and review your mission briefing and objectives. The pilot's station supplies most of the information about waypoints and distances.

The weapons station provides both fixed and padlock views and allows you to select your firing and targeting modes. The padlock view gives you access to both forward- and rear-facing weapons, enabling you to fire on multiple targets from almost any angle. Finally, the engineering station lets you prioritize the repair of critical systems as they become damaged in combat.

To play INDEPENDENCE WAR, you'll want to have either a set of rudder pedals or a joystick with a Z-axis twist, because the game gives you full control of the ship's pitch, yaw, and roll axes. A good programmable throttle will also add to your enjoyment, but the game is entirely playable via keyboard and joystick.

From Here to Infinity

There are two modes to INDEPENDENCE WAR: Simulation and Arcade, the latter added for the U.S. market. The game's Arcade mode is most similar to the standard mode of other space sims. Here the sideslip from your forward inertia is canceled when you turn, and there are several other areas in which the flight model has been dumbed down. Your weapons are more powerful, though you lose some targeting options. Simulation is the standard mode, with all options and physics turned on.

You can replay a mission to try for a different outcome, but you'll lose the timeline you developed the first time you played through.

At press time, Particle Systems announced that it would be releasing a free modification utility and script programming reference document to allow users to create their own missions and campaigns. Play would also be extended if hardware acceleration for 3Dfx Voodoo (640x480 resolution) and Voodoo2 (800x600) cards. On these cards, you'll see more dramatic special effects as well as more detailed, texture-mapped ships. If you don't have a 3Dfx card, though, you're still likely to be impressed by the software engine.

The game starts with a high-quality animated movie that runs nearly 15 minutes. But that's the end of the interface flash-and-dazzle. While the interface you use to select missions is intuitive and functional, it's positively minimalist—it's practically anti-rendered. After all the shock-to-the-brain interfaces that have come out lately, it's nice to see a company put all of its effort into the game itself.

Installation is extremely straightforward, and Infogrames has also included plenty of documentation with INDEPENDENCE WAR.

Spaced Out

Despite its lack of a multiplayer mode, this is a game you should seriously consider picking up if you like space sims. You've never flown anything like it. From the branching missions to the radical physics model, it delivers a new space-sim experience. Once you've experienced INDEPENDENCE WAR, you may find there's no going back to arcade-style space sims.

There are two types of missions: campaign and instant action. The instant-action mode is called Infinity War because that's how long the battle will go on if you manage to keep from getting blown into tiny pieces. As you'd expect, you'll face more after wave of enemy ships, but as an original touch, friendly units periodically appear to lend their efforts as wingmen. Supply ships also happen along, enabling you to restock your missile and ECM stores.

The campaign is extremely well done. There are numerous mission types, including spy missions, surgical strikes, fleet warfare, and pitched one-on-one battles. Often your mission orders change mid-stream and you are taken in unexpected directions. You'll be asked to make choices that dictate the direction of the future missions. If you decide to see what happens down a different branch of the campaign, you do not have to replay the entire campaign. You there were a multiplayer mode, but alas that's the biggest omission in this otherwise stellar product.

It's All About Gameplay

The European I-WAR release featured a software graphics engine with real-time lighting and extremely fast updates. The biggest enhancement to the U.S. version is...
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Dynamic Performer
The Last F-22 Sim You’ll Ever Need

by Tom “KC” Basham

It’s the rarest of endangered species with only a handful of examples in captivity and none known to be in the wild. Like a unicorn and almost as rare, it’s been sought for years by hunters and treasure-seekers, who more often return with a wild “There I was” tale than with concrete evidence of its existence. The creature in question is, of course, the dynamic campaign, a mode of play for a flight sim (or any game, for that matter) that generates each of the opponent’s moves on the fly throughout the entire war.

Whereas the more common scripted-mission system provides a set of canned missions that play out nearly the same way every time, dynamic campaigns promise that each mission will be different based on the circumstances of the previous missions. The sim equivalent of the unicorn, the dynamic campaign offers not a magic horn but the pledge of unlimited replayability. D.I.D. is one of the few companies truly pursuing the dream of the dynamic campaign, and its latest offering—F22 TOTAL AIR WAR—fully embraces the concept with a quite admirable effort.

Depending on whom you talk to, F22 TOTAL AIR WAR is an add-on pack for D.I.D.’s F22 AIR DOMINANCE FIGHTER, a complete sequel to F22 ADF, or a totally new product. For all practical purposes, it is an enhanced version of F22 ADF, implementing a dynamic campaign engine with 10 new scenarios.

War Zone
F22 TAW’s campaign engine features scenarios located along the shores of the Red Sea. “Politically correct” gamers should receive a double helping of joy. First, the scenarios feature underutilized (in flight sim countries such as Ethiopia, Eritrea, Somalia, China, France, Yemen, Djibouti, and Saudi Arabia along with the United States, Great Britain, and Russia. Also, almost every country—even France—finds itself both an ally and enemy of the U.S. in various scenarios. Everybody gets to be the good guy at one point or another.

Each campaign has a time limit for example, 72 hours. During the campaign, the computer chooses a strategy for both sides and begins slugging it out. Individual strategies will usually have a shorter limit, perhaps 10 hours, in which to show results. The engine may choose a different strategy when that time expires, depending on the progress of the war.

The war proceeds, generating and executing missions for both sides. The engine presents players with a list of F-22 missions, letting you join battles at will. Players can measure the progress of the war in the War Room. The menu options display, among other things, the sorties flown by both sides and the damage inflicted. The map view lets you view the progress of specific battles as the war unfolds. When you decide to fly a combat sortie, you can accept the default flight plan and weapons loadout, or you can use the mission editor to configure items according to your tastes and tactics.

DID’s original WarGen campaign engine battled merely along its way with little regard to the players’ personal success rate. This drew complaints from gamers, and DID promptly altered its course.

F22 TAW’s enhanced dynamic campaign was developed with the assistance of Col. John Warden, one of the planners of the Desert Storm air campaign. This system seems to reflect the success and failure of the individual player in
REPORT CARD: The Event Log keeps you apprised of specific battles and actions. After you've flown a mission manually, a flight recorder lets you view a detailed replay.

Airborne Warning and Control System

Although it carries no weapons and never dogfights with an enemy fighter, the E-3 AWACS (basically a Boeing 707 loaded with electronics) is possibly the most powerful aircraft of all. Capable of staying aloft for more than 11 hours, the AWACS uses its powerful radar to monitor all airborne activity over a huge area. During the Cold War, the USAF claimed that just three AWACS could monitor the entire East/West border across all of Europe. The plane's radar output power is reportedly high enough to cause system failures and malfunctions in aircraft that stray too close while the radar is emitting. The inclusion of an AWACS console in F22 TAW gives you unprecedented control over the tactical situation, in a realistic manner.

My Father's Eyes

As in F22 ADF, you can choose to fly an E-3 AWACS sortie rather than an F-22 sortie. The interface is reasonably simple: The screen displays a variable-scale map of the war zone along with buttons to filter out various types of targets, such as air bases, ground units, and so on. The map, using either standard NATO symbols or stylized icons, shows the position of all items within the E-3's impressive radar reach. Other information, particularly ground-unit information from JSTARS aircraft, is also data-linked in. The result is a fairly thorough picture of the area, depending on how close the AWACS and JSTARS operate to the FEBA (Forward Edge of the Battle Area). Operating deep in friendly territory keeps the asset safer but limits the radar coverage of small, low-altitude targets. Moving forward improves the coverage but increases the risk to your hull.

As you watch the drama unfold, you direct friendly forces toward targets by clicking on the desired aircraft and dragging a new waypoint to the desired location. Depending on the aircraft's mission and what objects lie at the waypoint, the aircraft assumes new orders. For example, dragging a new marker for a Combat Air Patrol (CAP) flight simply moves that CAP flight to a new position on the map. Dragging the cursor to an enemy air group, however, issues an "Intercept" command against that group.

Aircraft on strike missions won't redeploy like a CAP aircraft will. Instead, you must drag the marker to a new target. The aircraft then changes course and proceeds to strike the new target. Once engaged in a dogfight, however, the aircraft all but ignores player input until the fight is resolved. You can direct your E-3 just like any other aircraft, choosing how close to the front you want to operate. You can also jump from the AWACS screen into any in-flight F-22 if you want to join the action.

The Value of a Dollar

As a flight simulator, F22 TAW will appear extremely familiar to F22 ADF players. Overall, the flight model is a reasonable effort, although it seems a little overpowered. It's a little difficult to slow the aircraft if the nose is pitched down slightly—especially during landing—even with the gear down, the speedbrake extended, and the throttle at idle. As with F22 ADF, F22 TAW features a thorough avionics and weapons suite, including highly detailed (for a flight sim) radio communications. F22 TAW, like its predecessor, features the most realistic aerial refueling modeling currently available on the PC. F22 TAW is an impressive product that's extremely stable (no fatal crashes were encountered) and which features single-mission multiplayer support. If you missed F22 ADF, you should have no qualms about purchasing F22 TAW as a full retail product.

After complaints from F22 ADF users on the Internet, publisher Infogrames announced that existing F22 ADF owners would be able to upgrade to F22 TAW at a lower cost. For more information on the pricing issue, check DID's Web site at www.did.com.
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Half-Baked Hornet

Bugs Shoot Down This Potentially Interesting F/A-18 Sim

by Robin G. Kim

After enduring stinging criticisms of their debut release, IF-22, the in-house developers at Interactive Magic felt they needed to follow up with a real winner. Their formula called for rectifying that sim's deficiencies while porting its strengths to a new title based on the U.S. Navy's hot new Super Hornet. If all went well, F/A-18E CARRIER STRIKE FIGHTER (CSF) was to be Interactive Magic's redemption in the eyes of flight-sim fans. Alas, the best-laid plans of developers and testers often go astray. The sim has shipped with a boatload of bugs. This is not to say that CSF is completely without merit. It actually displays potential in several key areas, most notable of which is its dynamic campaign engine.

Pick Your Poison

The game's two campaign scenarios pit U.S. forces against an invading aggressor: in one, the Turks in the Aegean theater; in the other, the combined armies of Iran and Iraq in the Persian Gulf. Your initial goal in each is to help pave the way for a Marine amphibious invasion. Once the troops are ashore, the war continues until one side has gained control of a preponderance of victory locations.

Before each flight, CSF generates a set of missions (from among 15 different types) for the Super Hornets in your squadron, based on whether the invasion has taken place and what assets remain on each side. Reinforcements are also calculated, though a bug prevents your squadron from ever receiving the replacement aircraft it is due. After selecting the flight you wish to lead, you may use the mission planner to edit the default waypoints and each plane's leadout and fuel level (advisable, since fuel is sometimes set dangerously low). Once the mission is completed, losses are tallied up and the cycle begins again. That is, if the program doesn't crash halfway through, as occasionally occurs, forcing you to restart.

Apart from the campaigns, there are some simple training flights, a quick-mission creator, randomly generated single missions, an instant-action mode, and multiplayer deathmatches. Support for cooperative single missions may be added in a patch; in the meantime, multiplayer fans can try WARBIRDS, which is included on the same CD.

Graphically, CSF is similar to IF-22, yet with several welcome improvements. Gone are the annoying pauses for loading terrain that plagued the older sim. Smoke trails are also improved. And while the haze-shrouded, satellite image-based terrain still looks good only from higher up, the sim boasts impressive frame rates (with or without a 3D card) at resolutions from 640x480 to 1024x768. View options include a set of fixed views, 45 degrees apart, and basic manual-panning and autotracking pedalview views. The game's graphics cannot be called pretty, but they are functional despite some minor glitches. Complementing the visuals is a suite of realistic sound effects, including "Bitching Betty" warning messages that were recorded from an actual F/A-18.

Enough Rope to Hang Yourself

CSF definitely holds its own in the flight-model department. The sim combines realistic performance with an exceptionally fluid feel. Its main drawback is a high joystick gain that puts a premium on
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finesse. Hornets are known for their pitch authority, and that comes through here. Maneuver the controls and you'll find yourself in an accelerated stall or nasty spin nearly every time. Those who have difficulty staying that far ahead of their aircraft can opt for a relaxed flight model, but it's simplistic; no middle ground is provided.

Systems modeling is rather complex, with multiple radar and HUD modes, a FLIR (forward-looking infrared) sensor, TV-guided munitions, and several autopilot modes. You can even get target information data-linked to your scope from the carrier's E-3 Hawkeye if it's flying. But if you ask it for bogey information over the radio, it will always give a bearing of 042 in its response—another bug. Other problem areas include some target designation methods that do not work as advertised and some short-lived blips in the ground-mapping radar mode that make selecting a contact resemble a game of "Whack-a-Mole." Fortunately, cheat keys that allow you to cycle through all nearby targets provide a usable work-around to this glitch.

Guided Missiles

Your Hornet can carry many types of ordnance, from JSOWs (Joint Standoff Weapons) to cluster bombs. Weapons modeling is reasonably accurate except for one glaring exception: Missiles are much too easy to dodge. Unless a missile approaches its target from in front or behind, it will miss every time, even if the target does not maneuver or drop countermeasures. The AI often leaves SAM tracking radars off until its search radars indicate that you are within their firing envelopes. At this point they unleash a torrent of missiles at you so this glitch also benefits your life expectancy. Nonetheless, it makes for some mighty strange and equally unsatisfying air-to-air combat. If you look past the many bugs, which may eventually be remedied by patches, CSF is a decent sim with good depth and a fine campaign engine. Its potential would, of course, be greater if the sim's joystick response curve and missile modeling were improved. However, gamers buy games to play them, not to contemplate how good they could be with fixes and changes. Out of the box, CSF fails to measure up.

**GOOD OLD RAND MCNALLY** The planning map uses too large a scale to give detailed terrain-contour information, but it is useful for planning a route around enemy SAM concentrations and combat air patrols.

---

**Carrier Operations**

Landing a multimillion-dollar jet fighter aboard a moving aircraft carrier is one of the most rigorous tests of flying skill that a pilot—real or simulated—can face. This sweaty-palmed challenge is perhaps the defining characteristic of a contemporary naval fighter sim, so it is important to legions of sim fans that it be done well.

CSF gets it half right. Radio communication with the carrier lets you clear your approach, and the Landing Signal Officer who talks you down to the 1000-foot-long deck is reasonably helpful. Unfortunately, apart from the ILS needles, most of the other aids do not work. The carrier's "meatball" (glideslope indicator light) is illegible even at 1024x768 resolution, and the flight-path marker on the HUD exaggerates your angle of descent. Though flight performance and throttle response in a landing configuration seem realistic, unusually high joystick sensitivity makes it difficult to execute fine pitch corrections. The ACLS (Automatic Carrier Landing System) is not much help since it is highly unreliable. Given these difficulties, it's probable for the best that the sim lets you get away with hard touchdowns. Note, however, that due to a bug in the "realistic" flight-model option, your aircraft will self-destruct a few seconds after you catch a wire unless you exit the mission immediately. Besides the landings, other aspects of carrier operations are glossed over. Catapult launches are modeled, but no taxiing is involved, and the jet blast deflectors mentioned in the manual are not even visible in the actual game.
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Defending the Homeland
Take to the Skies With One of the World’s Most Proficient and Experienced Air Forces

by Robin G. Kim

Repeatedly put to the test in some of the most intense jet versus jet combat of the modern era, the Israeli Air Force has consistently emerged victorious—usually by a wide margin. The Israeli Defense Force’s air arm is one of the most experienced and highly trained air forces in the world. IAF, the debut release by Israeli developer Pixel Multimedia for Jane’s Combat Simulations, traces the fighting history of the Israeli Air Force from the 1967 Six-Day War and the 1973 Yom Kippur War through a set of hypothetical near-future conflicts.

NAP OF THE EARTH Despite some low-level muddiness (or pixelation, if you don’t have a 3D card), the terrain textures in IAF give you an excellent feel for your altitude above the heavily contoured ground.

The game features six campaigns, each consisting of seven prescribed missions. The battles variously pit you against the Soviet-equipped forces of Syria, Egypt, Jordan, or Iraq (or, as in the Six-Day War, all four at once!). For the three historical campaigns, missions may be flown in any order. In the three hypothetical campaigns, set in late 1999, you must win each mission to advance to the next.

Juggling Cockpits
Campaign scenarios are often quite complex, requiring you to control up to four flights of two aircraft each to accomplish the mission objectives. "Control" here consists of more than merely issuing orders over the radio; in IAF you physically take control by transporting yourself into the cockpit of the flight leader’s aircraft. (Commanding your wingman is still done the old-fashioned way, using six basic radio directives.)

A typical mission objective might be to suppress a target area’s air defenses with a Wild Weasel flight, taking out any air threats with a TARCAP (target combat air patrol) flight, then reduce the objective to rubble with a bomber flight. As you can imagine, hopping from plane to plane can become hectic. Fortunately, the AI is capable enough that you don’t have to do everything yourself. Your guidance is needed primarily for tactical decisions and complicated ground-attack procedures. You can break the sim’s difficulty, but note that the enemy AI setting has a hug. "Expert" is actually the easiest mode, with "Rookie" and "Normal" both offering a much greater challenge.

Mission briefings are thorough, detailing exactly what each of your flights is supposed to do. Both waypoints and weapon loads can be customized for all aircraft under your control. During play, you can access the map (the same one used for preflight planning) to monitor the tactical situation in realtime or to switch control between flights. Missions start you out either in the air or on the runway and can be ended as soon as you achieve the last objective. But you can also fly back to base and taxi into a hangar, then watch your wingman and surviving friends do the same—a nice touch.
Tom Clancy’s RAINBOW SIX

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The most revolutionary action/strategy game of its kind. Nothing comes close to offering such an exciting combination of strategy, team-building, realistic, three-dimensional graphics and true-to-life special forces action. **ONE SHOT KILLS.** The ultimate goal is to save yourself and the world from deadly terrorists. You must successfully complete 17 unique missions, and if you die, the game isn’t over: THE WORLD IS.

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In addition to the campaigns, the game provides 11 excellent interactive training flights, a simple mission builder, and 7 scramble missions. The latter are canned missions that put you in the cockpit with no briefing; your objectives are radioed to you on the fly.

Eye of the Beholder

The terrain graphics are perhaps the most controversial aspect of IAF. They resemble grainy videotape footage of actual landscapes, but with a shimmering effect (not apparent in the screenshots) that you will likely find either annoying or inconsequential. Beyond the looks, the graphics engine does an exceptional job of portraying the region's landmarks and complex topology without a hint of blockiness, rendering it all out to an impressive distance at the maximum detail level. Best of all, reading the terrain is completely intuitive. Low-level flying over such fine contours has never been so easy in a sim—an important consideration when you're hugging valley floors to avoid enemy radar.

Frame-rate at 640x480 (the only supported resolution) with a good 3D card will be acceptable for most PCs, albeit with substantially coarser graphics on slower CPUs. Running the sim without 3D acceleration should yield adequate performance with detail settings minimized. But on my PC it also resulted in frequent long pauses (probably due to a compatibility problem), which rendered the game unplayable until I reactivated my 3D card.

IAF's cockpit view system includes nine fixed views and a manual panning mode, but large gaps in coverage and slow panning speeds will force you to rely on the sim's autotracking padlock view in combat. This versatile view can lock onto air and ground targets, your wingman, incoming missiles, other nearby threats, or the centered object in any of the other views.

Technological Progression

Over the 32-year period covered by IAF, you will progress from the French-made Mirage III, through the venerable F-4E Phantom II, to more modern aircraft such as the F-15 Eagle, the F-16D Fighting Falcon (two-seat variant), the F-4 2000 (an upgraded Phantom), and Israel's own Kfir fighter-bomber and Lavi advanced technology demonstrator. A generic set of avionics features, key commands, and symbology is used for all the planes, with each type having its own specific combination of capabilities. Older planes have basic radar sets and weapon selections, for instance, while the newest are equipped with far-seeing radars, a track-while-scan mode, and helmet-mounted sights, and have the ability to carry more advanced weaponry. The result may not be detailed enough to satisfy hard-core realism fanatics, but it is impressively close to a functional perspective—especially considering how many aircraft are modeled—while striking a balance between complexity and playability.

The sim offers a good variety of ordnance types, including laser-guided bombs (with forward-looking infrared pods to designate targets), TV-guided bombs and missiles, Sidewinders (both older rear-aspect and contemporary all-aspect versions), semiactive radar-homing Sparrows, AMRAAMs, and Israel's Python 4 (arguably the deadliest dogfight missile in the world). The weapons modeling is good, but the lack of ballistic drop for cannon shells makes gun kills easier than they should be.

The flight model in IAF is somewhat simplified. Low-speed maneuverability of aircraft has been exaggerated for playability, but performance is otherwise fairly accurate and varies greatly between aircraft types. Though some realistic effects, such as accelerated (high-speed) stalls and rudder-induced roll, have been omitted, spins are still possible if you get careless. Control feel is normally nicely fluid; however, at low speeds it becomes extremely sensitive (the opposite occurs in real life), making landings and takeoffs unsatisfying.

Sim Synergy

IAF is clearly not the most accurate flight sim around; it tends toward "good enough for most" realism and manageable complexity. Its true strengths, which draw you back mission after mission, arise from its blend of engaging mission designs, novel plane selections, and originality of concept—a remarkable combination.

Maximum Multiplayer

In addition to the usual deathmatches, IAF lets you play all six of its stand-alone campaigns in cooperative multiplayer mode. There are also six multiplayer-only single missions included, and you can generate custom team-based missions using the game's mission creator. Up to six players can join in on a LAN or over the Internet; unfortunately, modem and direct connect links are not supported. Internet gamers can meet up for multiplayer sessions at Jane's Combat.net Web site; point your browser to www.janescombat.net. Multiple chat options are available for choosing the recipients of your text messages. If you're too busy to type, you can send canned messages via function keys.

For more realistic matchups in deathmatches and custom multiplayer missions, the sim expands the list of flyable aircraft types to include the MIG-23 Flogger and MIG-29 Fulcrum. Each craft is fully supported, with its own cockpit graphics, flight model, and Soviet-made armament. Since the two MIGs are also available in single-player custom missions, Egyptian/Syrian/Jordanian/Iraqi players can practice flying them offline.
Flies Great, Less Thrilling

Despite Numerous Improvements, FIGHTER ACE Remains a Light Experience

by John Nolan

The first version of Microsoft's FIGHTER ACE, a WWII multiplayer air-combat game, gave the impression that it was rushed out to provide content on the company's Internet Gaming Zone. The basic flight model was decent, and the graphics were quite good. However, the gameplay had distinct problems with airfields too close together, no play features except dogfighting, and a view system that was poorly designed. The price was also high at $20 a month. To improve the situation, the Zone recently launched FIGHTER ACE 1.5.

Size Matters

The small game map in the original FIGHTER ACE had only one airfield per country, arranged in a small square layout. Fields were so close together that you could not return to your base before your last victim was back hazing your six. The easy fix was to move fields farther apart; now each country has four fighter strips, with about three times as much space separating them from enemy fields. The mostly flat terrain has been modified with some rolling hills, making the low-level dogfights more challenging. This is definitely progress, although gameplay remains a fairly fast-paced, continuous fusillade; spreading the fields out even further wouldn't hurt. Some arenas still use the old, small map, however, so someone must have liked it.

Dogfighting against human opponents is the main attraction of this genre. Still, a little variety never hurts, especially if there are few people online and potential victims are scarce. The new version adds "combat boxes" of computer-generated bombers cruising around and bombing airfields. Players can attack these flights, but the bombers never close on a field completely, so they're no real threat. Their gunners are devastatingly accurate, and few attackers live through the encounter.

You can strafe new tank parks, factories, and trains for points. You can also knock out the unbelievably deadly anti-aircraft batteries. Unfortunately these batteries regenerate in about a minute so it's rarely worth the risk. The important thing is that these features now exist, a necessary first step in expanding the gameplay options.

Seeing More Clearly

FIGHTER ACE's original clumsy and complex viewing has been improved somewhat. The old views remain—a veritable keyboard ballet of disorientation. It's hard to understand views that don't include any parts of the aircraft—like a side view without a visible wing. How do you judge relative position?

The beginnings of an intuitive numeric keypad system have been implemented. Using one hand, just hit the keypad's appropriate direction key; for example, the 4 key looks left. Holding down the Ctrl key while pressing a number will generate a 45-degree up view in that direction. It's not as simple or as complete as the classic, one-handed AIR WARRIOR system, but it's a start. With a programmable joystick, though, you can finally achieve an easily used, if barely adequate, view set.

This release still lacks most of the common gameplay features of WARBIRDS or AIR WARRIOR. The small 16-plane inventory is made up purely of fighters, with no ability to carry bombs and knock out the ack-ack from a safe altitude. There's no way for a country to capture fields or win, and despite the bombers and tank parks, dogfighting is still the only game in town. While the realistic physics model is actually well done, with particularly good G-effects, the arenas that use it are almost always empty. The overly simplistic arcade flight model gets most of the play.

The best part of the revision is the price cut. FIGHTER ACE now costs just $10/month for unlimited play. This is the same price as the more fully featured AIR WARRIOR, but at least it provides affordable fun for more casual pilots.
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Privateer Too
The Original PRIVATEER Team Is Back With a Spiritual Sequel

by Thierry Nguyen

The words "final frontier" bring to mind a vast area to be explored, full of hardships, surprises, and rewards. Origin's PRIVATEER was perhaps the last space sim to give you the feeling of exploring space, rather than just defending it. A number of members of the PRIVATEER team have been hired up at Imagine Studios, working to create a spiritual successor to that classic title. ARES RISING, their first effort, proves to be a game with high ambitions, marred by a few problems and an engine that has fallen behind the times.

The Name's Marlowe
You play Mike Marlowe, a hot-shot rogue who scored with the princess and is now on the run from the law (a Han Solo type, essentially). You're contacted by a woman who promises you steady work and a cozy little base hidden on an asteroid field in the middle of nowhere—and that's where it all starts.

After going through the standard easy training missions, you drop into the main plot line (written by Gilbert Austin of STRIKE COMMANDER and PRIVATEER fame), which concerns the discovery of a mighty alien device known as the Micron. A power struggle develops among the IPEC, the Scavage, the Mayjt, and various other factions, and you're there to support the IPEC—at first, at least.

The single-player campaign is of the branching variety: You'll create different alliances with the many factions depending on what decisions you make when accepting missions, how you treat other craft in space, and what success you achieve. This adds a nice bit of replayability, because the differing alliances lead you to one of five game endings.

Managing Merc Money
You'll spend about as much time at home base as you will flying missions. ARES RISING is loaded with information. Between missions, you get a steady stream of AP-style news clippings about the happenings within the gameworld. While you don't have to sit down and read these, taking the time to do so greatly enhances the atmosphere. In addition, you have your own email inbox, and when you finish a plot mission you always have a personal log where Marlowe muses about his progress.

The background is nice, but if ARES RISING has a claim to fame, it's the gigantic list of equipment, and the play-balancing that went into that equipment. No other space sim in recent memory has such a diverse arsenal. Cannons fall into three categories, with beam weapons being best used against shields, ballistic weapons specializing in armor, and particle weapons suitable for taking out both. Missiles come in varying flavors of locking (from antiradar to rear-aspect heat-seeking), supply (single-fire or multiple pods), and even armament (EMP warhead or mine-laying). You can even lay mines or automatic turrets that will guard a certain stretch of space.

In addition, you'll find cloaks that mask you from anything and everything (at a high cost in energy and cargo space), jamming mechanisms that block out all communications, ECM systems of varying quality, and flight-control systems that affect how well your ship interprets your joystick input. There's also passive and active radar (the passive has a longer range and fewer emissions, but doesn't give as much information).

Missions for Money
While the gameplay is fairly reminiscent of the Mercenaries...
Guild missions in PRIVATEER, there's no trading here. You simply punch up your email to see what missions are available, choose one, outfit your ship, and then launch away. The mission types include patrol surveys, contract hits, escorts, and plot missions.

The standard missions have a sameness to them: You'll circle around some waypoints and shoot down whenever you're assigned to shoot down. Each mission ends when you find the right jump-gate and use it to return to your asteroid base. Then again, that was the way it was for most of the missions in PRIVATEER.

The flight model can be toggled between the traditional, arcade-like mode found in the WING COMMANDER and STAR WARS sims, and the slightly more realistic inertial mode. Depending on how big your ship is, the inertial mode makes it harder for you to slow down and turn. It falls somewhere between WING COMMANDER and INDEPENDENCE WAR in complexity. There are six flyable ships, divided among fighters, scouts, and bombers. They differ in terms of carrying capacity and general maneuverability.

During the course of the game, you can hire wingmen to help out during your missions. While their quality doesn't approach the elegance of the FRESNSPACE wingmen, these pilots are good enough for the job (if you hire the right ones). One nice touch: You can dictate general flying style to your wingmen (passive or active, beams first, and so on), and they are intelligent enough to use different weapons at appropriate times.

The enemy AI is also generally competent. At times they will use good tactics, such as using passive radar at the right time or using the asteroids for cover. At other times, though, they simply can't shake you off, no matter what craft each of you is piloting.

**A Rising Star Is Falling**

Some real annoyances detract significantly from the game. However, for one thing, the engine is quite dated compared to modern standards. Even with Direct3D, the ships look as if they've traveled from years past, with decent textures placed on top of hokey models. Firing effects for both cannons and missiles look simple and archaic, the shield effect is a bit simplistic, and the capital ships aren't very impressive.

ARES RISING also fails to give you much of a feel of personal freedom. In PRIVATEER and other games, you roamed the galaxy at will, just going places and doing different things. While ARES RISING has a decent amount of mission variety, you always proceed from and return to your asteroid base, which doesn't have the same "travel the vast galaxy" feel.

What's more, you can't really set your own pace as you progress through the plot. In PRIVATEER, you were free to put the plot on hold, doing whatever you wanted until you decided to initiate a plot mission. But in this email system, I found that a plot mission was the only choice left after I had finished two or three random missions. This is just a bit too much structure in what would've been a fine, free-form game.

One additional gripe is that you're shown how much room the equipment you're buying will take up, but until you buy a ship, you don't know how much it can carry. If I'd known the ship's specs beforehand, I wouldn't have made the mistake so often of buying nice equipment only to find out that my new ship didn't have enough cargo space.

**Alone Out There**

In multiplayer mode, you'll have a persistent pilot who will gain money and goods to build his ship. In addition to team and deathmatch modes, you can fly against AI opponents in randomly generated missions. Alas, I couldn't find an opponent with whom to test the Internet multiplayer action. Without support from any of the gaming services, you have to go to Imagine's Web site to find anyone else willing to play.

Several things ultimately make this game above average: the diversity of equipment, the single-player branching plot line, and the generally challenging AI. While the gameplay rivals that of PRIVATEER, the engine is such that the game would have made a much stronger impression two years ago. Now that the space-sim arena has games like INDEPENDENCE WAR and FRESNSPACE, ARES RISING's dated graphics really hurt it. Hopefully, Imagine will build upon the good intentions of this first effort and make a more solid overall game next time. For now, if you're more interested in personality than a pretty face, you'll probably find ARES RISING worth the $30 price tag.
Blunt Instrument
Interactive Magic Forgets Who Its Audience Is

by Jim Cobb

In an attempt to answer criticisms leveled at the playability and limited graphics of M1A2 Abrams, Interactive Magic has made its latest tank affair, SPEARHEAD, quite glitzy and has narrowed the game's focus to a smaller command scale. What could have been a decent light arcade game, however, suffers from being forced into a simulation format.

World Policeman
The premise of SPEARHEAD is that the United States intervenes as Libya invades Tunisia. Engagements come in three flavors: seven tutorials (which are actually pretty good), 10 single engagements, and any number of randomly generated, yet nondynamic, campaigns. Most mission objectives include destroying all enemies, reaching a waypoint, and escorting supply convoys. Fair enough, except that you can win by achieving victory objectives regardless of your losses. Obviously, the U.S. forces in SPEARHEAD don't have to worry about public backlash due to high losses, as was the case in Desert Storm.

You command a platoon of three tanks plus assets, and though infantry is included in the force mix, it is generally scarce when you need it most. Worse, it has unknown antitank capabilities. Artillery, on the other hand, seems to always show up for battle, and it's always maddeningly accurate.

See Scenic Tunisia?
Given the number of tank games set in the desert, it's hard to get that excited about looking at sand again. However, this Tunisian landscape has a nice haze in the distance, and the dunes are easy to use for hull-down positions. The nine U.S. vehicles and five U.S. aircraft are modeled well enough externally, although the 10 enemy entities and three civilian vehicles appear to be stylized. There are no interior views so the driver and gunner screens give you the feel of sitting on the outside of the tank.

Aside from eye-candy considerations, the M1A2's characteristics have been stripped. SPEARHEAD provides only for HEAT and SABOT rounds, even giving them antiair capability. When you drive your tank, you never need worry about smoke, and the ride is too smooth. Gunnery is simple: Point, fire, and fire, with no indirect options. Although vehicle components can be damaged, the usual result is the enemy's destruction. Unlike in most sims, crew members don't notify the commander of damage; he must notice something wrong and view another screen.

IVIS Eyes
The fatal flaw of this game is the interface for the Inter-Vehicular Information System (IVIS), which affords you a bird's-eye view of the field and lets you issue orders to vehicles and assets. A hot-key accesses a textured contour map, which in turn leads to three other menus. You execute the six vehicle orders (map zoom, communication, and the like) by first clicking on the order; then clicking on the vehicle, clicking on the target, and—finally—exiting. So, to give a set of orders to a single vehicle (or artillery or infantry unit) requires seven (or more) clicks! This would be bad enough in a turn-based game, but in a real-time simulation it's unforgivable.

While you can drive toward a target via IVIS, you aren't going to find good hull-down positions. In general, operating your tank is a confusing blur of joystick, keys, and keypad arrows: A real action game, much less a sim, should have better controls than this. The confusion extends to the manual, which spends too much time dealing with multiplayer issues for which the scenarios provided are ill suited. Forget the mission editor; there are far better products available. SPEARHEAD does have a few good points, such as refugees and conveniently marked minefields, but these hardly compensate for the clumsy interface, strange vehicle controls, or simplistic victory conditions. It's hard to imagine either serious tank-sim enthusiasts or fans of arcade armor games finding much to enjoy here.

DEADEYE DICK
The human tank commander has near-complete intelligence and superior arms. The AI really can't put up much of a fight.
CONFIDENCE IS HIGH

F-16 Aggressor is the closest anyone outside the military will get to experiencing flight in the cockpit of an F-16. Selected as one of 1998’s “Hot 100” games by both Computer Gaming World and PC Gamer. F-16 Aggressor boasts a fly-by-wire system that’s been modeled and integrated to perfection—a technological feat few if any flight sims can claim.

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Furballs in 3D Major
The Classic Internet Sim Gets a 3D Makeover

by John Nolan

Every day, hundreds of WARBIRDS gamers enlist in the service of one of four generic countries and cruise the Internet skies looking for trouble. Using 50 different WWII aircraft, they dogfight, attack ground targets, and try to capture airfields to "win the war" for their chosen flag. The absolute best aspect of WARBIRDS is that its designers are never satisfied. Since the debut of the sim back in December 1995, new versions have appeared every few months. The latest major upgrade, version 2.01, delivers beautifully rendered 3D aircraft and terrain, all new 2D cockpit art, revised flight models, and new airframe stress limits. Overall, it's a tour de force that makes WARBIRDS the flight leader in online air combat.

Nice Wings, Baby
The centerpiece of this revision is the 3D art. Artwork gets delivered in standard (640x480) or high resolution (1024x768), although the high-res 3D requires a fast Pentium II-class CPU to deliver a playable frame-rate. (The published minimum CPU requirements are unrealistically low for smooth play.) Either way, aircraft graphics are historically accurate, stunning, and incredibly detailed. You'll see representative squadron markings on the planes, exhaust smudges from the engines, and excellent lighting. The ground looks realistic, and the sky presentation is just as good; superb special effects, such as flak bursts, complete the package.

If you don't have a fast Direct3D accelerator card, you'll still find the game eminently playable in 2D mode. All gameplay capabilities are the same and the 2D artwork is outstanding. In fact, the cockpit interiors and gauges are drawn in exceptionally detailed 2D in both resolution settings. The cockpits include bit-mapped gauges modeled on actual instruments, with new working g-meters, engine oil pressure-and temperature gauges, and other instruments added to the display. As cutting edge as the 2D cockpits are, you'll get an even more amazing visual experience if you have a 3D accelerator card.

Combat Stressed
The improved flight model more accurately reflects the handling differences between the various aircraft, which adds real depth to the 50 different planes included in the simulation. You may master the Spitfire, but strapping on a Focke Wulf will call for a much different approach to air combat maneuvers. The stall and spin characteristics of each aircraft are a major part of these differences and receive particular attention in the upgrade. While most of the planes still seem reluctant to enter a full spin, the effects and recovery techniques are more realistic once the plane is actually in the spin. Stress limits are now part of the flight model computations; Dive too quickly and you can pull a wing off. Overspeeding gear or flaps will stick them in position and degrade your flight performance. The detailed damage model also affects aircraft performance. If your right aileron gets shot away, your plane's roll performance deteriorates accordingly. Many other sim's don't model battle damage this specifically. WARBIRDS shines in this area with a sophisticated damage map that tracks where each bullet hits and even alters the plane's appearance in the 3D mode.

The designers aren't resting yet, either. Plans for the next revision include an improved game interface, changes to field-capture requirements, a new scoring/awards system, and parachutists.

The downside to all of this is that WARBIRDS 2.01 is priced considerably higher than its two competitors. Its outdated pricing model of $30 for 20 hours of play and $2 per additional hour seems particularly outrageous when you compare it to the flat rate of $10 per month for unlimited play on AIR WARRIOR or FIGHTER ACE. However, you can fly head-to-head against a friend for free, and there are now some offline training missions.

Despite its sky-high pricing scheme, this WWII sim boasts an incredibly loyal clientele. It's the best online flight sim out there, but excellence here, as in the rest of life, comes at a higher price.
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ACCOLADE
Stuffed at the Goal Line?
NFL Gameday 99 Doesn’t Quite Get Over the Top

by Brett Todd

The fever hit early this summer. I don’t really know why. Maybe I’d sniffed too much propane while cooking up burgers on the BBQ. Maybe I’d just seen one too many Mark McGwire highlights. Regardless, by the time mid-August rolled around, I was salivating over thoughts of the upcoming NFL season.

This left me in kind of a tough way for a few weeks. After all, there’s only so much that anemic preseason games, a stack of pigskin preview mags, and the soothing voice of that guy from NFL Films could do to tide me over until opening day. Thankfully, there was an alternative. Instead of waiting for Fox to defrost Terry Bradshaw, I could check out NFL GAMEDAY 99 on my PC. 389 Studios jumped the gun this season and made sure that gamers could spend the last days of summer playing its port of the popular Sony PlayStation title.

Of course, NFL GAMEDAY’s being a PC rookie and hitting the shelves early in the season raises a couple of important questions. Is it a legit title or merely a time-filler for those too impatient to wait for enough right that I have fun playing it, but it’s a guilty pleasure akin to tapping your feet to the Spice Girls’ “Wannabe.” You enjoy the moment, until, “What the hell am I doing?” pops into your mind.

MISSING IN ACTION
The first things that you’ll notice on booting up GAMEDAY 99 are the great visuals and in-your-face audio. The presentation is first-rate all the way, from the hit-packed opening video through the on-field graphics, which are easily the best I’ve seen in a PC football game to date. Authentic stadiums and real-time weather with changing field conditions help provide atmosphere; a game at Soldier Field in snowy weather feels as cold on my PC as it would in the stands.

A Direct3D accelerator is required to see all this eye candy, but the designers have thoughtfully included support for just about every chip set under the sun. Sound is also excellent, with all the tackles and pile-ups accentuated with just the right amount of grunts and crashes. Dick Enberg and Phil Simms handle the play-by-play in adequate fashion, though their lack of awareness gets irritating at times. Stuff the opposition on 4th-and-one and you’re likely to hear Dick come up...
with, "That can't be good for more than a couple."

**Fourth and Forever**

Unfortunately, the visceral thrills wear off pretty fast—and then you'll start to notice what isn't there. The designers at 989 Sports didn't make a lot of changes from the PlayStation version, and it shows, as the game lacks a number of little, and not-so-little, extras.

For example, there's no player editor. The manual omits most useful information, and then garbles what is there for good measure. There's no practice mode. You can call your play and then sit back to watch the computer play out the result, but this isn't a true coaching mode because without your help on the game pad your boys are doomed.

There's no way to play different league schedules, so you must replay the 1998 season over and over again. Games can't be saved in progress. You can play full 15-minute quarters, but no time ticks off during halves, so expect a lot of 75-55 scores if you insist on playing with the real-world clock.

About the only concession to the PC crowd is a draft league option.

High-flying Raiders attacked me with an incessant aerial assault. I was faced with a realistically managed opponent in virtually every game I played. Players were always just a little bit better than they should have been, but once I got into the trenches I was too caught up with trying to win to really care.

And since the game is such a challenge, winning gave me a sense of satisfaction that I haven't felt since Sierra's FRONT PAGE SPORTS: FOOTBALL PRO people last delivered a bug-free product... and man, that's quite a while ago.

The arcade play is also satisfying. Unlike a lot of other football games with arcade options, this one really works—meaning that you can actually do things with your gamepad that have an effect on the game. Players do move in a somewhat awkward diagonal motion that takes some getting used to, but once you get the hang of which buttons do what (you can configure everything, as well!), you'll be juking your way to extra yardage and batting passes away in no time. Even straightforward tackling is fun thanks to the animation that depicts even the most mediocre stop as a 'wrap-em-up-and-body-slam-em' bone cruncher. Realistic? No. Fun? Heck, yeah.

The ability to play full-action games over the Internet through 989 Studios' online matching service is also a plus, although this is not without its defects. Besides the seemingly unavoidable lag difficulties, the chief kink involves a bug in the kicking game. Booting extra points and FGs—not to mention getting decent yardage on punts and kickoffs—is virtually impossible as of this writing due to latency problems that cause the kick meter to stutter. A patch issued at the start of September lessened the severity of this problem, but it can still be an issue at times.

**End Zone**

Overall, NFL GAMEDAY 99 is an enjoyable but frustrating experience. The basic design limitations force you to make too many concessions to consider it as a major player in the football sim arena.

It'll do until opponents like MADDEN 99 and FOOTBALL PRO 99 arrive, but after that it's doubtful whether any serious PC pigskin fans will keep playing.
Mud in Your Eye!
Finally, a Realistic Motocross Game

by Greg Fortune

There are computer simulations of most sports that try to capture the essence and excitement of what makes the sport great. Some sports, such as football and baseball, have enjoyed several years of serious, outstanding, realistic computer games. Things have not been so good for everyone, however. Those of us who ride motocross bikes have had nothing but lame attempts to put homogenous bumps in a track that force your bike into the air. Let me tell you, that's not what it's all about.

So who would have figured that Microsoft would take all the mud that's been flung at them and use it to make MOTOCROSS MADNESS, the finest off-road motorcycle game ever created?

Biker Tricks
The game's interface is very easy to navigate, and the options are very straightforward. You have your choice of four different types of tracks: Stunt Quarry, Baja, Supercross, and Nationals. Each type has several riding areas, so there's a lot of replay value. The garage screen is also quite simple and lets you modify everything from your motor to springs, shocks, and traction.

One thing you need to know is that if you don't have a 3D accelerator, you can't play MOTOCROSS MADNESS. Just as in the real sport, you have to have the proper equipment to get out on the trails. If you do have a 3D card, you are in for a treat. The graphics are fast, smooth, and detailed. The game looks equally gorgeous in D3D or 3DFx mode, so either way you win. The bikes are wonderfully detailed and model everything from the teeth on the rear sprocket to the puff of grey-blue smoke out of your pipe when you first open the throttle. The distinctive growl of the two-stroke engine even sounds right.

Barney Meets Superman
Once you've selected a bike and a riding area the real fun begins. The areas are fully modeled so you can go anywhere your heart desires. This is especially true of the stunt quarries, where the name of the game is seeing how many points you can score for pulling off any of the 16 (yes that's 16) available stunts. They're all there: barneys, nak-naks, superman, the big kahuna, and more. If you've got enough air and planned your jump well, you just might make it. If not, you are in for some really big crashes. Some of the stunts are (realistically) difficult to master.

Your virtual rider can be completely controlled from a standard game pad. He leans, shifts his weight forward and back, and even stands on the pegs appropriately.

The physics of the bike and rider are very well done. One of the most popular ways to turn a bike around if you are stopped on a trail pointing the wrong direction is to lean the bike over and "roost" the back tire around behind you. I was happy to find that this move also works here. You can also pull wheelies, twist the bike in the air, and fly over the bars with amazing realism.

King of the Open Road
I was worried that I was partial to this game because I actually like to ride motocross bikes, but several other non-riding people have confirmed my impression—this game rules. Now everyone can get a taste of what makes motocross such an awesome sport for less than the cost of a new Metzler for my YZ. If you like bikes, or just like having fun, you should check this one out. It's one of the year's gaming highlights.
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Slow Down
Redline Racer Offers Quick Thrills, but Even Quicker Crashes

by Gordon Goble

You know those dreams where you’re falling faster and faster and you’re nearly moving at the speed of light yet you know you’ve got to fall even faster if you’re gonna escape those demons nipping at your hurling body but if you go any faster you’ll either smack something with staggering force or perhaps even evaporate?

Well that’s what REDLINE RACER is like. Can you handle this sort of speed? I couldn’t.

Watch Your Speed
Well, let me rephrase that. I can’t handle racing games in which the challenge lies in beating the program’s opponents over courses that are too tight for the speed. In England-based developer Criterion Studios’ REDLINE RACER, victory in all but the introductory level relies on two factors: an ability to drive incredibly fast over the span of a sub-five minute event, and the good fortune to steer clear of the artificially unintentional opponents along the way.

To make matter worse, the game locks away nearly two-thirds of its bikes and tracks for those who can successfully navigate the first circuits at the satis
tically quick "Medium" and "Hard" difficulty levels. With no championship mode, no garage, crash-happy opponents, and very little vehicle dynamics (espe
cially when compared with Microsoft’s MOTOCROSS MADNESS or Intense Simulation’s SUPERBIKE WORLD CHAMPIONS), REDLINE players have just one incentive—to unlock better bikes and inaccessible circuits by winning races.

And, because the only winning race is usually a crash-free race, REDLINE RACER becomes a very repetitive process of drive for a bit, crash, restart, repeat.

Well, It’s Pretty
That said, REDLINE is not a total loss. With 10 tracks spread across six unique, detailed environments, REDLINE puts on a solid graphic show designed to take advantage of 3D accelerator cards. Expect falling snow, icy climes, and ribbon-thin roadways at Le Grand Blanc; sand, surf, and some beautiful sun and lens flare effects at Sandy Cove; dusk racing at the quiet country meadows; and huge dips and dales at Tudor Hill. You’ll see much more than this if you progress through the game.

But, no matter which course you select, it’s hard to tell just where the navigable world ends and the invisible crash-o-matic trackside boundaries begin. Granted, most boundaries—rock walls, cliff faces, man-made barriers, and the like—are apparent, yet other seemingly obvious borders are quite negotiable.

The game depicts crashes in exceedingly dramatic fashion. Bikes twirl and skip across the landscape while dislodged riders bounce and contort like rag dolls. Vehicle dynamics, meanwhile, are arcade all the way. Yes, you’ll lean into corners and “waggle” when on the bitter edge, but you’ll often feel that you’re riding on a cushion of air, struggling to keep your loose-handling bullet within the parameters of each course.

Half Baked
Unfortunately, I didn’t have a chance to check out the promised 8-player REDLINE Internet feature, as game distributor Ubi Soft was still working on a patch for its game service at press time.

Had REDLINE RACER been released a year and a half ago, my analysis may have been more favorable. But it wasn’t, and that leaves this bike racer a mid-pack runner at best.
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Tiger in the Rough
Tiger’s PC Round Liven Up the PGA TOUR Franchise—but It’s No LINKS

by Scott May

For years, EA Sports’ underrated PGA TOUR GOLF has quietly held its ground in the shadow of heavy hitters like LINKS LS and JACK NICKLAUS GOLF. Now EA takes a Tiger by the tail and turns this venerable series on its ear with TIGER WOODS 99. A deft blend of golf sim and arcade flash, this game has muscle and attitude to spare.

It doesn’t take a marketing genius to understand EA’s euphoria in bagging Tiger Woods’ first gaming endorsement. The hot-shot young star of the PGA circuit is perhaps the best role model this particular sport has ever seen. So it’s not surprising that a game cast in his image is fast, lively, and even inspirational.

A Course Is a Course
The game comes with three 18-hole courses—Pebble Beach Golf Links, TPC at Sawgrass, and TPC at Summerlin—with additional course disks already available, including Bay Hill Club, Southwind, Las Colinas, Scottsdale, Cog Hill, and Colonial Country Club. But here’s the real kicker: EA Sports has rewarded loyal PGA TOUR fans by including a utility that imports—and converts to 3D—any courses from the following titles: PGA TOUR 96 for Windows, PGA TOUR PRO, PGA TOUR GOLD, CLASSIC COURSES CD, SPANISH BAY course disc, and PGA TOUR LAPTOP. You can even export TIGER WOODS 99 and its add-on courses to the above-mentioned games (with the exception of PGA TOUR 96 for Windows).

Nine game modes give players plenty of variety. The modes include practice, stroke, tournament, skins, shoot-out, match play, foursomes, fourball, and driving range. Players can hit the greens competing as (or against) Tiger or one of seven other PGA champs: Mark O’Meara, Lee Janzen, Peter Jacobsen, Tom Kite, Craig Sadler, Brad Faxon, and Davis Love III. Sorry, ladies, you’re stuck with a lonesome female golfer named Cindy. You can also create a custom player profile that mirrors your own real-life attributes—if that’s your idea of fun.

The game’s graphics engine has been totally revamped from the last PGA TOUR outing, and it now supports both hardware- and software-accelerated 3D video. By far the biggest improvement is EA’s proprietary Flash Draw technology, which renders each shot on the fly—and I mean that literally. The game camera follows the ball in flight, then swings immediately around for the next shot. No waiting. The result is a more immersive style of play than PC golfers have ever played.

In 2D mode, the high-res graphics are quite good; in 3D mode they’re even better. My only complaint is with the blotchy background objects. Close up, they just don’t “fit” with the realistically rendered foregrounds and stunning sky effects. Worst of all are the dorks in the gallery, who increase in number the better you play.

TIGER WOODS 99 handles animations quite well, using digitally captured versions of Tiger and his...
contemporaries. We even get some signature Tiger emotions, such as his fist pump and “raise the roof” antics that follow good shots. He even releases his right hand on the follow-through after a particularly bad shot.

One disconcerting note about graphics: The initial release of TIGER WOODS 99, designed for DirectX5.2, appears to have a problem with Direct3D. On my rig, a Pentium 233 MMX with an ATI Xpert 98 primary display and Diamond Monster 3D II secondary display, the game ran great using 3D acceleration—until I installed Direct3D. After that, the course screens were horribly garbled. The only workable solution, beyond dumping DirectX5, was to turn off hardware acceleration within the game’s options menu, but even this produced some slow video corruption, presumably associated with D3D 6.0 software rendering. At the time of this writing, EA’s tech support had not yet addressed this issue.

Tiger Beat
The game’s on-course interface rivals that of LINKS LS for clean, unobtrusive design. In fact, everything you need to know is contained within the high-tech swing meter: wind speed and direction, club selection, distance to the pin, height of the pin relative to your ball, risk meter, ball lie, and adjustments for fade, draw, and backspin. Two types of club swings are available: old-fashioned twitch-and-click and analog Pro Swing. EA’s attempt to create a natural, mouse-motion swing. I think most players will opt for Pro Swing, because it offers greater control and better accuracy, particularly on chip shots and putting.

One cool feature is the Tiger Zone—the nickname given to the swing meter’s overpower area. Traditionally, any backswing allowed to extend past the overpower mark resulted in a wild, unpredictable shot. Here, expert use of the Tiger Zone (modeled after Woods’ real-life tendency to overpower his drives) can be quite beneficial. Players who can backswing into the Tiger Zone then hit the bottom aiming mark dead-on, are rewarded with an echo-laden voice that booms, “Tiger Shot!” Tiger’s on-screen character flashes with electricity and the ball explodes on contact with the club head. Sure, it’s a arcade-style gimmick—but it’s fun.

Speaking of the Tiger Zone, though, the game is overloaded with cutsey-poo Tiger Talk. EA milks its beloved franchise for all it’s worth with features names like Tiger Vision, Tiger Charge, Tiger Tips, Tiger Shots, and, you guessed it, Tiger Toons. If the game weren’t so good, it might be enough to make me Tiger Puke.

That said, most of these Tigerisms are actually viable gameplay features. Tiger Tips randomly appear during stroke and practice play, offering professional advice. Tiger Vision lets you choose between aggressive and safe shots, and Tiger Charge gives the computer-controlled Tiger an extra AI boost after a birdie, eagle, or monster drive.

Some other minor quibbles include tedious pre-game menus that force you to jump through numerous hoops and sub-menus to set options before finally hitting the greens. (Fans familiar with other recent menu-happy EA Sports titles know what a pain this can be.) The printed game manual is actually better than we’ve come to expect from EA, but it’s still a gray, colorless read, augmented with online help and a browser-enabled Play Guide that took me a good 30 minutes to get working. I suspect EA has a lot of patching to do here. Luckily, the game features a built-in Internet update utility.

Multiplayer support is well represented, as you might expect. Internet play is free and features both voice and text chat to “hector” (EA’s term) your opponents. First rule of golf: Don’t heckle someone holding a 9 iron unless you’re on the Internet, where sportsmanship doesn’t apply. Rudeness aside, this is a great game for remote play, be it over the Internet, a LAN, or a direct modem link.

Back to the Clubhouse
All in all, TIGER WOODS 99 is a solid continuation of EA Sports’ great PGA TOUR GOLF series. It’s challenging but not difficult, fun but not silly. Once EA ironed out all the wrinkles, this should be a contender.
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Speed Busters
AMERICAN HIGHWAYS
Smashmouth Golf
Coin-op Mega-hit Makes a Surprisingly Great PC Debut

by Scott May

I love computer golf, but I have to admit, some golf sims take themselves far too seriously. Designers are so caught up in a high-tech war of 3D graphic engines and ultra-realistic ball physics that they forget to have fun. And that’s what golf is all about.

That’s why I welcome games like GOLDEN TEE GOLF. This is the most fun I’ve had on digital greens since Access Software’s original 8-bit LEADERBOARD GOLF. GOLDEN TEE S PC version is based on Incredible Technologies’ own 1995 coin-op smash, PETER JACOBSEN’S GOLDEN TEE 3D GOLF, which ranked among the top five arcade games for more than two years. In just a few short rounds, you’ll understand why.

GOLDEN TEE is to golf sims what Sierra’s 3D ULTRA PINBALL is to pinball sims. In other words, don’t expect a lot of realism. Everything is either over-simplified or wildly exaggerated. Where else can you knock in a 60-foot putt your first time out, or bag a double eagle without breaking a sweat? The best comparison I can make would be with Sony’s outrageously enjoyable HOT SHOTS GOLF on the PlayStation.

LINKS, It Ain’t
What GOLDEN TEE lacks in realism it makes up for with pure, unabashed fun. The PC translation is a dead-on clone of the coin-op version, enhanced with multiplayer support, recorded play, and voice chat. True to its arcade roots, the game is so easy to play, even bare beginners will be up and swinging like pros within a few minutes. Believe it or not, such simplicity is key to the game’s long-term appeal. Average players can pound out 18 holes in 30 minutes or less. The real trick is limiting yourself to just 18 holes.

The game’s physics model is loose, to say the least, but can be easily tightened up in the options menu as your experience grows. Three fantasy courses are available, with additional links available soon—perhaps by the time you read this. That’s great, but why not cut to the chase and release a course-construction kit instead? In all honesty, the course graphics here are colorful and fun, but they’re nothing to send TIGER WOODS 99 or LINKS LS running back to the drawing board.

The course graphics in GOLDEN TEE drip fantasy cut-and-paste: Weird archipelagoes and oddly mixed foliage line some fairways. Objects like cactus and boulders stand like monoliths, absurdly out of proportion, making some terrain look like bizarre sets from TV’s Lost in Space.

Reinventing the Trackball
In the coin-op version, players control the club swing using a trackball. Sounds goofy, but it really works well. In the PC version, IT developed something called TrackSwing, which recreates the trackball mechanics using a mouse. Players first pull back the mouse to initiate the backswing, which moves the distance bar in the overhand window. Next, simply push forward to complete the swing and hit the ball. To hook or slice, push forward with a right- or left-hand curve. The motion feels natural and delivers a nice little tactile “hit” upon contact with the ball.

Many other publishers are trying to reinvent the computer mouse swing, but TrackSwing stands out as a model of simplicity and execution. If you own a trackball, it works even better.

Other goodies include auto-save highlights, a Greatest Shots Club, and hilarious voice-overs that spout encouragements like, “You are the greatest!” in an earnestly dopy, Greg Brady kind of way. Ya gotta love it.

It’s been ages since I’ve played a golf game as fun and addictive as GOLDEN TEE GOLF. Who needs realism when you’ve got gameplay this hot? CGW
Play against your choice of 64 life-like opponents, each with their own unique personality and playing style, or create your own. For the ultimate experience, challenge the Chessmaster.

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Not So Special Forces
The Soldiers in COMMANDOS Are More Puzzle Pieces Than Fighters

by Tim Carter

As the seemingly endless deluge of unoriginal, cookie-cutter real-time strategy games got you down? Are you feeling like it's time for something different? COMMANDOS: BEHIND ENEMY LINES from Eidos Interactive is unquestionably one of the most different games to hit either the strategy or action markets over the last few years. Of course, difference comes with a price.

In COMMANDOS, you follow a 24-scenario campaign that begins in 1941 and lasts throughout the war in Europe. The Germans control the continent, and it's your job to conduct small but significant raids to tie down troops, keep morale up at home, and facilitate victory in the great battles to come.

**Commander in Chief**

COMMANDOS features a third-person, isometric view and gives you a limited set of commands for directing your strike team. While many of these orders are individualized to particular soldiers, your team never exceeds seven people, so these commands are quite manageable. That's good since the orders you give comprise the heart of the game.

Played in real-time, COMMANDOS also offers a set of fairly unique challenges—running around killing everything in sight just won't cut it here. This game emphasizes stealth over firepower and puts realistic limits on the amount of damage your men can take. In other words, they die easily. Racking up a large body count doesn't affect your score, which should delight purists who will measure their personal success by how few Germans they kill while obtaining their objectives.

**A Questionable Mission**

There's no question that Eidos is breaking new ground. Yet with newness often comes a flaw or two and, sadly, that is the case here. My version had a few problems with Windows 95 and demonstrated a nasty tendency to shut down arbitrarily toward the end of each mission. But then, so does my word processor. Still, that sort of thing is disconcerting.

Clearly, the designers want gamers to use stealth instead of force. Your troops are lightly armed and highly vulnerable, forcing you to plan around, rather than steamroll, the enemy. You'll spend a lot of time observing patrolling guards and then evading them. If you take over a machine gun post or capture a tank, you may be able to shoot it. (Yes, vehicles play an important role in many missions and may be used by your troops to good effect.) But otherwise secrecy is the name of the game.

Surprisingly enough, the relationship between planning and execution in COMMANDOS detracts somewhat from gameplay. Given your highly specific resources, each mission becomes an elaborate problem-solving enterprise. And, while there is usually more than one way to solve each puzzle, there are also a lot of wrong ways to go about it.

Generally, if you fail to solve the puzzle properly, you have to reload a saved game and try again. You can't win a mission if any of your people die, and you often can't win if an alarm is triggered. Thus, a typical routine might go something like this: Try something, fail, reload; try something else, fail, reload.

Because timing is also important, you may figure out what you want your soldiers to do and still have to try two or three times before you succeed. This can be annoying, particularly when the problem is complicated and many elements of it (that is, German soldiers) are moving in different directions simultaneously.

On the other hand, the inherent difficulty that's built into the game makes each solution remarkably satisfying. I only wish that failure was not so, well, terminal. Also, the quick reload function that comes up with the failure...
Your Troops

Your unit pool contains six regular commandos (and a potential "guest"). Each has different abilities and specialized weapons.

Tiny: (Green Beret)
Okay, so there was no such thing as a Green Beret in 1941, and probably not too many Americans in the British Special forces before (or after) Pearl Harbor, but why quibble. As your all-around thug, Tiny can carry and hide bodies, hide in the snow, and is most useful with a knife.

Duke: (Sniper)
Equipped with easily the silliest accent in a game - a game rifle with silly accents your sniper has a limited number of shots for a long-range, silenced rifle. Very useful—until the bullets run out.

Inferno: (Engineer)
An all-purpose demolition man, Inferno is, obviously good at blowing up things. His bear trap is also important for reducing the odds in ambushes or gunfights.

Spooky: (Spy)
An infiltration agent who can also distract guards and quickly reduce the odds when sneaking through those tough, interlinked defensive systems.

Tread: (Driver)
The only commando with an automatic weapon. Tread can drive most vehicles, including tanks and fixed-fire weapons. If you elect to (or are forced to) shoot it out, Tread is your man.

Fins: (Marine)
Many scenarios involve water, and most allow you to use your Marine to maximum advantage. Along with the usual underwater and boating skills, Fins' spear gun is an ideal short-range silent killer, allowing you to take out sentries from a distance with minimal risk and no noise.

COMMANDOS comes with an adequate manual and a truly impressive tutorial sequence designed to get you up and running quickly. Be warned, however, that your soldiers can’t die in the tutorial, so some of the things you learn will be counterproductive once you’re in the field.

COMMANDOS also has a few annoying quirks that detract from gameplay. For instance, there is no way to autoprogram your troops, even to defend themselves. More than once, I lost a man to inquisitive German patrols because I was busy elsewhere, not because the soldier in question couldn’t handle the situation. Perhaps even more annoying is that your troops won’t get out of the way of oncoming traffic. There’s nothing quite as frustrating as completing a highly complicated set of maneuvers to say, blow up a dam, only to have two members of your group get run over by the escape truck on its way to pick them up.

In addition, your troops rarely work together. They can move or shoot their pistols as a group, but that’s about the extent of it. I would have liked to be able to customize group action somehow to get better mileage out of some of the commandos' special attributes. Instead, you tend to move all of your troops to a safe location, then venture out with one (or perhaps two) to clear the path to the next safe haven.

This is less of a problem in multiplayer mode, when each soldier may be controlled individually. My biggest concern with a multiplayer game, however, is play balance. A hard puzzle for one player becomes much easier when it can be attacked from four or five directions at once.

Even with the frustration involved in playing COMMANDOS, I have to say I had fun with it. The aggravation caused by seeing one plan after another fail is more than compensated for by the satisfaction of finally getting it right.

Ultimately, gamers’ reactions will depend on what they were looking for from the game in the first place. If you want a shoot-em-up WWII game or a set-piece strategy simulation, you may want to look elsewhere. If you’re willing to go somewhere off the beaten track and don’t mind dying frequently, COMMANDOS could give you hours of innovative gameplay.

TANK RUSH A captured tank is the perfect tool for overcoming this machine gun nest.
The Worm Turns
An Updated Classic Follows C&C's Tracks in the Sand

by Pete Scisco

Fans of Frank Herbert's science-fiction classic Dune (as well as fans of Westwood Studio's groundbreaking DUNE II strategy game from several years back) might well have something to look forward to with this remake. If that sounds like a lukewarm reception, then understand that DUNE 2000 basically adds cosmetic changes to DUNE II. It must be said, however, that these changes make the game deeper and more enjoyable, especially in the area of multiplayer support.

Family Feud
Dune readers will recognize the Harkonnen and Atreides forces. The political, economic, and military conflicts between those two houses create the overarching framework for the story of Paul Atreides and his rise as emperor. The game's third adversary, the House of Ordos, appears as a cross between the Borgs and Ferengi of the Star Trek series—smugglers without pity or remorse. Players can play campaigns as any of the three factions.

COMMAND & CONQUER players will recognize the "build, harvest, protect, destroy" mantra that informs most popular real-time strategy games. The game borrows heavily from COMMAND & CONQUER in its presentation of more than two dozen missions.

That's not to say, however, that DUNE 2000 is simply a replica of the best Dune aspect comes in the form of giant sandworms, which can swallow entire vehicles, including large units such as harvesters and tanks. Worms are attracted to vibrations in the ground and can turn up when you try to move troops into position. To avoid the worms, listen for the spoken warning of "worm sign," then get your forces to the safety of rocky islands set out along the sand.

Cut-scenes and some introductory materials set the scene, but the brief footage adds little to the playing experience. The game's plot has you smuggled onto Dune with the assistance of the Bene Gesserit—a sisterhood of seers and visionaries who serve as concubines and soothsayers to the ruling classes, while all the time seeking to control fate from behind the scenes. Thankfully, though the clips don't add much to the game's universe, at least players are spared the canned ham of COMMAND & CONQUER.

Atriedes Anonymous

It doesn't quite make sense that gamers must take the role of some no-name recruit when it would have been more interesting to play the role of Paul Atreides or that of the Harkonnen Baron. Also, why aren't players given the chance to play on the side of the Fremen, the nomadic indigenous peoples of Dune who play a pivotal role in the novel? (Fremen forces are sometimes available as Atriedes' allies.)

Including the Fremen as a force would have given players radically different resource options. Besides mining spice, the Fremen must manage their water on the desert planet. Best of all, they ride the giant worms to become warriors. It's hard to imagine a more unique scenario than attacking a Harkonnen enclave with a battalion of worm riders.

As it stands, DUNE 2000 may attract fans of the book who are new to real-time strategy games. But experienced gamers, especially those who came up through the ranks of C&C and RED ALERT, won't quench their thirst for new action in this title.
EIDOS INTERACTIVE dives into the STRATEGY GENRE

Gangsters
"a mobster sim"

BRAVEHEART
"step into the epic"

WARZONE 2100
"strategy by design"

No longer known simply for the Tomb Raider series, Eidos Interactive has a top-notch strategy line-up coming this fall and next spring. Among them, one on the best strategy titles of the fall - Commandos: Behind Enemy Lines. Computer Gaming World calls it "slick, different, and innovative", and Gamecenter says "Commandos is a great game!"

Eidos’s upcoming strategy line-up includes three unique titles: Gangsters: Organized Crime, Braveheart, and Warzone 2100. The following pages contain some tidbits on these three games, from start-up strategies and interviews, to game design overviews. For more detailed information about any of the titles, go to the Eidos Interactive web site at www.eidosinteractive.com.
What does it take to become a mob boss?

You have to be willing to cheat, lie and steal with a smile. In the world of Gangsters you have the opportunity to do this and more. But before you enter into the den of illegal under dealings you need some pointers on making it without getting rubbed out.

"Hey it cost money to run an illegal operation. You don't have any? Well extort it out from other businesses. What are neighbors for?"

Extorting
Select the Lieutenant responsible for extortion. A number of blocks on the map turn blue. This is a temporary measure that denotes all the commercial blocks in the city. Click on and highlight in red the blocks you want to extort money from but you don't try to extort too much because your hoods may not have enough time. Greed only pays if you have enough time.

"You don't have the manpower to do a job? You want to whack one of your lieutenants because he's not doing his job but you can't because you don't have anyone to replace him? It's time to recruit some new blood but you have to know where to look first."

Recruiting
Select the Lieutenant allocated to "Security". Click on the second button in the left insert, labeled "Personnel!", then select the fifth icon, labeled "Recruit". A new job card appears, with the name of this Lieutenant's name, and the order "Recruit".

Hoods are usually recruited from gyms or pool halls. There is no overlay for these, so you need to open the clipboard. This button for this is half way down the left insert. Click on the businesses time select the nearest "Gyms". After the first week of your operation you should have some new talent for more teams in your organization. Strength in numbers is always a good thing but remember you have to pay these mugs so don't spend more dough than you can steal.

"Before going out on the streets you're going to need some heaters. Make sure all of your hoods got something to shoot with because the law is always getting in the way."

Weapons
Clicking on the weapons button opens the list of firearms and explosives you possess on the right side of the page, and also display the firearms and explosives held by the lieutenant on the left side. Knives and baseball bats are never shown. These weapons are used by your hoods for close combat, and are supplied by the hoods themselves. You only have to concern yourself with their firearms and explosives.
If you are not careful, seeing one of your lieutenants face down in the street may well become an everyday affair.

**Buying Extra Weapons**

There are six weapon types displayed on the right:

- Twin pack pistols.
- Tommy Gun.
- Rifle.
- Shotgun.
- Pistol.
- Explosives.

If you find that you require additional firearms or more explosives, these must be purchased in order to purchase more weaponry; click on the button at the bottom right. This changes the right page into the Black Market Screen, where you can buy more weapons as you see fit. The Black Market Screen contains the six types of weaponry, on a page torn out of a catalogue. To buy a new firearm or bundle of explosives, simply click on the weapon type to be purchased. Clicking on a weapon causes both the weapon selected to be highlighted, and your money clip to appear. The money clip displays the cost of the weapon, and the total amount of money you have. Subsequent clicking on the tick on the money clip causes one piece of the selected weapon type to be purchased and given to the displayed lieutenant. The money is automatically deducted from your balance.

To sell weapons back, simply click on the button alongside the weapon type to be sold, which appears underneath the lieutenant. The money clip changes, to show the resale cost of the weapon.

**Slow and methodical is the road paved with gold.**

When you first start your crime syndicate, you should be slow and careful in the crimes you plan. Any arrests made by the police can cripple you, forcing you into early retirement. You should start off with simple crimes with a low arrest rate, like extortion. Don't go for the bombings or assassinations right off the bat. Although you have the option of ordering a hit on the Mayor of the city at the beginning of the game, doing so is a very bad idea. All it will do is bring the Fed's attention to yourself and allow your rivals to gain an upper hand.

Remember, the flashy and more newsworthy the crime, the worse off you are trying to pull it off before your syndicate is off the ground. Take it easy, Godfather, good things come to those who wait.

**SYSTEM REQUIREMENTS**

- 100% compatible Windows 95 and DirectX 5.0 system
- Pentium 133 or better
- 16MB RAM
- SVGA video card
- DirectX 5.0 (supplied)
- DirectX 5.0 compatible sound card
- Mouse

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Enter into a virtual world with over 5,000 citizens.
Fallow in the footsteps of Scottish hero William Wallace, taking on the might of the English army to gain your freedom! Braveheart combines real-time MULTIPLAYER strategy with global management in a brutal reenactment of the war between sword-wielding Scottish clansmen and expansionist English forces.

The general idea was to create an environment where the player could dictate his own destiny. So we created a free-form game system limited only by the rules of the 13th century. The strategic management section drives the 3D-battle world. It’s the 2D strategic world, where the player gets to devise his plans for conquest. In the 3D world is where he realistically plays them out. So at a strategic level the player can grow and fortify his bases while building and strengthening his armies. Political relations can be forged or broken. Armies can be commanded to glory or defeat. The player then changes mode from Clan chief to battlefield general as he takes to the field. With our battle engine you can control single individuals or whole armies in one mouse click.

The strategic aspect seems more involved than the usual real time strategy fare, how do the different missions like spying and diplomacy affect play and how do you use them to gain more support for your clan?

Not all conquest is based on brute force, sometimes a timely diplomatic offer can appease a hostile neighbor. Before crucial decisions can be made spies must be dispatched to gather vital tactical information about your neighbors. Scouts can give the player territory information and discover rich land resources, but spies must be used to infiltrate settlements to probe vital information regarding town defenses and supplies.

How will combat be conducted on the battlefield, i.e. how will you subdivide clansmen into interesting...
unit types and what will their abilities be?
The army structure is defined in the 2D strategic world that places emphasis on knowledge of the enemy that is being gathered before the battle. The general structure is simple; an army is divided into a maximum of ten units. A unit is basically a collection of similar soldiers to a maximum of 50. Tactical commands can be issued to units, where strategic commands are performed by whole armies. The player can issue basic commands on any selected characters.

How will the use of formations affect combat. Please give specific details of the usefulness of a couple of formations?
A good example of formation use was shown in the movie where a line of long spearmen for all intent and purpose nullified a charge of cavalry. This will be fully supported in the game. Some of the other formations like wedge are good at penetrating lines of defenders. We've been given some direction on this by Seoras Wallace of the Clan Wallace Trust. Seoras is an authority on Scottish battle tactics. He advised and directed the actors in the movie. He also backs our efforts.

I understand that leaders are very important in combat, and towns in the strategic section. What is their role in the game?
Leaders are basically your hero figures (William Wallace, Robert the Bruce etc...). You need to have a leader to send an army on a mission. You also need a leader to act as a diplomatic envoy in the case of forming allegiances. Leaders are strong fighters in the combat section and sometimes used to assassinate other leader characters. If a leader dies then he is removed forever from the game. Leaders can be fickle characters that require payment to maintain their services. Only the most powerful clans can attract the best and loyal leaders.

What about multiplayer modes?
Braveheart multiplayer will allow up to 12 users to play via TCP/IP LAN and WAN, IPX LAN, and on the Mplayer gaming service. There will be three modes to the multiplayer game: Co-operative Campaign against the Computer, Human vs. Human Campaign, and Human vs. Human field of Combat game.

What are you planning in terms of AI features?
There are sixty individual clans in the game, all with their own objectives and characteristics. The game also has a very in-depth resource management system that can be run on an automated setting for the hack and slash purists. On the battlefield all soldiers use a line of sight system and cannot react to combat situations with their knowledge. We are currently experimenting with an evolved learning system that allows computer controlled armies to react to variance in the players tactics. There will of course be general rules for soldier types versus others and the AI systems will take account of these also.

Any bragging about the power of the graphics engine?
Ok then. The 3D engine uses actual satellite data of the whole of the UK to fractally generate a realistic landscape. You can walk across the whole of Scotland if you wish. All the in-game scenes have been motion-captured to add even more realism. And the high poly count allows battle scenes that rival the movie in terms of number of people, brutal realism and frenetic atmosphere.

Anything else?
It was a pretty influential film in the movie industry, and hopefully we can follow in its footsteps in terms of the game's community.

Watch for Braveheart coming this spring from Eidos Interactive and Red Lemon Studios.
A NEW DIMENSION IN STRATEGY GAMES

REAL-TIME STRATEGY GAMES HAVE RECENTLY MORPHED INTO LOOKING AND PLAYING LIKE ONE IN THE SAME. IT'S RARE TO FIND A GAME THAT STANDS OUT AMONGST THE SEQUELS AND CLONES. UNTIL NOW.....

WARZONE 2100 is an amazingly detailed and graphically intense 3D action strategy game. The in-depth gameplay features 400+ technologies to research, 2000+ different units to design at your own will, a fully rotatable and zoomable 3D terrain, three large campaign maps to conquer, and 24 fast-play mission maps for extra action. Combine these features with a fast-play interface and a wide variety of multiplayer options and you've got one hell of a game! This is true strategy by design.
A technical error in the satellite defense system sent nuclear warheads to Washington, Beijing and Moscow. Minutes later ground based sites fired in response to the launch. Millions died as nuclear firestorms wiped out the world's cities. Billions more died as plagues and epidemics swept away what remained of civilization.

Less than a million people survived the collapse. Earth broke into hundreds of small scavenger bands battling each other for the remnants of the former civilization. Only a few had the vision to attempt to rebuild a new world from the ashes. What they didn’t know was the entity responsible for the collapse was out there waiting for them....

Upon entering the post-nuclear world of Warzone 2100 you land from your transport and establish your base. Here you conduct research, design and manufacture vehicles, build new structures and prepare your plans of global conquest.

The action takes place over three huge campaign maps consisting of the Western Desert, Urban Devastation, and the Rocky Mountain Breakdown.

Each campaign features a large campaign map and six or more sub-maps. As key objectives are reached on the campaign map, missions are activated on the sub-maps. These missions are very varied from hit and run attacks to building structures to hold territory. The combat is fast and frantic with amazing graphical effects. Weapons range from bulleted and lasers to explosive weapons that blast large areas of the highly detailed 3D battlefield.

**DESIGN YOUR STRATEGY!**

Vehicle design uses a simple mix and match selection of vehicle parts to create over 2000 different vehicle types. Players can see the difference between vehicles as they design them and can experiment with different weapons, propulsions and bodies. Creating your own vehicles is key to your overall strategy. Following is profile on each of the main vehicle types.

**HEAVY TANKS**

Heavy tanks carry huge weapons and are heavily armored. Expensive in power costs, they are produced slowly, but are hard to destroy. Heavy tanks form the main part of assault forces using their vast weight to crush all opposition.

**PROPULSION SYSTEMS**

These systems are used to make your forces as effective as possible. Once researched, a propulsion systems can be added to a unit that meet their specific mission.

**MEDIUM TANKS**

As technology progresses new bodies become available with heavier armor and more efficient weapon systems. This medium tank is slower moving than the light vehicles, but packs heavier weapons and is more heavily armored.
needs. Coming in a wide variety of styles and toughness, a commander will never be at a loss when faced with varying terrain. Correct propulsion system choices are a commanders key to winning a battle. Some system examples are Hover Jets, VTOL, and Wheels.

COMMANDERS
Commanders lead other vehicles in battle. They are equipped with laser designators which allow them to nominate targets for an entire group. Commanders form a key part to the game.

SENSOR VEHICLES
These vehicles are equipped with powerful sensors that allow them to detect enemy units and while vehicles rely on sensors to detect enemies. You'll have to be sure to build radar towers to sweep areas for enemies.

VTOL ATTACK CRAFT
Units may be fitted with a variety of propulsion systems. This VTOL structures that are outside the range of other vehicles.

JAMMER VEHICLES
Jammers block enemy sensors by reducing their range and power. They also make it harder for units within their range to be hit. Realistic line of sight hills and structures conceal enemy units.

"THIS IS TRUE STRATEGY BY DESIGN"
Attack Craft is ideal for strafing enemy vehicles and flying close escort for land based units.

MULTIPLAYER MAHEM!
- Multiplayer options include 2-8 Players
- Local Networks
- mplayer.com
- In Game Speech
- Transmissions between players
- Play campaign games or fight in Death Match battles
- Fully customizable set-ups
- Select technology levels
- Set power levels
- Create and break alliances
- Design your own custom force
- Save out force rosters for future battles
- League table showing victories and losses

Category: Action/Strategy
Developer: Pumpkin Studios
Publisher: Eidos Interactive
Release date: March 1999
www.eidosinteractive.com

Artificial intelligence in games seems to everyone's hotlist. What are your thoughts on AI? The AI is one of the most important aspects of any game and in Warzone 2100, it was intended from the start of development that the AI would be robust, practical and sufficiently advanced to allow us to realize a game of Warzone's level of complexity. The term 'AI' has recently become a buzzword of the development community, yet it is rather carelessly and inappropriately used. Three of the programmers here have honors degrees in AI, and this puts us on a solid starting point from which to build some genuinely intelligent artificial behavior.

Could we have some examples of some of the AI features in Warzone 2100? Essentially, the basic AI that we started with was the best of absolutely everything that had ever been done before in the older (2D) action strategy game genre. From there, we went on to add many more features, the majority of which are unique to Warzone 2100. For example, friendly units have various levels of AI that can be set by the player using the command console. These cover amongst other things: engagement ranges, retreat levels and attack priorities. These features are coupled in the game with sophisticated "commanders" which coordinate attacks by their group. Commanders also act as delivery points for factories so that regardless of how frantic things presently are, reinforcements are always sent to exactly where the action is.

What about enemy AI? Enemy AI is even more advanced; enemy scout groups assess the opposing threat before engaging or calling up an attack force. Enemy units break off from attack and move to the rear lines for repair and regrouping. Scout units can also call in artillery and air strikes.

The enemy also actively seeks out resources on the map and aggressively defends them. Commanders are used to coordinate attacks between the different arms of the enemy forces.

Additional features cover counter battery fire units and VTOL (vertical take off and landing) strike units which can be set to fire on any enemy that attacks their defensive zones. This makes for speedy gameplay yet leaving the player fully in control of the overall tactical situation.

Alex McLean
Head of Software Engineering
Pumpkin Studios, EIDOS Interactive.
It's Good to Be Bad
Master the Minions of Evil in This Polished Gaming Legend

by Lance A. Larka

Were you one of last year's hopelessly addicted WARLORDS III fanatics? Did you lose countless nights of sleep as you juggled supply lines, razed castles, and built the definitive, killer stack of units? If you were, prepare to lose some more sleep. If you weren't, well, prepare to start losing sleep because WARLORDS III: DARKLORDS RISING is here, and it's bigger than its predecessor in every way.

Gamers familiar with REIGN OF HEROES will feel right at home—not surprising considering the first game is on the CD. Gameplay is still turn-based and grounded in a rich fantasy setting. DARKLORDS RISING's main campaign picks up where REIGN OF HEROES left off, only this time you play the misunderstood and malign Lord Bane. There are four other campaigns to immerse yourself in as well.

A MAP WITH EVERYTHING ON IT IT'S easy to create your own maps, but you'll be hard-pressed to come up with anything sillier than this map, which actually comes with the game.

My, What Big Units You Have
The most visible additions in DARKLORDS RISING are the 31 additional army units, 5 new hero classes, and 28 new spells and abilities. You're also treated to two new game types and victory conditions. For an especially entertaining combination, try playing "Battle of the Titans" with the "Capture the Flag" victory condition. In this variation, each side gets a level 10 hero then must get the eight major magical items placed in the game. The first side that has a hero holding all eight items wins. The catch is that any hero holding any of the items has a nice flag on the icon. Talk about waving a red flag in front of a bull.

There are other, invisible, but still important, improvements over REIGN OF HEROES. The AI has been tweaked to provide a much tougher computer opponent. Many times I watched stacks of powerful enemy units slip through my carefully guarded flanks and wreak havoc on my cities. My heroes also drew careful attention from the enemy, especially when they were vulnerable and not just accessible.

My, What Nice Tools You Have
The interface in WARLORDS has always been among the cleanest and most user-friendly in the genre, and DARKLORDS RISING isn't going to buck the trend. Everything is mouse-driven, easily accessed from the main window or a pop-up menu, and completely intuitive.

My one and only complaint about it is the strategic map. The scroll-worked border blocks a few pixels of the map graphic and any towns or ruins there.

The newest and best feature of DARKLORDS RISING isn't a part of the game proper—it's the fully functional editor. The game comes bundled with everything that you need to design, build, and edit maps, scenarios, and campaigns. You can even edit the intro, victory, defeat, and resignation text. The game had replay value before, but now there's just no stopping it.

The manual does not meet the standards of the rest of the game. It has the look of an editor's copy, with inaccurate references, lost sentences, and what appear to be comments to the staff for revision or notation. To learn fully about the game you would need to have the manual from REIGN OF HEROES.

However, the appendices are the best I've seen when it comes to explaining the combat system, spell affects, and unit statistics. They are an excellent reference when you're planning, playing, or building a scenario.

DARKLORDS RISING is a great game and fun to play. It has all the magic and attraction of previous titles in the series with the added advantage of the engaging campaigns, appealing scenarios, and wonderful editor.

Now...let's go hunt some good guys. COGW
The People Deserve Better
Creativity Is Lacking in Great PEOPLE'S GENERAL Engine

by Tim Carter

Capitalism, democracy, freedom... those oh-so-intangible qualities that have allowed the good guys to triumph over countless hordes of historical and fictitious automation-like hordes. As one of the good guys, your equipment is good enough, but it's your ingenuity—the product of a centuries-old free society—that will see you through.

It's a pity, however, that the challenges—and the very battlefield on which you are expected to triumph—appear to have been created by well, automatons. (They must be New Age Communists, however, since they want your money, too.)

PEOPLE'S GENERAL puts you in charge of the combined Allied (mostly American) or People's Republic of China forces in a global war circa 2008 that ranges from Siberia to Southeast Asia and back again. The game combines a proven interface and game system with the dullest set of battles since Sir Douglas Haig decided to march on Berlin six inches at a time.

**New Model Army**

As you'd expect, PEOPLE'S GENERAL relies heavily on PANZER GENERAL II, although the combination of significant game tweaks and the distinct nature of 21st-century warfare should keep gamers from getting too severe a case of sequelitis. Naval forces no longer play a significant role in the game, and amphibious assault scenarios start with your troops already on the beachhead.

Air support is handled in a much more abstract manner. As a local force commander, you are allocated a particular amount of air power that can be used for ground support, reconnaissance, antiair defense, and defensive missions. You no longer control individual air units, and the whole idea of running out of ammo or fuel has been removed.

On the other hand, your core force will include helicopter units that act much like Stukas. Air-mobile units, new to this series, come with their own helicopter transport and are particularly useful for hopping long distances or dropping a critical extra unit into a battle. A few other minor changes also make PEOPLE'S GENERAL more interesting than its predecessors. For instance, you may now purchase minor customizations for your units, beefing up their abilities somewhat in particular areas. You can give some units more and better ammo, while improving others' movement and antiaircraft firepower. This is a nice touch because it allows a creative commander the chance to customize his force further. As the essence of the entire game system is getting the appropriate match-ups between your units and the enemy's units, the chance to tweak your forces, even just slightly, adds a fun, new element to the building process.

Unit leaders now play a somewhat more prominent role (there are more of them), and you may also curry favor with the High Command by taking particular trigger objectives or by winning more prestige, leaders, air support, or prototype units.

**The Long Mis-Steppes**

While there's no arguing with the success or playability of this game system, the campaigns in PEOPLE'S GENERAL—some short, others up to 18 missions—leave a lot to be desired. Although the names of the battles change, most scenarios leave you feeling as though you're retracing your steps.

The campaigns take you from the Russian heartland to the jungles of Vietnam, Malaysia, and Thailand to the hills of Korea. Oddly enough, the designers fashioned a hypothetical war between China and the rest of the world that somehow didn't involve either Taiwan or Japan. (And why, I'd like to know, is a large U.S. army fighting in Siberia?)

In fact, the entire package of scenarios, taken as a whole, demonstrates a pretty serious lack

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**Review Summary**

- **APEAL:** Something to do while you wait for Panzer 3D.
- **PROS:** Nice additions to a great game system; attractive (in 16-bit color) and fun at times.
- **CONS:** Boring campaigns comprised of boring scenarios.
- **DIFFICULTY:** Easy.
- **SYSTEM REQUIREMENTS:** Pentium 166, Windows 95/98, 32MB RAM, 60MB hard drive space, 8x CD-ROM, DirectX compliant 2MB SVGA video card, supports DirectX-compliant sound cards.
- **3D SUPPORT:** None.
- **MULTIPLAYER SUPPORT:** LAN and Internet (2-4 players), email (2 players), 1 CD per player.
- **Price:** $59.95
- **Publisher:** SSI
- **Novato, CA**
- **(800) 716-8923**

[Image: BOMBS AWAY! From this air allocation screen generals can call down a quite limited number of air strikes.]
of creativity. Despite a wide variety in terrain and climate, you never really have to adjust either your force mix or your tactics. The full-on armored assault that worked on the plains of Siberia will also carry you to Hanoi. I have the sneaking suspicion that my tanks shouldn’t be quite as mobile in dense jungle as they are on the frozen steppe.

Many other countries provide settings for the campaign, and the U.S. is supposed to have all kinds of allies in the hypothetically war, yet your forces are pretty much all American in their composition and abilities. Sure, you can buy other units for your core force (which also doesn’t make a hell of a lot of sense), but you simply don’t see much of the UN-like conglomerate that made the Korean War, for example, so interesting.

Moreover, there isn’t much dramatic tension in the way the scenarios unfold. The campaign is quite linear, and accumulating more prestige points seems to be your only reward for finishing quickly. One of the things that made the original PANZER GENERAL so much fun was the historical payoffs that came from accomplishing particular scenario objectives—like the ability to invade England if you won a decisive victory at Dunkirk.

As with so many strategy games these days, PEOPLE’S GENERAL comes complete with its own scenario generator. Sadly, the scenario generation system is no more creative than the campaigns that come with the game. Because the maps for PEOPLE’S GENERAL are hand-painted, you must choose from among the limited number that come with the game—which gets old pretty fast. You do get some useful maps of South East Asia, which should allow creative gamers to relight a few battles from the Vietnam War if they so choose.

Also, you are not only limited to the units provided by the game (a quite exhaustive selection) but also to the basic preset unit and terrain characteristics. Thus, you can’t really create anything genuinely new.

You do have significant control over the type and composition of the opposing forces. Interestingly, the campaigns do not take advantage of the diversity of the available forces. Thus, the one attraction of the scenario generator is that it gives you the ability to field armies from, say, Germany and England. As to why the British should be duking it out in Vladivostock in the first place? Well, that’s where your creativity comes in, isn’t it?

JUGGERNAUT By the later scenarios, the U.S. Army becomes unstoppable. Here, the number of units barely fits on the map.

PANZER GENERAL II altered the scale of the game to such an extent that most scenarios lost their you-control-the-whole-battle feel. Yet, you still had the sense that your success or failure affected historical events with which most gamers would be familiar. And, given that PEOPLE’S GENERAL posits a hypothetical future war, the designers have an even greater burden to develop a story that could carry its own weight—something they haven’t managed to pull off.

As with virtually all of the GENERAL series, most scenarios also put you in the role of the attacker (unless you are in a multiplayer game). This is perhaps necessitated by the AI, which is quite good at local counterattacks but otherwise seems a tad passive. Also, the AI doesn’t seem to use helicopters to maximum effect, and has a tendency to leave artillery units in dangerous, unprotected situations.

In PEOPLE’S GENERAL, SSI has delivered yet another great game system. Unfortunately, they haven’t quite delivered the game itself. Mind you, if they were to release a scenario pack sometime in the future that compensated for the weak campaigns, I’d be the first to go out and buy it.
Emergency: Fighters for Life

Publisher: WizardWorks
Price: $19.99
www.wizeworks.com

We’re all familiar with disaster footage from the nightly news: airplane crashes, terrorist bombings, 10-car pile-ups, and five-alarm fires. The typical visual is of a grim-streaked rescue worker holding the bloody, unconscious form of some fortunate soul saved from the wreckage.

For those of us who never outgrew our childhood dream of being the fireman carrying that baby out of the burning building, WizardWorks’ EMERGENCY: FIGHTERS FOR LIFE provides a most satisfying jolt. EMERGENCY puts you in command of a rescue team that has to respond to 30 scenarios, ranging from a simple traffic accident to a nuclear power plant meltdown. You dispatch the vehicles (fire trucks, ambulances, cop cars, rescue helicopters) and the staff (firemen, medics, stretcher-bearers). Once they reach the scene, you decide what they do. Do you start by fighting the fire or tending to the wounded? Does one fireman or two search for victims? As in real-life, if you make the wrong decision, people die.

After a few missions, the complicated controls become intuitive. (Although the human figures are small enough that you sometimes lose precious seconds trying to position your cursor so you can select the one you want.) After some simple tutorial scenarios, the missions get nicely complicated: lots of people scurrying about, lots to be done, and a ticking clock counting down the seconds to disaster.

EMERGENCY surprised me with its sense of true urgency, reinforced by the terrific animations that introduce most of the scenarios. It’s also more of a puzzle game (but a good puzzle game) than a strategy game, asking you to rethink and replay each scenario until you achieve a performance rating of 100 percent. With better controls, EMERGENCY would come closer to achieving a 100 percent rating itself. —Charles Ardai

Total Annihilation: Battle Tactics

Publisher: Cavedog
Price: $19.99
www.totalannihilation.com

TOTAL ANNIHILATION: BATTLE TACTICS is sort of like a sex manual aimed at Madonna—'tis very interesting, and chock full of entertaining and useful stuff. But...isn’t the target market a bit too experienced to need it at this point?

This disc includes a set of 100 new missions for TA that act as an interactive primer for the new player, teaching newbie strategy gamers how best to allocate resources, take advantage of units, and handle battles. If you get stuck, hints are available in the manual for each mission. The missions are all well done—and are not that easy—but with a game that’s been out this long, is a tutorial really needed? Newbie strategy gamers aren’t likely to spend $40 on a game and another $20 on an add-on disc just to get started—this title would have made more sense had it been bundled with the executable and released as a full-fledged beginner’s edition. Still, even veteran TA players will find some value here. The 100 missions are divided into four types: very short, short, medium, and long. The very short and short missions—still challenging despite their brevity—range from 5—20 minutes in length and are great for those moments when you only have time for a quick gaming break. If you’ve ever told your spouse “Honey, I’ll be coming to bed in just a moment, as soon as I finish this game” only to suffer the consequences of getting tied up in a two-hour melee, you’ll appreciate them. —Denny Atkin
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A Classic Sampling
Classics and Puzzle Reviews at a Glance

Looney Tunes Cosmic Capers Animated Jigsaws

Publisher: SouthPeak Interactive
Price: $29.99

Looney Tunes Cosmic Capers Animated Jigsaws is an entertaining puzzle game that will keep you entertained for hours. The game features classic Looney Tunes characters, and the jigsaw puzzles are designed to be both challenging and fun. Each puzzle is a work of art, and the music and sound effects add to the overall experience. Whether you're a fan of Looney Tunes or just looking for a good puzzle, this game is a must-have.

Notyet

Publisher: MVP Software, Inc.
Price: $19.95

Notyet is a small, independently published puzzle game that offers a unique twist on the classic jigsaw puzzle format. The game is designed to be played on a computer, and it features a variety of puzzles that range from easy to challenging. The graphics are colorful and engaging, and the gameplay is smooth and intuitive. Whether you're a puzzle fan or just looking for a fun way to pass the time, Notyet is definitely worth a try.

Play This Play That

Publisher: Patch Products, Inc.
Price: $19.99

Play This Play That is a classic puzzle game that has been updated for modern players. The game features a variety of puzzles that range from easy to challenging, and the graphics are colorful and engaging. The gameplay is smooth and intuitive, and the game is designed to be played on a computer. Whether you're a puzzle fan or just looking for a fun way to pass the time, Play This Play That is definitely worth a try.
Might & Magic VI

by Scorpia

M & M VI: MANDATE OF HEAVEN can be a difficult game, especially toward the beginning. The reduced party size and emphasis on skills make for a pretty big learning curve, and it's difficult to figure out the best ways to fight the opposition. There is hope, however: Getting off to a good start with a well-balanced party can go a long way toward reducing early frustration.

Knights in White...Whatever

My own experience is that knights, even at high levels and after several promotions, didn't fight that much better than anyone else. Likewise, clerics have, at best, weak offensive spells (until supplemented with Light and/or Dark magic). So, when tailoring my group the second time around, I dumped the knight in favor of a second archer, and dumped the cleric for a druid.

Overall, the best party turned out to be an archer, a druid, and two sorcerers. This lineup gives you four characters with elemental spells, and at the higher experience levels, archers have a respectable number of spell points. Even early on in the game, an extra fireball or meteor shower can be a great help. Furthermore, archers come with the Bow skill, which is tremendously helpful for much of the game. I also like to bring my archers up to speed in the Spear skill, which conveniently includes tridents and halberds.

Don't Dread Druids

Druids need to be built up carefully; you don't want to squander precious skill points, particularly at the start. I prefer to bring my druid quickly to expert level in Spirit (for the partywide Bless and Heroism spells), Body (for the healing), and Fire, which is the workhorse offensive group most of the time.

Afterward, you can decide where your druid's studies should be concentrated: One good method is to increase proficiency in complement to the sorcerer; with the druid working on, say Earth and Fire while the sorcerer does Air and Water. This approach quickly gives you power in all four magical elements. Of course, the cleric skills shouldn't be neglected. I generally increase Spirit and Body to master levels and leave Mind for later (though one should have Mind at least to expert level before too late in the game).

I always aim for Water Master with a sorcerer as quickly as possible. Life is much easier when you have both Lloyd's Beacon lasting for weeks and full control over Town Portal. This typically means bringing the sorcerer to Fire Expert first, then leaving that off to work on Water. Once mastery has been achieved in these skills, I turn back to the others.

Do You Feel Lucky, Elf?

During the point-allocation phase when creating your party, take two points off Luck for each character you can. This gives extra points for other stats, and everyone can drink twice from the Luck well in New Sorpigel to restore the lost points—just make sure to go straight to the well right after the game begins.

One way to get off to a good start is to show the letter to Andover and collect your money. Then, drink from the Luck well. Get the horseshoes from the stable, go to Castle Iron Fist, and grab the horseshoes from the castle's stable as well. Run up the mountain, staying well to the right. See Lord Humphrey. See Lord Humphrey give you 5,000 gold and tons of experience. See your party training. Train, train, train.

After your party has gained two levels, go back down the mountain and see Andrew (near the stable); buy Berserkers Fury membership.
Go to the guild, purchase the Bow skill for everyone who needs it, and buy bows at Eagle Eye. Return to New Sorpigal via stable. Be a big spender; go around and buy guild memberships in all the guilds. Visit Blades End and get a Hand Weapon skill for archers.

After Dark Plot Savers
Wait until 6 p.m., then enter Buccaneer's Den and buy Disarm, Merchant, and Item ID, giving each skill to a different party member. Sack out at the inn (you deserve it). The next day, train your characters up to level three. Bring the Item ID skill up to four, then see the expert trainer over the inn. Give the four horseshoes to your ID expert to replace the points he or she just spent. You now have a bona fide level-three party that is capable of fighting in close or from a distance, as well as enough points to bring one skill apiece to expert level and the ability to identify a good 80–90 percent of the items you find (which can net you some real savings).

From this point on, your merchant should do all transactions, including buying spells, paying for rides via ship or stable, buying and selling items, staying at an inn, etc. Later in the game, you obtain Merchant skill for the rest of the party, as it will make training costs much cheaper (those high-level training sessions really eat up the cash).

Once New Sorpigal is cleaned up, Mist is a good next stop. The Followers of Baa and friends are easy kills, and you can pick up some decent spells at the guilds. The Silver Helm Outpost, however, is a tough place, and best left for a time when your group is more experienced.

After Mist, Castle Ironspur is the place to go. The game will turn tough here, especially in the dungeons. The Shadow Guild is the easiest of the bunch, so you may want to start with that one. If you're having a lot of trouble in the dungeons, you can take time off to clean up the outdoors for extra experience, or even go up to Bootleg Bay to beat on the cannibals and lizards there.

Magic Booster Shots
Booster spells such as Bless, Heroism, Day of the Gods, and so forth are a great help in combat. Get them early and use them often. Stone Skin, especially at high levels, is also good.

Turn-based mode is good for fighting, but you can also travel, enter/exit dungeons, and open doors in turn mode. Always go to turn mode when entering a new dungeon, as some of them have unsavory welcoming committees right on the other side of the door. Room doors in dungeons are usually best opened the same way.

Quests have no time limit. The giver will wait patiently until whenever you get around to accomplishing the task. If a mission is too tough, leave it for later and go do something else.
Training takes the same amount of time whether you’re training one person or four, 1 level or 10 levels. It’s therefore best to bring everyone up together, and to complete a dungeon (or dungeon quest) before training. By going up several levels at once, you have more skill points to allocate, and this becomes important later on, when skills need a lot of points to advance.

Items for sale in the shops and guilds are chosen at random the first time you walk through the door. Especially for spells, save before entering a guild the first time. If you don’t like the selection, exit, restore, and try again. Note, though, that not all guilds have all spells. You’ll never get Incinerate or Fly in New Sorpigal; only the high-level guilds have high-level stuff.

If your reputation has taken a nose-dive because of something you did (even unknowingly), you can fix that by making donations at temples. Shines that boost stats work only in one particular month. You must ask the Seer about “pilgrimage” each month—even if you asked him about a shrine previously—and then go touch the shrine to receive the boost (it helps to know where the shrine is, of course). The traveling circus shows up three times a year only, in the following places: Blackshire in April, Darkmoor in July, and Bootleg Bay in December. The circus has six games, which give you the chance to win golden pyramids or kegs of wine. These can be traded at Abdul’s Desert Resort in Dragonsand for various random items, or sold for cash to various people in Free Haven.

At the Shrine of the Gods in Dragonsand, each person must touch the shrine to receive the +20 (permanent) boost to stats and resistance. There is also an Easter egg here: After touching the shrine, click on the inner walls to visit a very special dungeon—keep an eye out for the cube that grants a Day of the Gods spell at +256 to the seven stats. Until next time, happy adventuring.

---

**Creepy Caves & Critters**

If you’re just starting out in M&M VI, it’s tempting to investigate first and lick your wounds later. Here are a few of our least favorite things. Avoid them.

**Lair of the Wolf**

This dungeon entry spot isn’t a nice place to visit, and you really wouldn’t want to die here.

**Stone Gargoyle**

As seen from its stingy hit point bar, these weaklings are more annoying than dangerous.

**Diamond Gargoyle**

This critter, on the other hand, boasts about the length of his bar constantly (must be a male).

**Minotaur**

Don’t try to be Theseus—steer clear of these wherever possible.

**Dragonsand**

Aptly named, with lots of dragons around. The upper right map shows locations (red dots) of all dragons nearby, and as usual, they are much too close for comfort.

**Colossal Hydra**

I hate snakes (in this game, anyway). You should, too.

---

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Peope's General

Projecting Power in the 21st Century

by Marc Dultz

Gamers will readily discover that PEOPLE'S GENERAL portrays warfare in a totally different light than does its predecessor, PANZER GENERAL II. PEOPLE'S GENERAL demonstrates the profound technological advances that have emerged since the close of WWII. Fire-and-forget missiles and lethal weaponry capable of being transported by one man are now commonplace on the battlefield, and they are designed to destroy a target from several miles away. What's more, the advent of both the transport- and scout/attack helicopters and the development of jet-powered, ground-attack aircraft have added an entirely new dimension to the modern battlefield. All that gives today's commanders much more flexibility and destructive capability than their WWII counterparts could ever have hoped to possess.

Knowing how these complex systems operate on today's battlefield will certainly help to further your understanding of modern military strategy and tactics. Moreover, learning how these systems are employed in PEOPLE'S GENERAL will not only guarantee victory on the virtual battlefield, but also ensure success on the treacherous campaign trail.

Combined Arms

First popularized by the blitzkrieg strategy of the Wehrmacht during the opening stages of WWII, the combined arms concept—which entails having all available artillery, infantry, armored fighting vehicles (AFVs) and tactical airpower work in concert to achieve a common objective—is even more important on today's battlefield. In PEOPLE'S GENERAL, every type of unit, whether an attack helicopter or a self-propelled artillery battery, possesses different strengths and weaknesses, making each adept at certain tasks, yet ill-suited for others.

For instance, armored fighting vehicles (AFVs), which include tanks and armored troop carriers, are generally much more effective if employed against artillery, air defense units, and soft targets—such as infantry and combat support units—especially if these can be engaged on clear terrain. However, AFVs are generally incapable of eliminating entrenched enemy infantry units hunkered down in cites, rough terrain, and forest hexes, and must rely upon other supporting arms to soften up these positions before they attack.

Helicopter Heaven

The naive view of attack helicopters is that they are flying tanks. In reality, choppers have some limitations, such as being forced to immediately end their movement phase if they fly within range of an enemy air defense unit. What's more, defensive air strikes against a helicopter can force it to flee from the map, rendering it totally ineffective for the duration of the turn. Whenever possible, you should always reconnoiter an area first before dispatching a helicopter, moving in an air defense unit to help protect the helicopter against enemy air-to-air fire.

Helicopter troop ships should be used to transport airliftable units from rear area assembly points to forward air bases, particularly when the terrain is poor and ground movement for other units is proceeding at a sluggish pace. Transport helicopters should also be used to drop air-mobile units deep behind enemy lines, seizing victory objectives or holding open critical road junctures until reinforcements can arrive. Light infantry units are particularly good at conducting air-mobile operations because they can load, fly, unload, move up to their full movement allowance, and even finally initiate an attack on the same turn. Be advised, though, that air-mobile units cannot land in an enemy zone of control, so it's important that you conduct reconnaissance missions prior to their insertion in order to locate good drop zones.

See the Review

THIS ISSUE • 3 STARS

STUCK ON YOU Attachments are worth their weight in golden prestige points.
The development of smart bombs, sub-munitions, low-flying weapons platforms, and reconnaissance drones has made the modern battlefield a much more lethal environment to operate within than that of WWII, even for heavily armored forces. Although AFVs are still considered to be the king of the battlefield, they’re nevertheless quite vulnerable to helicopter attacks, air strikes, and antitank weapons. Unless accompanied by strong air defense and rapidly advancing infantry forces, even the best AFVs can be pummeled and destroyed in rather methodical fashion. Your goal is to acquisition, field, and maintain as wide an array of forces as possible—one that will immediately be able to overcome any type of threat.

While it certainly helps to have a plentiful supply of cheap units at the ready, in reality it is advantageous to have only a few battle-hardened units on hand rather than hordes of inexperienced units. Although veteran and elite units cost more to purchase than inexperienced units (units typically cost 30 prestige points per experience level), they also sustain far fewer casualties in battle and inflict far greater losses upon the enemy. What’s more, veteran and elite units can also be pumped up to higher than normal strength levels between scenarios, thereby increasing their stamina over the battlefield and improving their combat effectiveness. Finally, veteran and elite units can receive replacements several times during a scenario before their combat strength begins to show signs of eroding, an important point to remember because of the manner in which replacements are now treated in PEOPLE’S GENERAL.

A Matter of Prestige

During a battle, prestige is no longer used to purchase replacements for weakened units. In fact, replacements are free—any friendly unit can receive replacements so long as the unit isn’t located adjacent to an enemy unit. The problem, however, is that whenever a unit receives replacements during a scenario, its overall strength is diminished (it’s reduced by one strength point every time you attempt to bring the unit back up to full strength). Therefore, unless the unit is very experienced, it probably makes more sense to temporarily withdraw those units that have received numerous replacements during the later stages of a scenario, taking them off the front lines to guard a CSU or some other supporting arm.

Another principal difference between PANZER GENERAL II and PEOPLE’S GENERAL has to do with the concept of attachments. Attachments give a unit special abilities above and beyond its normal capabilities. In fact, new units may be augmented by as many as two supporting attachments the moment they’re purchased. Even though attachments increase the purchase price of a new unit (30 prestige points per attachment for the Western side, 50 per attachment for the Chinese), they are nevertheless very important assets to have on hand, especially for armored, artillery, and overstrength units. For instance, an AFV equipped with a bridging capability no longer has to rely upon an engineer unit to help it ford a river. In a similar manner, reconnaissance attachments not only improve the

Air Supremacy

Air superiority and vertical envelopment are of paramount importance in PEOPLE’S GENERAL. A player’s level of air superiority will not only determine how many air missions he will be permitted to fly during any given scenario but it will also affect his aircraft’s range and capabilities.

Whenever the air superiority level is low, all friendly helicopter movement is severely curtailed, reducing their range, airdrop capability, and combat effectiveness. By the same token, a low air superiority level will reduce the range of friendly fixed-wing aircraft, making them far less effective in both the reconnaissance and air-strike roles. Despite the relatively high cost, you should always adjust your air superiority level to 100 percent, spending as many prestige points as it takes to ensure air supremacy and complete freedom of movement.

Once air supremacy has been established, airpower should be used to: (1) help you locate and ascertain the enemy’s dispositions and strength; (2) destroy high value enemy units, such as artillery and combat support units; (3) suppress enemy air defenses; and (4) ward off any enemy attack helicopters. Resist the temptation to spend all of your prestige points on air missions at the first sign of trouble. Instead, spend your points in small increments, making sure to always keep enough prestige points on hand to call in any type of air mission, even during the latter stages of a scenario.

Attack helicopters are especially good at softening up enemy positions, especially armored concentrations, before a ground assault is undertaken. Attack choppers should also be used to destroy any enemy units that may be situated outside the combat range of friendly ground forces. Lastly, attack choppers are good at protecting open flanks, and they are generally able to blunt or slow any enemy drive until friendly ground forces can be brought up.
Finally, it makes sense to add a combat support attachment to either overstrength units or units containing a leader. The combat support attachment will not only let the unit recover all of its original overstrength level during the replacement phase but also negate the effect of diminishing replacements. In effect, these powerful units will stay strong for the duration of the scenario, which in turn means they'll probably accumulate even more experience points as the battle wears on.

**Force Multipliers**

The combat support unit (CSU) is perhaps the most important unit in your arsenal, serving, for all intents and purposes, as a mobile reinforcement center. Now, instead of having to deploy units at distant supply hexes far removed from the Forward Edge of the Battle Area (FEdA), you can put new units into play in the hexes surrounding a CSU, so long as the CSU isn't adjacent to an enemy unit.

Interestingly, additional CSUs can be purchased, deployed, and moved all in the same turn, in much the same manner as regular combat units. Theoretically, a player can create a continuous chain of CSUs, placing new CSUs and fresh units closer to the front lines, where they're obviously needed most.

Building, then moving, multiple CSUs closer to the FEdA becomes

---

**Order of Battle**

Knowing how, when, and where to commit your forces to battle is certainly one of the most fundamental concepts operating in PEOPLE'S GENERAL. Unless the enemy's dispositions and strength have already been determined, it's always a good idea to scout out the terrain situated along the axis of advance, thereby avoiding any traps or nasty surprises that may be lying in wait.

While aerial reconnaissance is ideal, overflights will also cost you valuable air mission points each time you execute them. Aerial reconnaissance should instead be used to reconnoiter the enemy's rear areas, searching for potential drop sites for your air-mobile forces.

Because the spotting rules have been changed significantly since PANZER GENERAL II, you should use your reconnaissance vehicles to locate and ascertain the strength of the enemy forces before initiating any other movement or attacks.
a very effective means of seizing a vital objective toward the end of a scenario, especially if a player may not have enough units on the map to get the job done under the prescribed time limit.

Reconnaissance units are equally important units to have on hand. First off, they’re capable of spotting enemy units your main force may not be able to observe. More importantly, however, reconnaissance units act as a screen for other friendly units operating nearby. So, while the enemy may be able to see a recon unit operating within range of his forces, he may have no idea that other enemy units are, in fact, close by, hidden from view by the recon unit. It should, however, be pointed out that the further a friendly unit is from the recon unit, the more likely it will be spotted by enemy units.

One last point: While it may seem as if your forces are firing blindly at unknown or spotted enemy units, you can determine the amount of damage your troops are inflicting simply by watching the upper information bar. The results for each attack will be posted in the upper right-hand corner, which will give you some indication as to whether or not your attack has succeeded.

Ideally, these units should fire from extreme range (typically two hexes) in order to avoid enemy return fire.

Now it’s time for your own armor to roll up and eliminate any remaining armored units. In some instances, it may be better to use ranged fire (two or more hexes away) against the enemy rather than initiate a close assault. Also take this opportunity to overrun any enemy infantry units that may be deployed in clear terrain. If the opportunity presents itself, engage weaker enemy infantry units first since your tanks may be able to move and fire a second time against nearby enemy units. Finally, have your infantry units, including the engineers, move up, eliminating any remaining pockets of resistance.

Remember that reconnaissance vehicles can conduct staggered movement each turn, moving, locating, and identifying enemy formations, then withdrawing before they themselves are spotted and subjected to enemy fire.

Once the enemy’s positions have been ascertained, artillery should be brought to bear to soften up the enemy’s defenses. Plan on eliminating the enemy’s air defenses first, since this will let your attack helicopters swoop in to provide standoff fire against the enemy’s artillery and armor. You can also launch a couple of air strikes to pummel enemy artillery batteries, troop concentrations, and units guarding nearby victory objectives. Don’t forget that air strikes and artillery missions reduce the enemy’s entrenchment level by one each time they’re employed. Next, have your antitank units move up to within firing range of the enemy’s armored units.
Panzer Commander
Winning on a Tread and a Prayer

by Patrick C. Miller

Most tank simulations from M1 TANK PLATOON onward put gamers in the role of task force commander, giving them the ability not only to fight from within a tank, but also to issue orders to supporting air, tank, infantry, artillery, and antitank units. In these games, it’s possible to win with little or no involvement in combat from the first-person perspective.

Not so in SSI’s PANZER COMMANDER. As the leader of a WWII tank platoon, you can’t depend on friendly support units to carry the battle. If you die, the battle is over. How you handle your platoon and fight from your tank are the most important factors for success. Therefore, you need to focus on what’s happening in the immediate vicinity of your platoon, using your tank’s main gun to extend its sphere of influence and its secondary machine guns to take out nearby targets of opportunity.

Keep Your Head Up
In air-to-air combat, situational awareness is critical, and the same is true for the ground combat in PANZER COMMANDER. Where are the enemy tanks and antitank weapons? Perhaps the greatest challenge for gamers who’ve become accustomed to other tank simulations is having to adjust to PANZER COMMANDER’s style of play. At the game’s highest realism settings, you simply can’t win consistently by playing the game buttoned up and staring at the map or from behind the gunner’s sight. Instead, as platoon commander, it’s your responsibility to take control of the situation around you: spotting targets, assessing threats, making targeting decisions, and maneuvering appropriately. If you don’t, you won’t be around to tell the grandkids what you did in the war.

This means you’ve got to get your head out of the turret and constantly scan in all directions to spot new threats and potential targets. The mistake many players make is in believing that they can concentrate on shooting their tank’s main gun while turning the duties of driving, scouting, target spotting, and threat assessment over to their virtual crew members. Unfortunately, this is the shortest path to Valhalla.

One of the game’s strengths is its terrain modeling, which enables minor dips and folds in the ground to conceal potential threats, even in relatively flat desert terrain. If unseen enemy units always destroy your tank, it’s probably because you bypassed them, providing an easy shot against your tank’s vulnerable flank or rear armor. For this reason, your head must be out of the tank and on a swivel. Although you are most interested in what’s in front of your tank, never assume that your flanks are secure.

In addition, once a target is spotted, don’t fixate on it to the point of ignoring greater threats, especially when the selected target isn’t of immediate danger. Use the Tab key to cycle through all spotted targets and then engage the most...
U.S. Tanks

<table>
<thead>
<tr>
<th>Type</th>
<th>Available (Mo./Yr.)</th>
<th>Speed (mph)</th>
<th>Horsepower</th>
<th>Weight (Tons)</th>
<th>Hull Armor</th>
<th>Turret Armor</th>
<th>Main Gun</th>
<th>Elevation/Depression</th>
<th>Turret Traverse</th>
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<td>M4A3</td>
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<td>37</td>
<td>143/106/53</td>
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<td>34/12</td>
<td>220</td>
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<td>35/35/18</td>
<td>35/35/18</td>
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<td>22/6</td>
<td>500</td>
<td>42</td>
<td>143/106/71</td>
<td>143/106/106</td>
<td>90mm</td>
<td>+20º/-10º</td>
<td>27º/sec.</td>
</tr>
</tbody>
</table>

Speed = Top Road Speed/Lowest Off-Road Speed
Hull Armor = Effective Front/Side/Rear in mm
Weight = Metric Tons
Turret Armor = Effective Front/Side/Rear in mm

*Note: Sloped armor values represent the approximate effective armor thicknesses used in PANZER COMMANDER rather than the actual historical values.

Dangerous threat first. If there are multiple threats capable of destroying your tank, it's best to run for the nearest cover and plot a new course of action.

Maneuver Combat

While Greyhound might want you to "leave the driving to us," turning your driving duties over to the AI isn't a good idea in PANZER COMMANDER. The virtual drivers always attempt to follow suggested waypoints—which usually means driving directly into areas where you'll encounter the most resistance and the greatest danger.

Early in a mission, it's a good idea to spend a minute or two studying the map, preferably in a safe location. This will help you get your bearings. On missions in which your platoon must cover a lot of ground, take an occasional glance at the map to make sure you're on course and to spot areas you must capture (shown as yellow blocks).

When you attack, always look for opportunities to outflank the enemy's defenses. Antitank emplacements have a 90-degree field of fire to their front (45 degrees each side of center). Thus, when you're faced with numerous

The Commander's Joystick

By using a relatively inexpensive four-button joystick equipped with a hat switch and remapping a few keyboard commands, you can improve your response time in tight situations. For example, a joystick setup to assist with gunnery is:

- **Button 1:** Fires main gun
- **Button 2:** Fires coaxial machine gun
- **Button 3:** Gunner's sight 2.5x view
- **Button 4:** Gunner's sight 5x view
- **Hat switch:** Adjusts cross-hair ranging
- **Joystick:** Elevates gun, depresses gun, and traverses turret

In the unbuttoned, binocular, and external views, the joystick's hat switch can be used to rapidly pan the view 360 degrees around the tank or to look up or down, greatly aiding in spotting targets. If you're buttoned up in the commander's station, the hat switch will pan the view through the cupola viewport.

Bringing the tank to an immediate halt to fire an accurate shot depends on being able to quickly press the brake key. If the default delete key is too cumbersome, remap the keyboard commands to make the space bar the brake command. When the joystick is used for gunnery, the space bar becomes superfluous for firing the main gun.

If you keep one hand on the joystick and the other on the keyboard, it becomes much easier to coordinate spotting, maneuver, and use your gunnery. On the move, use keyboard commands to speed up, slow down, or stop the tank. From the unbuttoned or external view, keep your thumb on the joystick's hat switch to constantly scan the area to the front and around your tank.

British Tanks

<table>
<thead>
<tr>
<th>Type</th>
<th>Available (Mo./Yr.)</th>
<th>Speed (mph)</th>
<th>Horsepower</th>
<th>Weight (Tons)</th>
<th>Hull Armor</th>
<th>Turret Armor</th>
<th>Main Gun</th>
<th>Elevation/Depression</th>
<th>Turret Traverse</th>
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<tr>
<td>Matilda II</td>
<td>1/40</td>
<td>13/4</td>
<td>380</td>
<td>27</td>
<td>75/70/55</td>
<td>78/57/57</td>
<td>2 pounder</td>
<td>+28º/-11º</td>
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<tr>
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<td>26/7</td>
<td>340</td>
<td>19</td>
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<td>15/4</td>
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<td>40</td>
<td>102/74/70</td>
<td>102/74/70</td>
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German Tanks

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<td>55</td>
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<td>259/112/112</td>
<td>88mm L/71</td>
<td>+15°/-7°</td>
<td>18°/sec</td>
</tr>
</tbody>
</table>

Soviet Tanks

<table>
<thead>
<tr>
<th>Type</th>
<th>Available (M Jo/YR)</th>
<th>Speed (mph)</th>
<th>Horsepower</th>
<th>Weight (Tons)</th>
<th>Hull Armor</th>
<th>Turret Armor</th>
<th>Main Gun</th>
<th>Elevation/Depression</th>
<th>Turret Traverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-7</td>
<td>6/35</td>
<td>52/11</td>
<td>500</td>
<td>14</td>
<td>18/18/18</td>
<td>18/18/18</td>
<td>45mm</td>
<td>+40°/-10°</td>
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</tr>
<tr>
<td>KV-1c</td>
<td>1/42</td>
<td>17/4</td>
<td>600</td>
<td>47</td>
<td>110/120/90</td>
<td>120/120/90</td>
<td>76.2mm</td>
<td>+30°/-3°</td>
<td>17°/sec</td>
</tr>
<tr>
<td>T-34c</td>
<td>1/42</td>
<td>33/9</td>
<td>450</td>
<td>31</td>
<td>66/64/66</td>
<td>98/73/74</td>
<td>76.2mm</td>
<td>+30°/-3°</td>
<td>36°/sec</td>
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<tr>
<td>KV-85</td>
<td>9/43</td>
<td>24/6</td>
<td>600</td>
<td>46</td>
<td>75/60/60</td>
<td>160/110/100</td>
<td>85mm</td>
<td>+30°/-3°</td>
<td>12°/sec</td>
</tr>
<tr>
<td>IS-2</td>
<td>1/44</td>
<td>22/6</td>
<td>600</td>
<td>46</td>
<td>120/95/60</td>
<td>160/110/100</td>
<td>88mm</td>
<td>+30°/-3°</td>
<td>12°/sec</td>
</tr>
<tr>
<td>T-34/85</td>
<td>3/44</td>
<td>33/10</td>
<td>500</td>
<td>32</td>
<td>66/84/66</td>
<td>126/105/84</td>
<td>85mm</td>
<td>+30°/-3°</td>
<td>17°/sec</td>
</tr>
</tbody>
</table>

Shall You Upgrade?

As time progresses in campaign games, you're occasionally asked if you want to upgrade to a new or improved tank. Think carefully before making this decision. Some "upgrades" require you to sacrifice advantages you might prefer to keep. For example, during the Soviet 12th Guards campaign, you can upgrade from the KV-1/42 to the KV-1S. The S model is faster, but sacrifices a significant amount of armor for increased speed. Near the end of the 12th Guards campaign, you can switch to the mighty IS-2, a fairly mobile tank with a huge gun and thick armor. Unfortunately, this beast carries a pitifully small load of ammunition, a distinct drawback on longer missions. You might want to seriously consider sticking with the KV-85.

Divide and Slaughter

Whether attacking or defending, you should always try to take on enemy units a few at a time. Use hills, valleys, and forests to screen your movement and to limit how many enemy units can see you at any one time. Slowly ease your way over hills to spot threats on the opposite side before moving through unscouted areas. Avoid "skylining" tanks in your platoon—the practice of moving along the highest point of a crest or hill, which endangers your tank by silhouetting it against the sky.

Always be on the lookout for terrain behind which your entire platoon can be deployed to fight from hull-down positions. That is, the tank's turret and gun should peek over the top while its hull remains hidden. Walls, hills, and low rises work best for this tactic. Practice the maneuver by observing through the unzoomed gunsight view (FG) as your tank slowly climbs the crest of a hill. The moment you can see over the other side, hit the brakes.

When defending, don't be content to sit in one place. Many times, enemy units will attack from more than one direction. Move to a position that enables your tank to engage a few attackers at a time and that provides cover to the flanks and rear. Look for a spot that enables you to anchor at least one flank on an area that's difficult to maneuver through or around. Again, fight from hull-down positions whenever possible.

Once contact with the enemy is made, the best approach is usually a cautious advance that enables you to engage and destroy targets one at a time. However, there are times when getting from Point A to Point B means exposing your platoon to enemy fire. In these instances, a mad dash at top speed is in order. Make a few zigzags to throw off enemy aim and make use of cover as much as possible.

Learn to recognize terrain such as mud, ice, and steep slopes that slow your movement to a crawl. Not only do you risk being caught in the open with no chance to run for cover, but you also hurt your chances for completing a mission on time.

Fire Combat

In PANZER COMMANDER, shooting the big gun is the most fun. Although the AI gunners usually do a competent job of engaging and destroying targets, few players are content to delegate this duty to their crew. The joy of putting steel on target and turning enemy tanks into smoldering scrap metal is what this game is all about.

But shooting the gun is one thing, and doing it well is another.
### Relative Armor Penetration Values, Main Guns

<table>
<thead>
<tr>
<th>Weapon</th>
<th>Projectile Type</th>
<th>500 meters @ 30° slope</th>
<th>1,000 meters @ 30° slope</th>
<th>1,500 meters @ 30° slope</th>
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<tbody>
<tr>
<td>50 mm L/42</td>
<td>Pzgr 39/Pzgr 40</td>
<td>96/58</td>
<td>364</td>
<td>286</td>
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<tr>
<td>50 mm L/60</td>
<td>Pzgr 39/Pzgr 40</td>
<td>57/72</td>
<td>44/38</td>
<td>34</td>
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<tr>
<td>75 mm L/72</td>
<td>K Gr rot Fz</td>
<td>35</td>
<td>33</td>
<td>33</td>
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<tr>
<td>75 mm L/43</td>
<td>Pzgr 39/Pzgr 40</td>
<td>92/110</td>
<td>82/87</td>
<td>72/69</td>
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<tr>
<td>75 mm L/48</td>
<td>Pzgr 39/Pzgr 40</td>
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<td>75 mm L/70</td>
<td>Pzgr 39/Pzgr 40</td>
<td>124/174</td>
<td>111/149</td>
<td>99/127</td>
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<tr>
<td>88 mm L/56</td>
<td>Pzgr 39/Pzgr 40</td>
<td>110/155</td>
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<tr>
<td>88 mm L/71</td>
<td>Pzgr 39/Pzgr 40</td>
<td>185/217</td>
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**Germany**

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<td>76.2 mm F-34</td>
<td>APHE/ADPS</td>
<td>69/92</td>
<td>61/60</td>
<td>54/79</td>
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<tr>
<td>85 mm ZS5 5-3</td>
<td>APHE/ADPS</td>
<td>111/138</td>
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<tr>
<td>122 mm D-2ST</td>
<td>APHE/HEAT</td>
<td>145/200</td>
<td>145/200</td>
<td>-</td>
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**U.S.S.R.**

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<th>914 meters @ 30° slope</th>
<th>1,372 meters @ 30° slope</th>
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<tr>
<td>37 mm M6</td>
<td>APC-M51</td>
<td>53</td>
<td>46</td>
<td>40</td>
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<tr>
<td>75 mm M6</td>
<td>APC-M61</td>
<td>66</td>
<td>60</td>
<td>55</td>
</tr>
<tr>
<td>76 mm M1</td>
<td>APC-M62</td>
<td>93</td>
<td>88</td>
<td>82</td>
</tr>
<tr>
<td>90 mm M3</td>
<td>APC-M82/HVAP</td>
<td>122/221</td>
<td>122/199</td>
<td>114/176</td>
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</table>

**U.S.**

<table>
<thead>
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<th>40</th>
<th>63</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 pdr Mk X</td>
<td>AP-T</td>
<td>81</td>
<td>74</td>
<td>120/176</td>
</tr>
<tr>
<td>6 pdr Mk V</td>
<td>APCBC-T</td>
<td>140/208</td>
<td>130/192</td>
<td>120/176</td>
</tr>
</tbody>
</table>

**U.K.**

You should familiarize yourself with the performance of the gun your tank carries (see chart). Being able to hit an enemy vehicle means little if your gun can't penetrate its armor. The armor penetrating power of your tank's gun determines whether you can engage in long-range, straight-up shootouts or whether you should maneuver for a close flank or rear shot.

Some guns, particularly on early-war tanks, fire rounds at such low velocities, their effective range is 500 meters or less. For them, using the rangefinder in the 5x (F7) view to dial in the correct range is almost a must. As the war progressed, most nationalities adopted larger-caliber, high-velocity guns that fired on flatter trajectories out to ranges of 1,500 meters and beyond, the German 88mm being the most famous example.

### Make It Snappy

One valuable tank gunnery technique is firing snap shots. Sometimes you'll find yourself in a situation in which enemy vehicles or antitank emplacements are so close and threatening that there is no time to use the rangefinder. In fact, using the 5x magnification view for close targets can be disorienting and waste precious time.

Instead, switch immediately to the 2.5x (F6) gunsight, which offers a wider view, making it easier to quickly locate nearby targets. Although, there is no rangefinder in this view, the basic reticule is quite effective for close-range shooting, especially if your tank is equipped with a high-velocity gun. Simply point and shoot. With practice, you'll find that you can shoot quickly and accurately by estimating the proper lead and elevation. Because WWII tanks don't have the gun stabilization and fire control systems that make modern tanks fire-on-the-move marvels, shooting accurately means having to fire while stationary. However, there are times when firing on the move is required to deal with a well-positioned enemy gun or vehicle behind a hedge, forest, or hill. In such a case, it's important to line up the target and correctly time your approach.

Enemy vehicles behind cover will almost always fire before they can actually hit your tank. Therefore, by having your gun aimed toward the enemy unit and advancing slowly to keep your gunsight picture fairly stable, you can often emerge from behind cover while the opposing vehicle is busy reloading. In this situation, you must make your first shot count. If you miss, you're dead.

Also, don't neglect to use your tank's coaxial machine gun. It's very good for taking out sandbagged infantry and antitank emplacements within a few hundred meters of your tank. In addition, you can use it to knock down buildings that enemy vehicles are hiding behind. Have your finger on the main gunfire button to instantly pump an armor-piercing round into your surprised enemy.

Although air support, artillery, and infantry are part of **Panzer Commander**, it is neither a game about WWII combined-arms tactics nor a game that enables players to duplicate the exploits of the war's great tank force and kampfgruppe commanders. It's a game that's unabashedly about tanks and what it's like to command from the turret of a lumbering iron beast. The sooner you can put yourself in that frame of mind, the better player you'll become.

**Thanks to Rick Martinez of SSI for his help in compiling data (especially charts) for this article - Ed.**
**MIGHT & MAGIC VI**

A lot of gamers I know obsess over reputation in MIGHT & MAGIC VI. While this is commendable up to a point, reputation is only important for two things in the game: You must be saintly to become a Light master and notorious to become a Dark master. It's easy to become saintly. Donate at temples to get your reputation up to respectable (or better). Then complete several council or promotional quests in a short period of time. If you're close to saintly, pick up a bard or other reputation-boosting NPC.

- Completing the price-fixing quest
- Raiding the sarcophagi in Castle Darkmoor
- Performing the ritual and touching the Baa face in the Superior Temple of Baa
- Letting the figure in Castle Kriegspire heal your party

Becoming notorious is very easy, providing you're willing to kill innocent peasants. If casual murder is a bit much for your playing style, performing enough of the following actions will sufficiently lower your reputation:

- Donating and healing at the temples of Baa
- Selling bones
- Returning the candelabra

All those peasants milling around towns and in houses are really available for hire. While they all cost some gold, non-player characters (NPCs) can provide a lot of bang for the buck. Particularly valuable are NPCs that boost your party's skill (merchants, spies), the amount of experience you earn from combat (teachers, instructors), spell skills (spell masters, mystics), weapon skills (arms masters, weapons masters), and the amount of money you find (factors, bankers). Other NPCs are of more limited benefit, but depending on the makeup of your party, the stage of its development, and what you need to do, they may be worth checking out.

Just make sure that you don't hire two NPCs of the same type. Two bankers, for example, double your cost, but only provide the benefit of one banker: Instead, hire two NPCs of different types that provide the same sort of benefit, such as one factor and one banker. Since NPCs change frequently, you should be able to find the ones you seek.

---

**GET MEDIEVAL**

Yes, it's GAUNTLET for the '90s, and you knew the game had to have cheats. So, without further ado:

<table>
<thead>
<tr>
<th>Code</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>mpmk</td>
<td>God mode</td>
</tr>
<tr>
<td>mppos</td>
<td>Global position</td>
</tr>
<tr>
<td>mptps</td>
<td>Frames per second</td>
</tr>
</tbody>
</table>
**Strategy/War**

**COMMANDOS: BEHIND ENEMY LINES**

If some of the tougher missions in COMMANDOS leave you feeling like an unwashed member of the Dirty Dozen, try these codes. After beginning the game, type 1982GONZO, then type one of the following.

<table>
<thead>
<tr>
<th>Code</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift-X</td>
<td>Selected commando is teleported to chosen location</td>
</tr>
<tr>
<td>Shift-N</td>
<td>All objects in your field of view are displayed</td>
</tr>
<tr>
<td>Shift-Ctrl-N</td>
<td>Jumps you to the next mission</td>
</tr>
<tr>
<td>Ctrl-I</td>
<td>Your commandos are now invulnerable</td>
</tr>
</tbody>
</table>

—Terry Coleman

**MECHCOMMANDER**

Having a Mech-sized headache trying to win later missions in MECHCOMMANDER? These cheats can improve your score in a hurry, but be careful. None of the codes have been thoroughly tested by FASA or MicroProse (they won’t handle tech-support calls on cheats), and we’ll tell you from experience, some of them—particularly osmium and Ctrl-Alt-W—will crash your system if you rely on them too much. So, as always, make sure to back up your save-game files before trying these out, and don’t say we didn’t warn you!

It takes a little effort to activate the cheats:

1. Update to MECHCOMMANDER version 1.8.
2. Find the windows.fit file in the directory where you installed MECHCOMMANDER (the default directory is C: \ Program Files\Fasan\Interactive\MechCmndr)
3. Rename windows.fit as inxtrimecoeff, which is the secret file needed to enable the cheats.
4. Type the codes during the proper phase as shown below.

The following cheats must be typed in during the Logistics Phase:

<table>
<thead>
<tr>
<th>Code</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>poundofflesh</td>
<td>Adds 1,000,000 resource points</td>
</tr>
<tr>
<td>rockandrollpeople</td>
<td>Removes drop weight limit on current mission</td>
</tr>
</tbody>
</table>

The following cheats must be typed in during each mission:

<table>
<thead>
<tr>
<th>Code</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctrl-Alt-W</td>
<td>Jumps to mission successful screen</td>
</tr>
<tr>
<td>osmium</td>
<td>Makes your Mechs and vehicles invincible.</td>
</tr>
<tr>
<td>lorry</td>
<td>Repairs damaged armor/weapons</td>
</tr>
<tr>
<td>lordbunny</td>
<td>Gives you unlimited, instantaneous artillery strikes (Press b and left-click to nuke the target)</td>
</tr>
<tr>
<td>mineyeshave</td>
<td>Reveals the entire map</td>
</tr>
<tr>
<td>seentheflery</td>
<td>Max out artillery skills on all MechWarriors</td>
</tr>
</tbody>
</table>

—Terry Coleman

**TRIBAL RAGE**

Don’t worry about moving credits around to the region that will launch an attack. The game gives you an average amount based on the number of credits divided by the number of regions you hold. The AI launches attacks piecemeal, so putting up a few defensive hardpoints or tripods pays big dividends. You can then build up your main force in the rear, and not have to constantly resupply the front lines.

One important tech to buy is the ammo pack, which gives your units longer legs in the attack.

When moving a truck carrying mining gear, don’t right-click, or the truck will plant the mine right there, even if no ore is present—and you’ll be out 3,000 credits.

—Loyd Case

**Action**

**NAM**

We tried to warn you in our review last month. But if you’d already bought NAM by then, you’d probably like to finish it now. With that in mind, here are some helpful tips:

1. The first trick to making it through each mission is to save early, save often. You’re going to die a lot. Get used to it.
2. Work the flanks. Never approach a location over open ground. This is especially true when assaulting beaches or fortified positions.
3. Pay attention to sound. Most radio messages warn of an impending attack, and the sound of people conversing in Vietnamese is always bad. You can usually hear artillery and air strikes on their way in, allowing you time to take cover.
4. Use your grunts well. They provide covering fire and medical assistance (among other things), but you can’t rely on them to survive in a hostile environment. If you think they will die uselessly, and if you want their assistance later, consider ordering them to stay in cover until you need them.
5. Don’t try to kill everything in sight. Keep moving, use cover wisely, and work your way directly toward your objective. If you’re under fire and can’t immediately identify where the threat is coming from, or if it’s coming from several directions, get under cover before worrying about shooting back. Don’t stand and slug it out. If possible, let the VC come to you, then pick them off one at a time. —Tim Carter
EA Simulations Release: 10/8 PC

CAYTEX R4 FORCE FEEDBACK RACING WHEEL & PEDALS is the most advanced racing system on the market. Everything is where it needs to be and designed to be comfortable even after hours of driving. The Force Feedback system also provides a completely different driving experience, allowing the user to feel the road surface and road conditions, giving you the ultimate driving simulation.

SALTBEK Hardware Release: 10/8 PC

LUFTHAFN COMMENDER™ Fly the work-horse of the Luftwaffe, the Me-109. These planes and 58 planes in all includes 50 single pilot missions and a "Custom Combat" option. All modes and multiple player options (up to 10 players) allow for a direct connection to the Internet.

EA Simulations Release: 11/8 PC

TEST DRIVE & Bigger, badder, faster! The classic mod of Supercars vs. muscle cars from the past continues. Now with over 20 cars & 17 tracks. Features an increasingly extensive variety of modes including single, split-screen, and multiplayer games.

MADDEN NFL 99 Stunning graphics, dead-on gameplay, more animations, involved coaching, complex play calling, and the ability to get fired for poor coaching. Offenses and defenses adjust on the fly. The list goes on and on.
TOP 100
CGW'S MONTHLY READERS' POLL

Each month, 2,000 CGW subscribers are selected at random to rate 100 computer games. The results of that poll are combined with the results of previous months to yield a cumulative average for the best plays in gaming. If you receive a ballot, please return it with your ratings so that other gamers and game publishers can benefit from your feedback.

### TOP ACTION GAMES

<table>
<thead>
<tr>
<th>RANK</th>
<th>GAME</th>
<th>COMPANY</th>
<th>SCORE</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quake II</td>
<td>id Software</td>
<td>8.54</td>
<td>4.5</td>
</tr>
<tr>
<td>2</td>
<td>Quake II: Scourge</td>
<td>id Software/Activision</td>
<td>8.51</td>
<td>4.5</td>
</tr>
<tr>
<td>3</td>
<td>Quake II: Dissolution</td>
<td>id Software/Activision</td>
<td>8.52</td>
<td>4.5</td>
</tr>
<tr>
<td>4</td>
<td>Jedi Knight: Dark Forces II</td>
<td>LucasArts</td>
<td>8.51</td>
<td>4.5</td>
</tr>
<tr>
<td>5</td>
<td>Unreal</td>
<td>GT Interactive</td>
<td>5.40</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Jedi Knight: Mysteries</td>
<td>LucasArts</td>
<td>8.35</td>
<td>4</td>
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<tr>
<td>7</td>
<td>Tomb Raider</td>
<td>Eidos</td>
<td>7.92</td>
<td>4</td>
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<td>8</td>
<td>Moto Racer</td>
<td>EA</td>
<td>7.82</td>
<td>4</td>
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<tr>
<td>9</td>
<td>Battlezone</td>
<td>Activision</td>
<td>7.73</td>
<td>3.5</td>
</tr>
<tr>
<td>10</td>
<td>Tomb Raider II</td>
<td>Eidos</td>
<td>7.71</td>
<td>3.5</td>
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</table>

### TOP ADVENTURE GAMES

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<tr>
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<td>Curse of Monkey Island</td>
<td>LucasArts</td>
<td>8.31</td>
<td>4</td>
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<td>Twain's Odyssey</td>
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<td>Activision</td>
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<td>N/R</td>
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<td>4</td>
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### TOP CLASSIC/PUZZLE GAMES

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<tr>
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**Games on unnumbered lines are tied with game on line above. ★ = Top game of genre. Red = New Game, AD = Adventure, RP = Role-Playing, SI = Simulation/Space Combat, ST = Strategy, WG = Wargame, AC = Action, SP = Sports, CP = Classic/Puzzle. Games are retired after two years and become eligible for the Hall of Fame.**
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Welcome to the Cooperstown of Computer Games. Games that broke the records, established the benchmarks, and held gamers in delighted trances for hours untold.

Alone in the Dark (I-Motion, 1992)
Lovercraftian horror goes 3D, with shifting camera angles adding to the creepy atmosphere.

The Bard's Tale (EA, 1985)
Pioneered three-point animation, 3D color maze, and auto-mapping.

Battle Chess (Interplay, 1988)
The Franklin Mint of computer chess games, with violent and funny animation disputing a solid chess engine.

Betrayal at Krondor (Dynamix, 1993)
As rich and imaginative as Raymond Feist's world itself.

Chessmaster (Software Toolworks, 1986)
The Cadillac of casting, it gets better with each version.

Command & Conquer (Virgin/Westwood Studios, 1995)
Moved beyond Dune II with innovative features and multiplayer play, ushering in the current real-time strategy game explosion.

Day of the Tentacle (LucasArts, 1993)
Offbeat sequel to Maniac Mansion, the interactive equivalent of a classic Chuck Jones cartoon.

DOOM (id Software, 1993)
Revolutionized PC action games and network gaming; now surpassed in technology, but not in gameplay.

Dungeon Master (FTL Software, 1987)
Trend-setting graphics, digitized stereo, and great hack-and-slash from a decade ago.

Earl Weaver Baseball (EA, 1986)
Physics-based baseball game pleased both action and statistics fans; still unsurpassed more than a decade later.

Empire (Interplay, 1978)
WII in space; this mainframe transplants brought elegant mechanics, depth, and unforgiving replayability to the PC.

F-19 Stealth Fighter (MicroProse, 1988)
A "thinking man's" SIM, with great missions, in which sneaking around is as fun as dogfighting.

Falcon 3.0 (Spectrum Holobyte, 1991)
Tough, detailed jet sim with ambitious AI, graphics, and connectivity to match its realism.

Front Page Sports Football Pro (Dynamix, 1993)
Physics-based system, good AI, and unmatchable career play make this the ultimate in pigskin.

Gettysburg: The Turning Point (SSI, 1986)
First variable order of battle changed the look of all American Civil War games on the PC.

Gunship (MicroProse, 1989)
Great character continuity, R&F for fatigued pilots, and even sick leave; best chopper fare until Jane's Lookout.

Harpoon (360 Pacific, 1989)
In depth modern naval battles in realtime, based on the world's Cold War fears.

Kampfgruppe (SSI, 1985)
Its WWII East Front armor battles were a success on multiple platforms.

King's Quest V (Sierra On-Line, 1990)
Redefined the graphic adventure with new parser and VGA graphics.

Lemmings (Psygnosis, 1991)
The lovable cartoon lilliputians were hits on every platform.

Links 386 Pro (Access Software, 1992)
Topped the leader board in graphics and realism for its era.

M-1 Tank Platoon (MicroProse, 1989)
Realistic sim that properly focused on armored formations rather than on single vehicles; good mission designs.

Master of Magic (MicroProse, 1994)
The atmosphere of Magic: The Gathering with the sophistication of Civ.

Master of Orion (MicroProse, 1993)
Remarkable diplomatic AI; deep and varied technology tree; aliens required radically different playing styles.

Mech Brigade (SSI, 1985)
Improved KAMPFLIEGER system for modern armored battles.

MechWarrior 2 (Activation, 1995)
A serious treatment of Mech design and resource management, combined with complex and addictive battles; legitimized "giant robot simulations."

Might & Magic (New World Computing, 1986)
First-person, maze-based RPG with huge environment and tough combat.

A landmark multiplayer strategy game that had no weapons of destruction, just cultural competition that made economics fun.

Panzer General (SSI, 1990)
Entertaining wargame with an elegant interface, great campaigns, strong AI, good graphics, and impressive sound.

Red Baron (Dynamix, 1990)
WII air combat with great graphics, incredible realism, and a versatile replay feature.

The Secret of Monkey Island (LucasArts, 1990)
Comedy that set new standards in writing quality and social sensitivity.

Sid Meier's Civilization (MicroProse, 1991)
CIVI's first-rated game of all time, indubitably addictive world-conquest/exploration game.

Sid Meier's Pirates (MicroProse, 1987)
Combines pirate adventure, action, RPG, and strategy to make the most successful hybrid of all time.

Sid Meier's Railroad Tycoon (MicroProse, 1990)
SIMCITY meets 1830, with robber barons for emphasis.

SimCity (Maxis, 1987)
Urban planning with fascinating consequences and challenges; the first great software toy.

Starflight (EA, 1986)
Depth, great characters, and a good sci-fi storyline set early RPG standard.

Their Finest Hour (LucasArts, 1989)
WII sim with great campaigns, realism, and many crew-member options.

TIE Fighter (LucasArts, 1994)
Most satisfying Star Wars space-combat game to date; lets you live on the dark side.

Ultima III (Origin Systems, 1985)
Coherence and surprising subtly emphasized role-playing and set the tone for later Ultimae.

Ultima IV (Origin Systems, 1985)
High concept RPG explored meaning of virtue and put the role in role-playing.

Ultima VI (Origin Systems, 1990)
RPG as morality play, replete with moral choices and realistic environs.

Ultima Underworld (Origin Systems, 1992)
The first truly 3D RPG, and still the most convincing; its dungeon walls are nicely "painted" with texture-mapped graphics.

War in Russia (SSI, 1984)
More realistic than Eastern Front, it captured the essence of the largest land campaign in history.

WarCraft II (Blizzard, 1994)
More cerebral than most real-time strategy games, it offered deceptive depth and personality to spare.

Wasteland (Interplay, 1988)
Derived from Mike Stackpole's Mercenaries, Spies, and Private Eyes, this is the definitive postapocalyptic RPG.

Wing Commander (Origin Systems, 1990)
A hot space-flight engine, unfolding story, and great characters.

Wing Commander II (Origin Systems, 1991)
Darker story, grittier feel, sound card advances, and tougher AI made this a sequel of sequels.

Wing Commander III (Origin Systems, 1994)
Surprisingly satisfying MMV space-opera didn't lose the essence of the space-combat game.

Wizardry (Sir-Tech Software, 1981)
Defined the computer RPG with maze-based viewpoint and atmospheric spell names.

Wolfenstein 3-D (id Software, 1992)
Smooth-scrolling action bestialy cleverly updated the original and put shareware back on the map.

X-COM (MicroProse, 1994)
Premier tactical squad-level engine combined with alien tech research and pop culture for a sci-fi game nearly as addictive as Civilization.

You Don't Know Jack (Berkeley Systems, 1996)
Fresh and irreverent, Jack turned trivia gaming on its collective ear to become the first mainstream CD-ROM with a puchul game play bite.

Zork (Infocom, 1981)
The progenitor of adventure games on the PC, its humor and challenging puzzles seem timeless. The game has since spawned a number of sequels, none of which has equaled the original.
Upgrade This!

Or, My Force-Feedback Joystick and I Would Like to Be Alone Now

Contrary to what you might believe, magazine editors do not make a lot of money. Let me rephrase that. Gaming magazine editors do not make a lot of money. Think of it as simple supply and demand. If it’s a brain transplant you’re after, well, there aren’t many people who can do the job for you—at least, not many who can do it in a way that wouldn’t hurt you really, really badly—so you have to pay a lot for it. Sorry, That’s what you get for needing a new brain.

But any moron with a computer, bad posture, and an inflated sense of self-worth can write a game review. I mean, really. It’s not like any of us went to some kind of gaming graduate school to learn how to do this.

So I accept my embarrassingly piddling salary without complaint, and I would certainly never stoop to whining about it in public even if I was bitter, which I’m not. The truth is that the executive here simply would not be able to take all the golf trips and Aspen retreats necessary to keep this magazine running if I started demanding money so that my child could eat a healthy dinner for once.

In any event, the only reason I’m discussing my financial misery is that I just finally paid off the last of my debt to Features Editor Denny “Cement Shoes” Atkins, who sold me his Pentium 233/MMX about six months ago. But instead of being able to rejoice at my financial freedom (and the fact that Denny will now allow me to keep my kneecaps), I find myself being bummed out and frustrated. Why? Because now that I own the darn thing, I’m already beginning to feel the need to upgrade it.

Whence sprung these feelings of inadequacy? From right about

And UNREAL is just the beginning. As I worked on this month’s Holiday Hot 100 feature, I kept coming across games with system requirements that were just horrendously high, or that were going to make me buy more components if I wanted to enjoy the game to its fullest. It’s ridiculous. I mean, how does the hard-core gamer without the high-end salary keep up anymore? How are you supposed to plop down your hard-earned cash on a machine, knowing it’s going to be obsolete in a year? Just how often are we expected to buy a new CPU? You know what I think? I think there are just too many people in this industry who are right in my house. Would that make them happy?

Yeah, I know. I don’t really need any of this stuff. And I know that the trade-off for this expensive mania is cooler looking games than ever before—like NEED FOR SPEED III, a game so pretty that I would marry it if it would have me.

But when you step back for a second and look at all the money that people are being asked to invest in the name of computer entertainment, it just gets kind of depressing and horrifying and a little bit sick.

I can’t stand it anymore. It’s time for a revolution. It’s time to stick it to The Man. Rise up, my

Any moron with a computer, bad posture, and an inflated sense of self-worth can write a game review.

the time that I first tried to play UNREAL, that’s whence. Actually, I guess they first began in junior high school P.E. class, if you must know, but that’s not a topic for discussion here. Rest assured that I have absolutely nothing to be ashamed of, and I wouldn’t admit it here if I did.

UNREAL, along with being the most beautiful and boring first-person shooter ever (think of it as MYST for the testosterone set), is just the latest example of a game that “pushes the envelope” so far in terms of technology that, while it’s a beauty to behold, it is nearly impossible to play unless you’re dedicated to spending all your money on the latest and greatest hardware.

And it’s not just CPUs. It’s speakers, 3D cards (my Voodoo card now needs to be replaced with a Voodoo²), game controllers, and more. When I became CGW’s sports editor, I accepted the fact that I needed a gamepad. Then I realized I’d need a joystick, too, for driving games. Then I needed a force-feedback joystick. Then I needed a steering wheel. Now I need a force-feedback wheel.

Coming up next year, I suppose, I’ll need a mylar body suit and brain implants and life-size replica of a Formula One car friends. Unplug your Pentiums. Put these 386s and Mac Pluses back on your desks—and let’s get some multiplayer TETRIS going, the world’s gone mad and it’s time to stop it.

And any of you who are righteously disconnecting your force-feedback wheels out of protest, send ‘em my way. I’ll need the cables and pedals, too.

What Jeff doesn’t realize is that the next wave of computer games will all be backward-compatible with his Mac Plus, which now sits in his closet next to his CB radio and dial telephone. Tell him to quit his bellyaching and get back to work at jhgreen@zd.com.
With more and more next-generation multimedia software arriving on store shelves every day, it's only natural that your new PC should have DVD technology. Because you won't be able to take advantage of revolutionary features like rich, theater-quality video and Dolby digital high fidelity surround sound on a tired old dinosaur like CD-ROM. With up to 17GB of storage capacity (that's over 20 times the capacity of CD-ROMs), DVD lets you enjoy enhanced mainstream home/business software, engrossing educational and reference titles, interactive video games and even full-length motion pictures. And, since DVD is compatible with standard CD-ROMs, your favorite software and music is safe from the dreaded digital graveyard. So give us a call for your next PC system. Because the times are changing. And you don't want to be left behind.

For faster service, please have your order code and keycode available when calling.

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<td>12.1&quot; SVGA Active Matrix TFT Display</td>
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<td>32MB SDRAM</td>
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<td>NEW 8GB Ultra ATA Hard Drive</td>
<td>3GB 266 Ultra ATA Hard Drive</td>
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<td>New 2x AGP 4MB ATI Rage Pro 3D Video</td>
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<td>MS Office 97 Small Business Edition v2.0</td>
<td>MS Home Essentials 99% with Money 99%</td>
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